Ymddiriedolaeth GIG Gwasanaethau Ambiwlans Cymru
Welsh Ambulance Services NHS Trust

Community First Responder Initial Training
Day Four Lesson Plan

Tutor: Jon Johnston **Session**: Day four **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: • Demonstrate management of head and spinal injuries • Demonstrate management of chest injuries • Demonstrate management of a wound • Show the ability to manage catastrophic haemorrhage. • Demonstrate management of burns	**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 4-6 – Learning outcomes	Learning Outcomes and reference materials **Learning Outcomes:** By the end of the day volunteers will be able to: • Demonstrate understanding several medical emergencies. • Be able identify several medical emergencies from presenting signs and symptoms. • Demonstrate the effective management of several medical emergencies.	Look, listen, ask questions, Demonstrate.	Power Point, V1.
Slide 7 - 9 – What trauma is?	• This patient has a catastrophic haemorrhage from bilateral lower limb amputations. • Notice there is no evidence of treatment from any bi-standers yet. • This photo must have been taken moments after injury. Three people were killed, hundreds injured with 17 who lost limbs.	Look, listen, ask questions , Demonstrate	Power Point, V1.

	• Boston Marathon bombing in 2013. • Two homemade pressure cooker bombs detonated 14 seconds and 210 yards apart. Trauma sounds a very exciting topic • However, the majority of calls CFRs may respond to would be domestic elderly fallers.		
Slide 10- Mechanism of injury	• Referred to as MOI • Centre is a bilateral amputation above the knees with improvised tourniquets. • Image in the centre is from US Military in 1990s. • Simply what happened to cause the injuries sustained.	Look, listen, ask questions.	Power Point, V1.
Slide 11 Trauma Kit	• Airway kit is equally as important during trauma. • O2 is advised in all major trauma. • Dressing bag and internal pouch for tourniquet	Look, listen, ask questions Demonstration.	Power Point, V1.
Slide 12-14 – Assessment	• Your own safety is paramount including PPE. • Safety of casualty. Safety of bystanders. Safety of other responders. • Consider how injuries were caused prior to rushing in. • Is the environment going to change (eg tides, exits). • How many casualties can you see? • Do you need extra resources before getting bogged down in treatment. Get the call in early! Seconds matter. • Q: What tools do you have to deal with this in the kit?	Look, listen, ask questions.	Power Point, V1.

	• Improvisation demonstrated from other items (triangular bandage, belt, tie) •		
• Slide 15-19 – Haemostatic escalator.	• This is the Haemostatic escalator. • Steps taken to stop the flow of blood in the blood vessels • Elevation is not appropriate in all areas – if direct pressure fails then pack wound. • A sufficient quantity of gauze can be packed into the wound creating 'mechanical pressure' to the injured vessels and provides a structure for clotting to adhere to. • **Group Task** - Apply to a limb of the person next to you. Ask them first! • Don't tighten too much on yourself but see how quickly it slows and stops blow flow to your hand or foot. • Olaes® is a modular Bandage is the newest generation of trauma bandage. • 3 metres of gauze, a removable occlusive plastic sheet for **OPEN CHEST INJURIES** • pressure bar that can also act as an eye cup. • Velcro strips prevent elastic roll from accidentally unravelling and secure when complete. • TraumaFix - highly absorbent dressing pad and pressure bandage. • It allows direct pressure to be applied quickly and maintained easily, secured instantly with velcro. • Ambulance dressings are simply not substantial enough to cope with the bleed and applying enough pressure with a conforming bandage will be virtually impossible.	Look, listen, ask questions.	Power Point, V1.

	• Multiple major bleed injuries can be stemmed quickly, allowing the casualty to be moved easily. • The dressing is a significant advance in trauma treatment.		
Slide 20 – c-spine	• This is manual in-line stabilisation of the head and neck. • Easy to adopt but you may have to hold the head for a while until help arrived.	Look, listen, ask questions.	Power Point, V1.
Slide 21 - Airway	• Airway comes second to Cat' Haem' • Building on your previous training assure airway in managed. • Consider MOI and think if there might be a C-Spine injury? • Protect it by using a jaw thrust.	Look, listen, ask questions.	Power Point, V1.
Slide 22-25 – Breathing and Chest injury	• Listen for different sounds. • Gurgling or bubbling may be fluid in the back of the. • Use suction if needed. • O2 is advised in trauma straight away regardless of any other factor. With a trauma patient it is always good to expose the chest. • Is there an equal rise and fall of the chest. • Is there an adequate respiratory rate? • If below 10 or above 30 they need help so assist with ventilations. • Chest injuries account for 25% of all deaths from traumatic injury. • Open chest wounds occur when an object (knife, shrapnel or bullet) penetrates the chest wall.	Look, listen, ask questions.	Power Point, V1.

	• Fractured ribs may break through the skin to cause an open chest injury. • Open chest injury is also known as a sucking chest wound. • Seal open chest wound with a dressing and tape on only 3 sides – to allow air to escape.		
Slide 26-28 – Bleeding and wounds	• Always difficult to estimate blood loss. • Difficult to assess especially if on grass or carpet. • As mentioned always check *blood on the floor and for more* for any missed injuries • Examples of different wound types you may see. • All names appear on next click. – Group work – interactive.	Look, listen, ask questions.	Power Point, V1.
Slide 29 – 30 Q&A	Q&A and break 20 minutes	Refreshments	
Slide 31 – Disability assessment	• Check for any potentially **disabling** factors. • Mostly this looking at the patients consciousness. • Taken from **Resus Council UK** Guidelines	Look, listen, ask questions.	Power Point, V1.
Slide 31-38 – Traumatic injuries	• Head injury • Common causes include RTCs (inc. cyclists or persons ejection from vehicle). • Impact to the head, **falls from height and sport related injuries**. • The worst outcomes are associated with penetrating head injuries, non-accidental injury in children under 5's. • Even if there is no clear wound, there may be a traumatic brain injury from the impact of injury. • Head injuries are commonly associated to alcohol (whether falls, fights or bar room projectiles). • **FIRST IMAGE** - Fractured skull and life changing injuries after being attached with a golf club.	Look, listen, ask questions.	Power Point, V1.

	• **SECOND IMAGE** - A vascular part of the body and will bleed a lot. • Head injury can result in a **reduced level of consciousness** and a **change to AVPU.** • **NOF** Symptoms of a NOF after a fall may include: pain and not being able to stand or put weight on the leg. • A patient lying flat may not being able to lift (**lateral leg raise**) move or rotate the leg. • **Often this injury is visible** by noticing one leg appearing shorter than the other and rotated outwards. • **Femur** A **femoral fracture** is a bone fracture that involves the femur. • These are typically sustained in **high-impact trauma**. • Common in RTCs due to large amount of force needed to break the bone. • Often seen in RTCs and pedestrian v cars **due to the height of car bonnet.** **Tib/Fib** These fractures are most common in athletes. • Especially runners or non-athletes who suddenly increase their activity level. • Many factors appear to **contribute to the development of these fractures** including changes in athletic training, specific anatomic features, decreased bone density, and diseases. • More than **20,000 cases per year** in UK. • Caused by high energy trauma. • Especially in horse riders who fall/jump off. • Trauma from a **variety of forces** – a direct blow, axial loading, angular forces, torque, or combination. •		

Slide 39 – 43 – Analgesia	• 0-10 pain scale. "**Zero no pain, 10 worst pain** in the world" • Smiley/Lego heads for use with **paediatric or those who cannot verbally communicate**. • Subjective pain scale describing **mild, moderate and severe** pain. • Abbey Pain Scale is designed for **patients who cannot verbalise or communicate** (eg dementia) • Can be used with any patient to document sign and **descriptors of pain**. • **Consider pain relief** for mild to moderate pain. For severe pain update CCC. • SOCRATES – a good tool to use **if patient is verbal**. • Used to ask patient questions to define a describe site and type of the pain. • Top to toe survey – does just that. • Look for any **missed injuries, deformities or discomfort**. • **Check** pockets for phone and ICE number, their wallet for ID and wrists and neck for medi-alerts. • Carry out a **full set of observations**. • Record Observations and findings on **patient clinical record** (or ePCR on tablet) For administration to adults only. • As per JRCALC 2022 guidelines. • This is NOT you analgesia training package, this is for awareness. • Further training package will be delivered. • Meth-oxy-flur-ane is **sold under the brand name** Penthrox.	Look, listen, ask questions.	Power Point, V1.

	• **Rapid** onset of pain relief is of a **wears off quickly** • Widley used by Australian and New Zealand emergency services since 1970s. • 2020 trials in Wales trials were held and is now within the **scope of practice** of WAST CFR. • A portable, disposable**, single-use inhaler device**, along with a single 3ml brown glass vial. • The charcoal filter on top is to catch any dispensed fumes. • **Not to be used in a confined space** otherwise you will also feel the effects! • Relief **begins 6–8 breaths** and continues for several minutes after stopping. • Lasts approx. 30min • Alternative to Entonox as its smaller, lighter, safer to transport and **not contraindicated with chest injuries.**		
Slide 45 – 49 – Exposure	• Use your trauma shears. • **Expose and examine limbs** (within reason) to uncover wounds, deformity or other injuries. • Be mindful of the patients **dignity in public space** as well as their own home. • Consider the environment you are in – safety, **changing environmental factors**, exits and crowds. • **Exposure** to wind, rain, sun **causing heat and cold injury**. • Taken from **Resus Council UK** Guidelines. **Hypothermia** • Often caused by exposure to **cold weather or immersion** in cold water. • **Icons show** signs and symptoms of hypothermia, with LOC being a later stage. • Normal body **temperature** is around 36.5-37C.	Look, listen, ask questions.	Power Point, V1.

	• When body temperature drops, the heart, nervous system and other organs don't function properly. • Warm the patient and monitor changes in temperature. • British Red Cross are the **experts in crisis and humanitarian relief who promote** the use of a cuppa tea if feasible! • **Left untreated**, hypothermia can lead to complete failure of your heart and respiratory system and eventually to death. **Burns** • **Simply this is d**amage to the layers of skin, usually caused by heat but can also include electrical or chemical burns. • An estimated **250,000** burn injuries result in **175,000** visits to A&E annually. • CFRs will not attend house fires however be aware of **smoke inhalation**. • Signs of this include soot in and around mouth and nostrils including possible airway burns – give O2. Treatment of burns is COOL, COOL, COOL and COOL some more. • Running tepid water. • Rule of 9's – patients palm of hand approx. accounts for 9% of the patients body surface area when working out coverage. • Mersey Burns is a free app to download on iOS and Android. It works out the burn % easily. • The skin is a barrier and so its thermoregulatory function is lost, even on a warm day. • Consider the risk of Hypothermia risk, especially in extensive burns on a small child. • Consider analgesia for extensive burns. • Paediatrics • Trauma is the **leading cause of death** and disability in children <1 yr of age.		

	• In the UK >80% of injuries are caused by **blunt trauma**. • Head injury is present in the majority of cases and accounts for 75% of deaths. • Most seriously injured children have **multiple injuries**, so do a good top-to-toe survey. • Elderly • Also known as **silver trauma.** • Older people are **more vulnerable and likely to falls.** • Most have long-term health condition. • Falls are a common, but often overlooked, cause of injury. • Around **1 in 3 adults over 65** and half of people over 80 will have **at least one fall a year**. • CFR attend a lot of calls but rest assured, most falls do not result in serious injury. • Note previous training with **iStumble**.		
Slide 50 – 52 – Group Discussion	• Group work Either split into groups and discuss / discuss as a cohort. • Next image shows a patient on the floor undergoing basic treatment. • How many aspects of this module can you see going on? • Feedback and describe the significance of each. **Image one** In order of importance… 1. Danger – PPE (Q: WHAT DOES PPE STAND FOR?) 2. Response – AVPU checking response to painful stimuli – squeeze of the trapezius muscle. (Q: AVPU STANDS FOR?) 3. Cat Haem – notice the CAT BLEED, it's literally a puddle of blood on the floor.	Look, listen, ask questions. – Group Discussion	Power Point, V1.

	4. Airway - Checked and suction used to clear the airway. 5. Breathing – Oxygen administered (Q: WHAT IS THE FLOW RATE?) 6. Circulation – Radial pulse check (Q: WHERE ELSE COULD YOU CHECK?) 7. Circulation (AGAIN) – checking blood on the floor and four more – is this a secondary bleed?) 8. Disability - Not MILS but is holding the head, possible checking for head injury or pupil response (Q: WHAT IS PEaRL?) 9. Expose/Env/Exposure – Foil blanket put on. 10. Secondary Survey – Full set of obs (SPO2 probe) (Q: WHAT DOES THE SATS PROBE TELL US?) 11. Record Observations and findings on PCR (Q: WHAT DOES PCR STAND FOR?) **Image two** WHAT WOULD YOU EXPECT AND WHAT WOULD YOU DO FOR THE FOLLOWING: Image 1 – Typical Dad move - trying to light the BBQ in his garden with petrol. Once ignited there was been flashback and he has suffered burns to his right hand, arm and across his chest with minor burns on his neck. Image 2 – Called to a scrap yard, for a man unconscious on the group. When you get there the owner tells you a gas bottle exploded and parts hit his staff member who fell back from the blast. Image 3 – Le n rushing to a meeting with his colleague Sarah. Neither noticed the wet floor sign that cleaner Sue had just put out after mopping the floor. Len slipped, hyper-extended his knee and fell backwards landing on his wrist and hitting his head. There was a		

	brief moment of LOC so Sarah who knows first aid told Len not to move so called 999. Image 4 – 16 year old apprentice fell back from the ladder, falling to the ground. He landed on both feet, didn't bend his knees, twisted his right knee. From this position, he fell back in a lot of pain and landed on brick.		
Slide 44 – Wellbeing checklist – close	✓ Complete wellbeing checklist	Look, listen, ask questions.	Power Point, V1.

Trauma Management

Welcome / Croeso

Community First Responder Initial Training

Trauma

Day Four

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1

Housekeeping

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





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2



Knowledge Check – Day 3

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3

Day 4 - Trauma

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4

- House keeping
- Knowledge Check
- Presentation
- Familiarisation
- Visual/practical scenarios

Introduction

WARNING
The following slides contain graphic images

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Learning Outcomes

By the end of this session the Community First Responder should be able to:

1. Demonstrate management of head and spinal injuries
2. Demonstrate management of chest injuries
3. Demonstrate management of a wound
4. Show the ability to manage catastrophic haemorrhage
5. Demonstrate management of burns

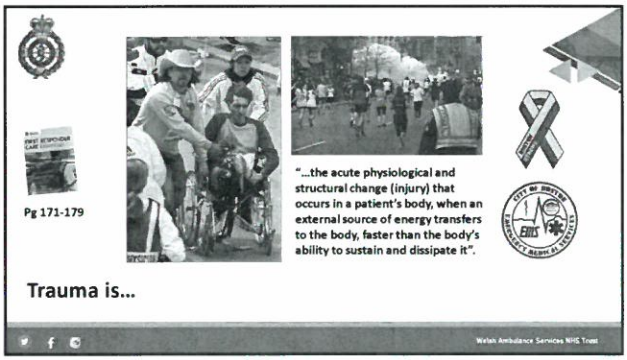


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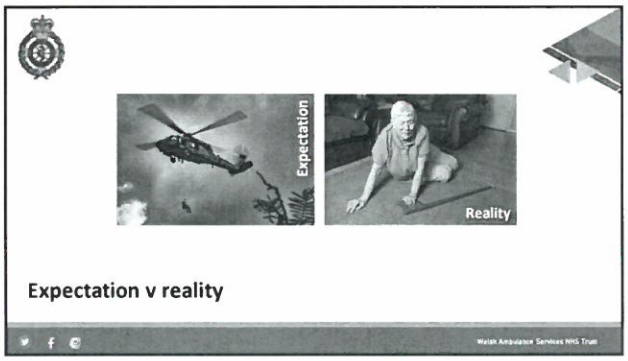
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Preserve Life
Prevent Worsening
Promote Recovery
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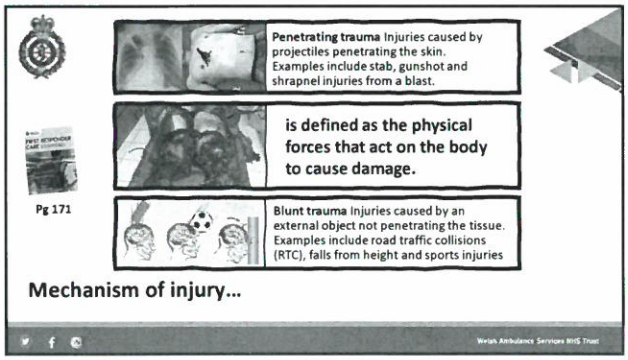
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Pg 171-179
"...the acute physiological and structural change (injury) that occurs in a patient's body, when an external source of energy transfers to the body, faster than the body's ability to sustain and dissipate it".
Trauma is...
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Expectation
Reality
Expectation v reality
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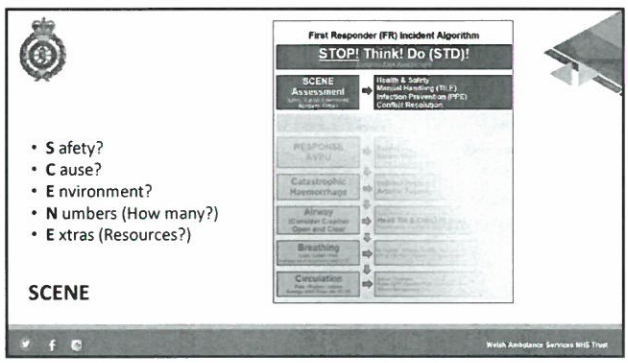
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Penetrating trauma Injuries caused by projectiles penetrating the skin. Examples include stab, gunshot and shrapnel injuries from a blast.
is defined as the physical forces that act on the body to cause damage.
Blunt trauma Injuries caused by an external object not penetrating the tissue. Examples include road traffic collisions (RTC), falls from height and sports injuries
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Mechanism of injury...
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Trauma Kit
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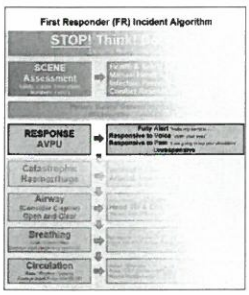
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First Responder (FR) Incident Algorithm
STOP! Think! Do (STD)!
SCENE Assessment
Health & Safety
Manual Handling (THP)
Infection Prevention (PPE)
Conflict Resolution
Catastrophic Haemorrhage
Airway
Breathing
Circulation
• S afety?
• C ause?
• E nvironment?
• N umbers (How many?)
• E xtras (Resources?)
SCENE
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12

- Is the patient **Alert,** awake and responding normally?
- Are they responding to **Verbal** stimuli?
- Do they only respond to **Pain** stimulus?
- Are they clearly **Unresponsive**?
- Is there any new **Confusion?**

Response

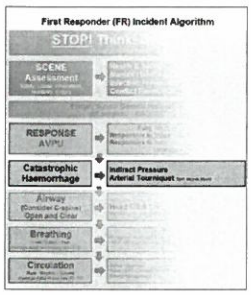


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- Any major bleed or massive haemorrhage you suspect may cause death within a matter of minutes if left untreated.
- All uncontrolled bleeding is eventually Catastrophic.
- Requires immediate intervention.

Cat' Haem'



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Cat' Haem'

Haemostatic Escalator	
Tourniquet	1. If you suspect catastrophic haemorrhage you are likely to ascend the escalator **rapidly**
Limb positioning, traction & splints	2. If a 'Cat Haem' involves a **limb,** a tourniquet should be applied immediately, leaving a gap of at least **5cm** between tourniquet and injury.
Wound packing/haemostatic agents	3. If bleeding is not controlled adequately, A second tourniquet should be applied **above** and **close** to the first and **over a single bone** (Eg. Humerus or Femur).
Direct pressure/elevation of limb	4. If bleeding continues, **pack** and **dress** the wound, then apply firm **direct pressure**

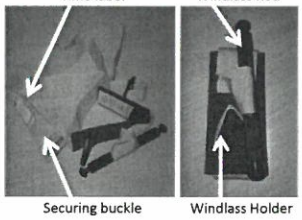
Do **NOT** use a tourniquet in areas such as head, neck or torso. In these areas bleeding should be controlled using wound dressings and firm direct pressure

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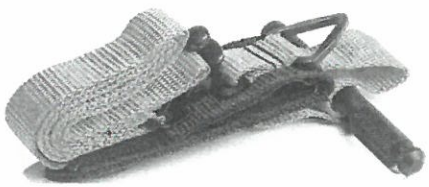
Pg 175-176



C.A.T.

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16



Familiarisation

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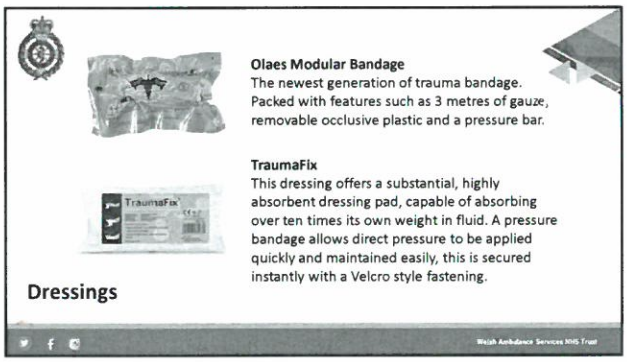
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Haemostatic Escalator	Move up the haemostatic escalator
Tourniquet	• Consider elevation (if practicable) if injury is below knee or elbow
Limb positioning, traction & splints	• Applying a second dressing over the first with direct pressure, if bleeding continues
Wound packing/haemostatic agents	• If bleeding continues, treat as catastrophic haemorrhage event
Direct pressure/elevation of limb	• For limb injuries this means applying a tourniquet above injury

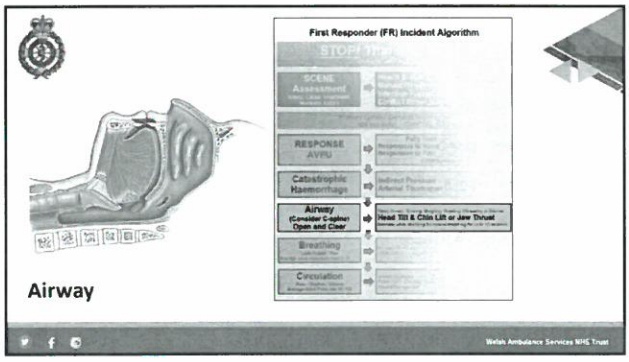
Non-catastrophic haemorrhage

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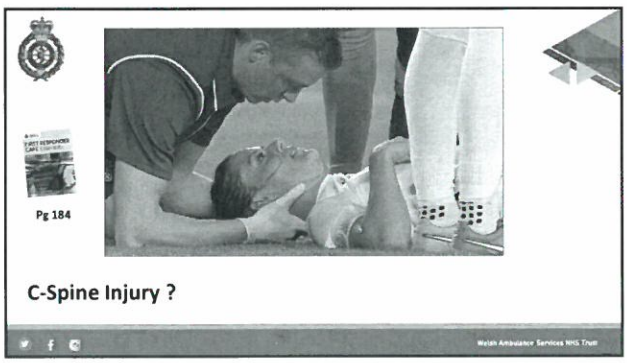
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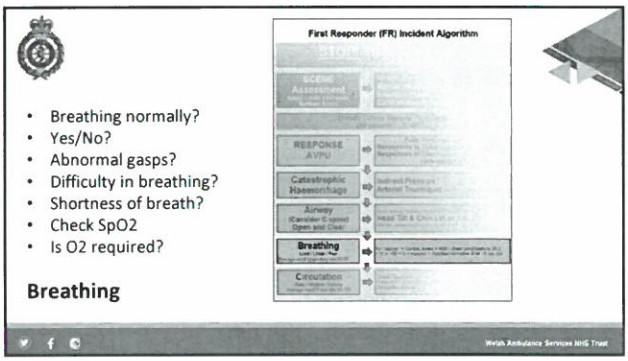
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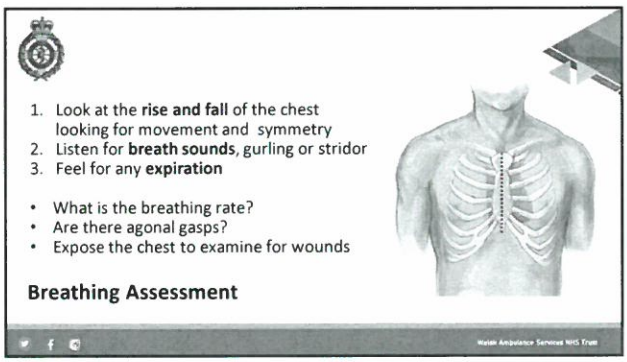
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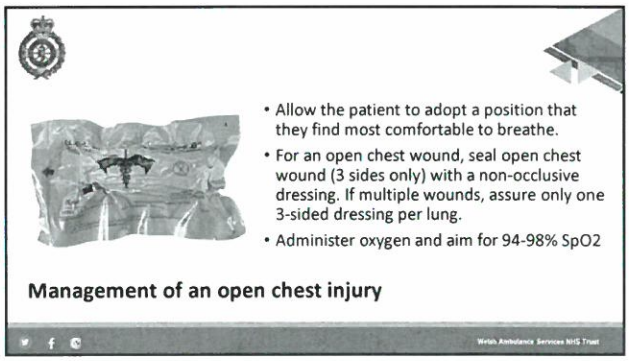
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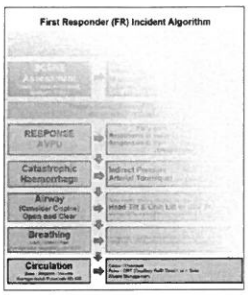
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- Signs of life
- Colour/palour
- Check pulse
- Check CRT if pulse present
- **If a pulse is fast and weak, suspect a leak**
- Reassess treatment of any catastrophic bleeds

Circulation



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Pg 174-177

Arterial bleeding
Spurting bright red blood is potentially life-threatening so plug all the holes.

External bleeding
Visible and should be detected during your primary and/or secondary survey.

Estimating blood loss
Very difficult but remember to check for signs of **shock** which may give an indication of amount of blood lost.

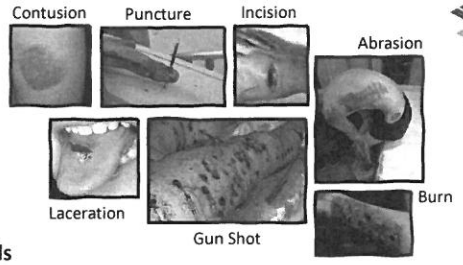
Internal bleeding
Concealed within the body and hard to detect check the chest, abdomen, pelvis and long bones.

Bleeding

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Pg 176-177



Wounds

27



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Break Time



29



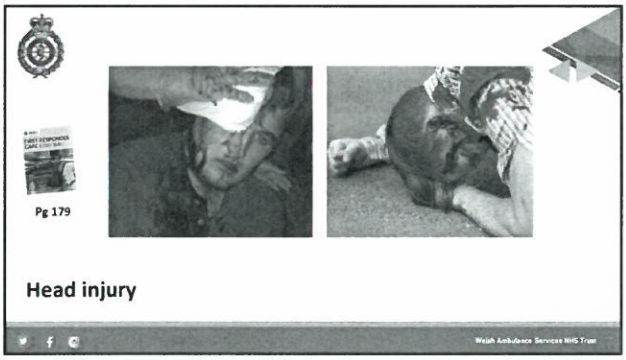
Pg 146

- **AVPU** - a rapid initial assessment of the patient's consciousness level.
- **GCS** - use the Glasgow Coma Scale score for a more indepth consciousness level.
- **PEaRL** - Examine the pupils and their response. Look for their size, equality and reaction to light.
- Look for any sign of a **head injury.**
- **Measure the BM** to exclude/explain any reduced or altered level of consciousness, as well as hypoglycaemia.
- Check for any other potentially **disabling injuries.**

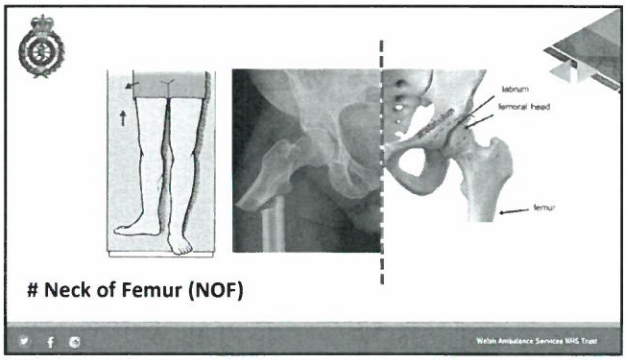
Disability

Resuscitation Council UK

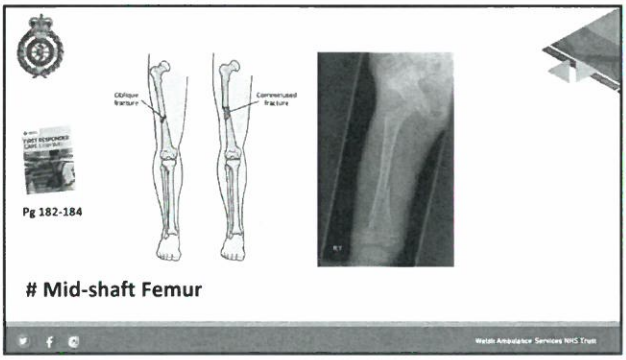
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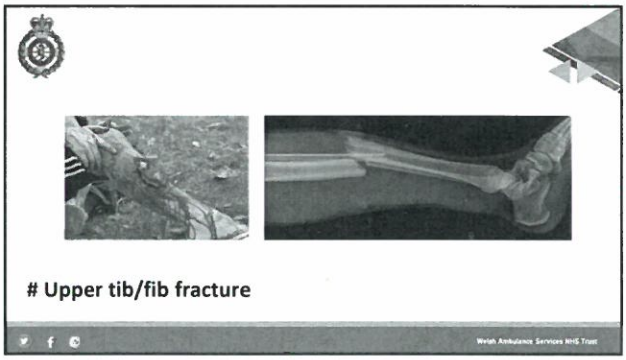
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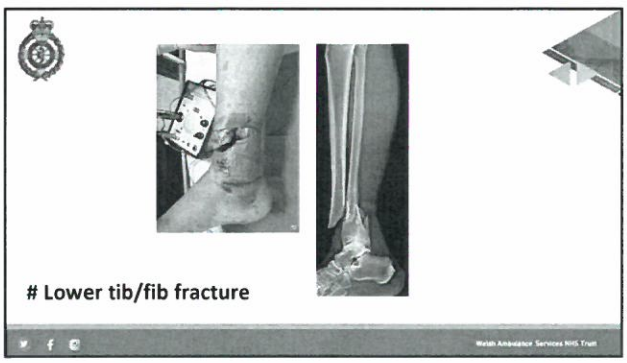
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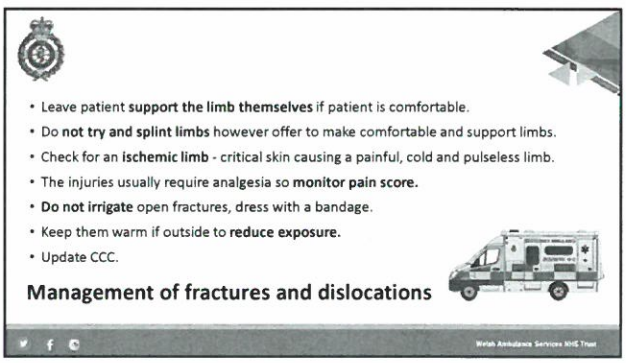
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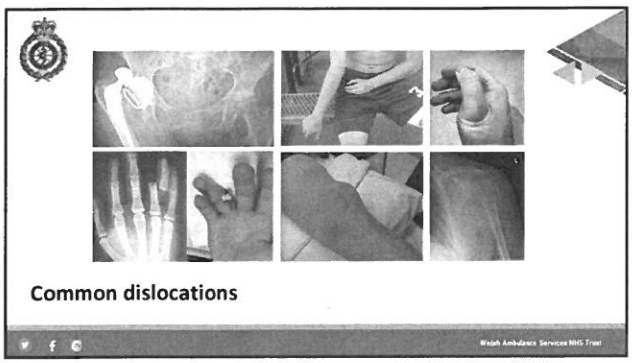
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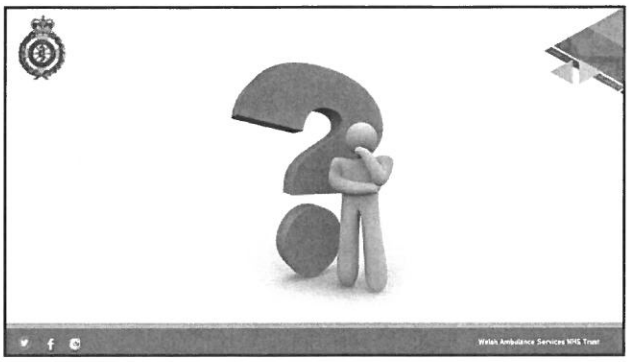
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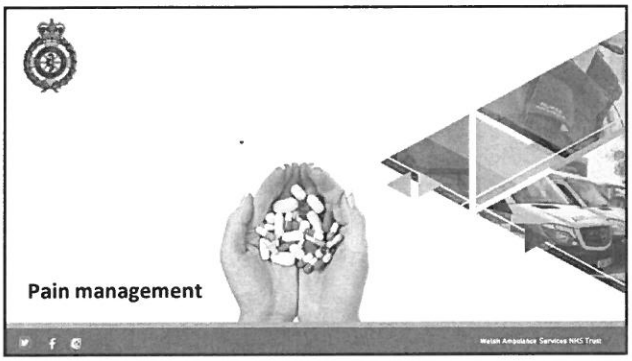
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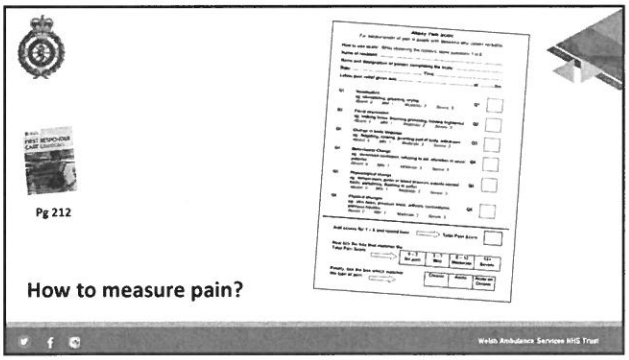
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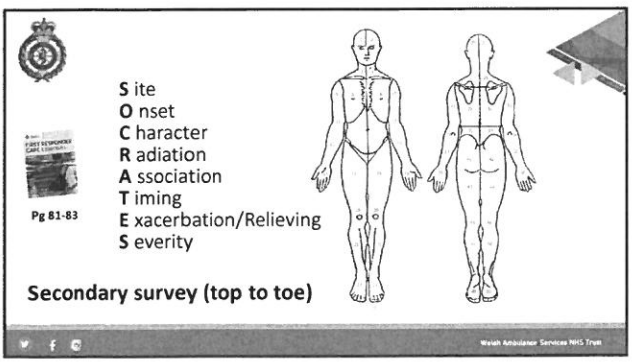
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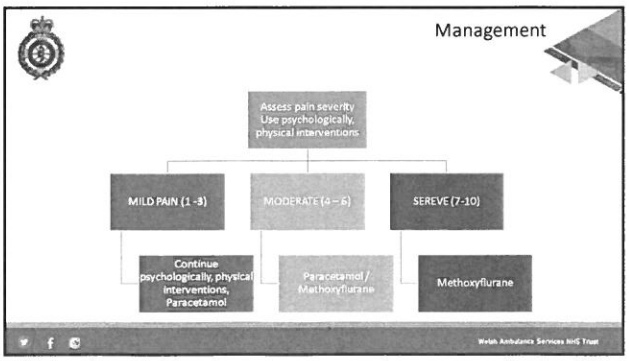
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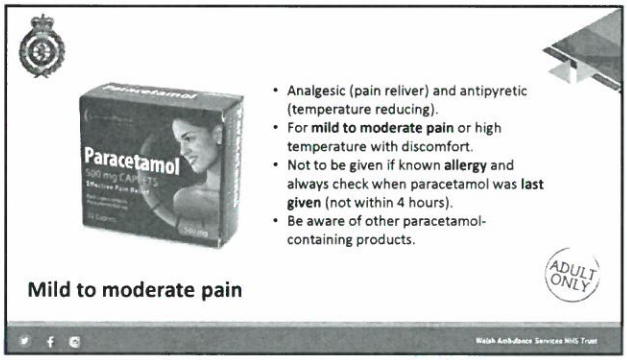
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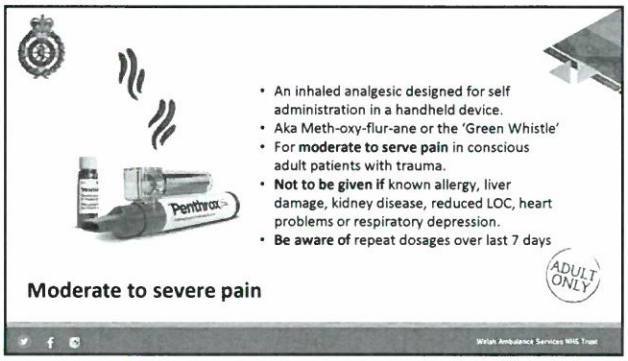
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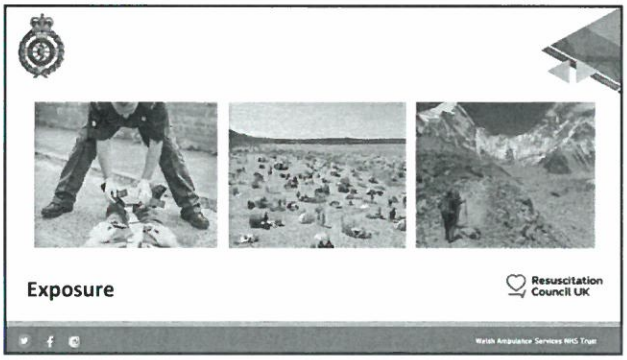
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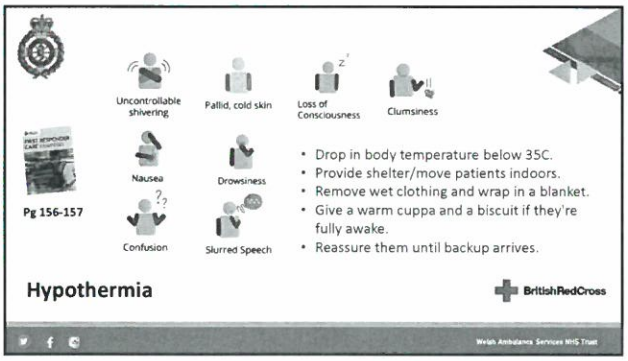
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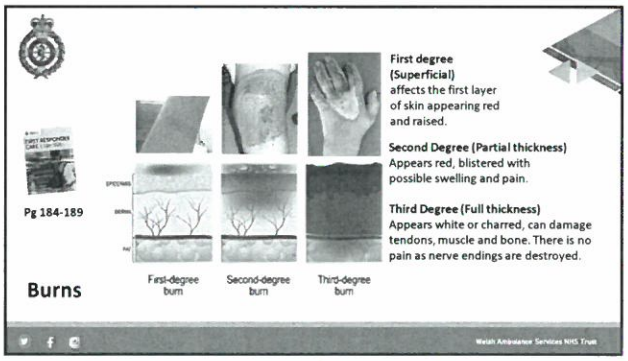
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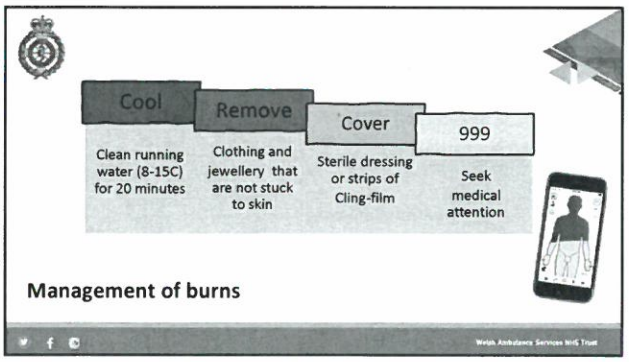
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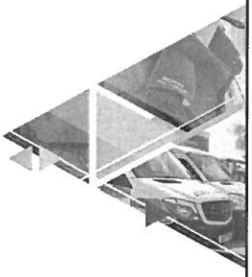
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- Elderly are more vulnerable and likely to falls
- The ageing process leads to increased risk
- Balance problems and muscle weakness
- Vision loss
- Long-term health conditions such as:
  - hypotension (low BP) causing dizziness
  - osteoporosis and arthritis



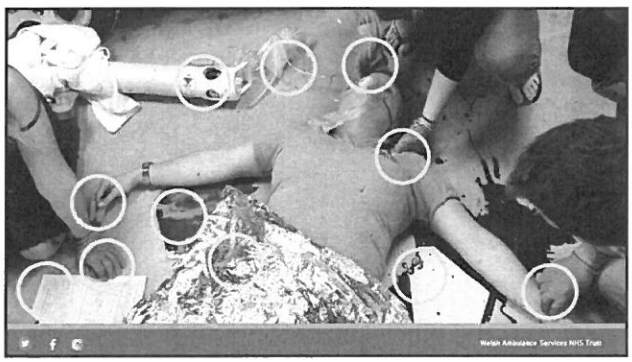
Special Circumstances - Elderly

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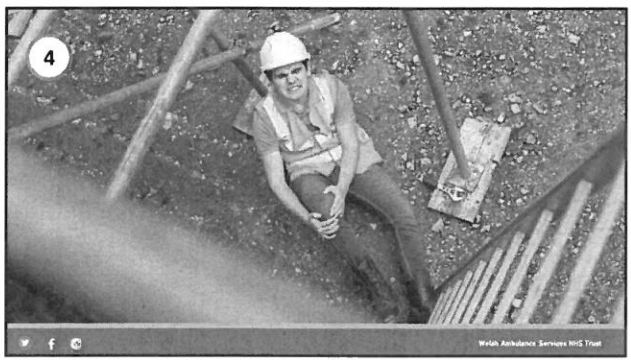


Group discussion

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Group Work

Trauma Scenario



53

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**!



- *Feeling a bit down? Talk to a colleague*
- *Finding things difficult? Talk to the management team*
- *Need Professional advice? Call Wellbeing Support Service 0800 321 4700*
- *Don't know what to do? Call the Samaritans*

www.wastiketotalking.com

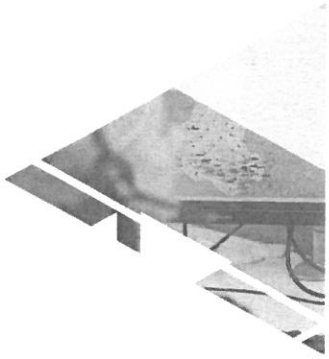
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Thank You



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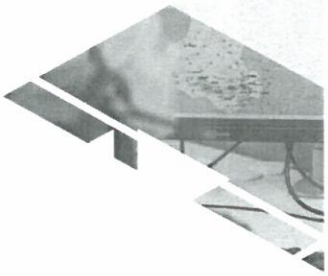


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Day 4 – Trauma

Time	Session	Activity	Equipment
0845-0900	**Welcome and refreshments**	Welcome	Refreshments Name labels & pens Teas and coffees Milk
0900-0915	**Introduction** (2 slides)	Introductions Housekeeping Learning outcomes Pre-learning knowledge check test	Note pads and pens Desks Chairs Paperwork- signoffs Knowledge checks
0915-0935	**Introduction to trauma** (5 slides)	What is trauma, MOI and traumatic injuries?	Presentation Projector & HDMI Extension cable Laptop Chairs
0935-0945	**Brief table-top demonstration** (1 slide)	Revise and refresh what may be needed for DRCABCDE (adjuncts, obs, trauma kit).	Response bags
0945-1015	**CFR Incident Algorithm with demo** (15 slides)	Take through stages of the DRCABCDE approach to trauma: • Cat Haem with familiarisation • Airway with C-Spine considerations • Breathing assessment and open chest injury • Bleeding and wounds	Tourniquets Olaes bandage TraumaFix
1015-1025	**Disability including head injury** (2 slides)	How to assess a patient's consciousness level. Including GCS and PEaRL	Laptop Projector Projector screen Algorithm handouts GCS laminate Pen torch
1025-1035	**Tea break**	Students can as questions over a refreshment	Teas and coffees Milk Biscuits



1035-1045	Secondary survey **(5 slides)**	**Discuss the importance of a top-to-toe survey.** **Talk through SOCRATES.**	**Laptop** **Projector** **Projector screen** **Algorithm handouts**
1045-1050	**Management of fractures** (2 slides)	Examples of potential fractures locations and dislocations	Presentation slides Laptop Projector Projector screen
1050-1105	**Pain management** (4 slides)	How to measure and document pain. What CFR analgesia is available?	Laminates of pain score Penthrox training device Paracetamol box
1105-1115	**Environment including heat and cold injuries** (4 slides)	Discuss how to exposure and examine a patient. Awareness of environment and exposure Hypothermia Burns and their management	Blanket Blizzard blanket Foil blanket
1115-1120	**Special circumstances – Paediatrics/Elderly** (1 slide)	How paediatric trauma patients differ	Presentation slides Laptop Projector Projector screen
1120-1125	**Group discussion** (1 slide)	Spot the treatment and processes in order of priority (eg DRCABCDE) on the image.	Presentation slides Laptop Projector Projector screen Notepad and pen
1125-1130	**Tea break**	Students can as questions over a refreshment	Teas and coffees Milk Biscuits
1130-1155	**Group work** (4 slides)	X4 images Describe your approach to your scenario. Group can discuss how they would manage and treat this patient.	Presentation slides Laptop Projector Projector screen Algorithm handouts
1150-1230	**Practical scenario**	Opportunity for candidates to practice their skills of identifying and treating cat haem and trauma related injuries.	Response bags x 4 Volunteer role player or training mannequins/limb CasSim (optional

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Trainers Notes for the Module 7 – Trauma

These trainer notes are to accompany a lesson plan and presentation slides, as part of the WAST community First Responder (CFR) 5-day course commencing in January 2023.

Content is in line with current JRCALC 2022 Guidelines and Resuscitation Guidelines with reference taken from Pre-Hospital Trauma Life Support (9th Edition) and the First Responder Clinical Skills publication, which is classed as core learning material for the CFR scope of practice.

Viewers of the presentation should be prewarned of the graphic images used in the interest of training and education. Images used are staged or from battlefield or terrorist scenarios. This is to prepare them for potential real-life incidents they may be faced with.

Instructor Knowledge

This module is to be delivered by WAST CFR Trainers with an understanding of the CFR scope of practice and learning objectives. It can be delivered by other EMTs or Paramedics when assisting WAST CFR Trainers when under direct observation or instruction from WAST CFR Trainers, depending on the EMT/Paramedics experience and knowledge of the subject and CFR scheme.

Equipment Required

- Audio and visual equipment is required for the presentation. Speakers are optional, dependent on videos. This should include projector, extension cable, laptop and access to presentation slides via Teams/OneDrive or directly from laptop or USB.
- Responder bags are required for the familiarisation, practise and scenario phases. This is for access to airway management equipment, oxygen therapy and major haemorrhage control supplies.
- Casualty Simulation consumables are encouraged to provide a more realistic scenario. However dependent on time and location, this is not necessary.
- Copies of a publications such as First Responder Care Essentials may be required for further reading.

Module Structure

- **Presentation** – The classroom module is delivered mostly via presentation slides, with a number of opportunities for practical familiarisation with both individual or group working. Scenarios allow for confirmation of understanding and can be carried out outside of the classroom or venue (weather permitting) to suit the trainer and audience. Drawing on personal injury or previous experience is welcome via discussion topics.
- **Practical Session** – During the presentation, there are opportunities to get hands on with equipment within the responder bag and learn how they should be used. Following explanation and application, the trainer can confirm correct use and placement of CATs as well as bandages. These will be used in the correct sequence of treatment (i.e. DRCABCDE) and will demonstrate their understanding of the subject.
- **Multiple Choice Questionnaire (MCQ)** – To add a layer of complexity and to confirm candidate learning in another format, a MCQ is available. This is only another tool to confirm

learning and not a pass or fail. This is dependent on timings and will differ from the individual knowledge check.

- **Visual Scenario** – This can be carried out as an individual effort, team exercise or group discussion. Time is allocated to create a plan towards assessment, management and treatment of what scenario the images show. This can be carried out as small group activity, as individual or together as a cohort becoming a group discussion.
- **Practical Scenario** – To conclude the module and to confirm understanding of the subject, the trainer can deliver a trauma related scenario. This can be done in a group, small teams or as an individual, depending on allocation, resources, live patients and location. Casualty simulation (CasSim) items are encouraged to provide a more realistic scenario for candidates however a role play patient from the cohort will suffice. By adopting a final confirmation scenario, this will allow confirmation of practical ability to follow the pre-taught teaching of carrying out a primary and secondary survey of a trauma patient. This would include clinical skills such as airway management, treatment options, communication and teamwork.

Key Learning Objectives (KLOs) – these are listed below

1. Understand management of head and spinal injuries.
2. Understand management of chest injuries.
3. Understand management of abdominal injuries
4. Understand wound management.
5. Be able to manage wounds
6. Understand management of haemorrhage
7. Understand management of burns

7.1 Introduction

- This will enforce current WAST values and standards, which should be reflected in the learning environment.
- A brief introduction is given to the day including delivery from presentation slides with hands-on opportunities.
- Overall assessment is based on visual scenarios requiring individual or team feedback leading to a discussion to confirm understanding of subject.
- Practical scenario will confirm basic knowledge and understanding of patient assessment, which has been taught earlier in the course focussing on correct identification of a catastrophic haemorrhage along with further treatment and aftercare.
- A warning prior to seeing any graphic images is advised, especially due to the nature of the module.
- References to further reading given.
- Opportunity to download free pre-hospital applications
- *Definition of trauma is...* accompanied by image from Boston bombing in 2013. Will return to an image of the same patient, prior to evacuation to Boston EMS, later in presentation.

7.2 Assessment of trauma

This follows the same approach as any patient, as previously taught earlier in the course. This approach is adopted all over the world by emergency and pre-hospital care providers at all clinical grades. *You are no different so be sure to follow this for any assessment.*

- Emphasis should be put on *'SCENE'* pneumonic use, including any danger to casualty, responder or public. Emphasis should be put on verbalising this throughout any assessment.
- Other than Cat Haem - airway takes priority. Life over limb. The *importance of airway management in trauma*, with consideration for any cervical spine injuries associated with falls from height, sport, high impact collisions and from conflict. Combat-related spinal injuries have been reported since the Egyptian era (REF).
- Approximately 8.7% of all new cases of spinal injuries in the US are related to sports activities (REF).
- Responsiveness level including AVPU(C) and reference given to GCS.
- Breathing Assessment
- Circulation Emphasis on why stopping any major bleeding should take president over circulation (compressions).
- *"Blood on the floor and 4 more"* - explain the 4 main regions to check for signs of internal bruising with be covered later.

7.3 Mechanism of injury

- Defined as "the physical forces that act on the body to cause damage." (REF REQUIRED).
- How the body tolerates this external energy *depends on: tissues involved; age and health of the person; duration of the energy being transferred*.
- Graphic image used showing US Army surgeon during the 1991 Gulf War, treating a double amputation patient
- Ask *how this could have been caused?* More than likely an improvised explosive device (IED) intended to do such damage.
- Discuss *what treatment has been applied?* Notice the improvised tourniquet. Tourniquet used today not developed until approx. 2010.
- Blunt trauma is caused by external object which does not penetrate the skin. Examples of mechanisms that cause blunt trauma can include road traffic collision (RTC) - vehicle v pedestrian, a fall from height, sports injuries and blast injury (although can also cause penetration trauma)
- Penetrating trauma are injuries caused by projectiles which penetrate the skin. Examples of this type of trauma can include stab, gunshot and blast injuries (shrapnel).
- *Forces of impact depending on the method of travel and the motion of which the human body is forced or sent.* Impact can travel through the skeleton. Image shows RTC sudden force on occupant first being thrown forward causing impact on steering wheel or windscreen, then head injury from being thrown back. Always look for the bullseye on the wind screen. Furthermore – get a history or understanding of what happened. Eg spinal injury caused from jumping onto a hard surface without bending legs to take impact letting the force travel up.

7.4 Anatomy and Physiology

- *Very much like a car mechanic, you need understand what's inside before you can understand what the problem is. Imagine trying to understand a problem without opening up the bonnet of your car!*

Next 12 slides should enforce your previous understanding of the human body and its systems.

- The skin is the largest organ in the body. Average surface area of $2m^2$ - weighing around 5 kg. Two main layers include the *dermis & epidermis*. Wounds vary massively in severity & *basic treatment is key*.
- Discuss main regions of the body. Good for describing where injuries are/were, including stab wounds, bruising etc. *"My patient has multiple stab wounds to the abdominal and pelvic regions!".*
- Skeletal system. No requirement to discuss the make up of bone or degenerate bone diseases here as is mentioned in special circumstances. Identify *long bones* and flat bones on the diagram. Also highlight the *axial (or central) skeleton (highlighted in blue) and the appendicular skeleton*. Bones get old, they can bend, they can break but with enough force they can shatter. *A break or a fracture is written as # on patient documentation.*
- Neck of Femur *(aka the NOF or patient has a NOF).* Describe anatomy of image. Notice the shortening and rotation caused.
- Mid shaft of femur
- X2 images showing an upper then a lower tib/fib fracture. Discomfort and pain associated from any break however open fractures have a higher risk of infection. Also longer bones can cause internal bleeding from surrounding blood vessels.
- Blood vessels - Remember from GCSE biology... the circulatory system comprises of arteries, veins and capillaries. Explain in brief what each one is made of and what it carries.
- Bleeding – encourage candidates to explain each picture as verbal confirmation they can recognise each type of bleeding.
- Wounds - encourage candidates to explain what may have caused them. (REF First Responder, Care Essentials, Chapter 16, p. 176 & 177).
- Shock – is defined as... *"a life-threatening manifestation of circulatory failure. Circulatory shock leads to cellular and tissue hypoxia resulting in cellular death and dysfunction of vital organs."* (REF) inevitably causing loss of consciousness, comma then death.
- The main recognisable symptom of shock from Trauma is blood loss. The recognisable observation of blood loss is low blood pressure. Other symptoms include rapid, shallow breathing; cold, clammy skin; rapid, weak pulse; dizziness, fainting, or weakness. *This is all caused by the body trying to perfuse tissues more – pumping blood faster (what's left of it) and trying to get more oxygen in quickly.*

7.5 Treatment

- *The Big 'C'* - known as major bleeding, catastrophic bleeding, major haemorrhage or in the US massive haemorrhage. It all means the same thing. Usually, an arterial bleed that if left untreated could cause unconsciousness and death within minutes.
- All uncontrolled bleeding is eventually Catastrophic. *Always remember the basics - the 3 P's of First Aid, most likely taught on every first aid course ever delivered...* preserve Life, prevent worsening, promote recover.
- Let's return to our friend from earlier - the patient at the Boston bombings (GRAPHIC WARNING). *As you can see...* (describe image).
- Bleeding assessment - Internal bleeding: concealed within the body cavities or along long bones. These are hard to detect at an early stage. Bruising is a sign that happens over hours.

External bleeding is visible and should be detected instantly if catastrophic but during your primary and/or secondary survey if not.

- As covered earlier - arterial bleed is higher pressure, pulsing/spurting and bright red in colour (Why?). A Venous bleed is of lower pressure, constant flow and darker red (Why?) Capillary bleed is very low pressure, blood oozes out. Estimating blood loss is very difficult, remember to check for signs of shock which may give an indication of blood loss. Remember, *"If a pulse is fast and weak, suspect a leak!"*
- Management of Cat Haem – follow algorithm.
- Haemorrhage control methods – describe each
- **DEMO** - Tourniquet aka Combat Application Tourniquet (CAT). A tried and tested method that has been around for centuries but only since the Afghanistan conflict that it was *developed by the military and made it's way into civilian pre-hospital care, shark bite kits in Australia and forestry and tree surgery kits.*
- Improvisation methods – reference to direct and indirect pressure (pressure points)
- Management of non-cat haem. Such as...? Basic treatment methods to follow (REF *Further reading: First Responder, Care Essentials Chapter 16, p174 & 175).*
- **DEMO** - Trauma Fix and Olaes Modular bandage both in the CFR kit.

7.6 Injuries

- **Head Injury** - Manage CABCDE. Consider c-spine control with airway management and apply jaw thrust. *From a head injury, a patient could suffer a traumatic brain injury (TBI) include Road Traffic Collisions (RTC), direct blow to the head, fall from height and sporting activities.*
- CFRs will not be dispatched to RTCs however you may happen across one or be sent to a patient *'not-breathing on the pavement' or 'cardiac arrest on sports field'. Both could be associated to a TBI.*
- Worst outcomes for head injury are associated with penetrating head injuries, non-accidental injury in children under 5, pedestrians and pedal cyclists (due to being thrown and surrounded by hard surfaces) and similarly ejection from a vehicle.
- *What are the most common signs and symptoms of a head injury?* (see slide)

- **Spinal Injury –** (REF First Responder, Care Essentials, Chapter 16, p.180) More specifically spinal cord injuries (SCI) are rare, with around 1000 new cases per year. *In adult major trauma, 10% will have a spinal fracture/dislocation*, but less than 2% will have a SCI. Falls are the most common cause of SCI.
- *What are the most common risk factors?* These include being male due to higher risk taking, being under 45 years of age, having a LOC, accompanying chest injury from a range of dangerous mechanism including falling greater than 2m, sports injury and RTCs [REF].
- *Signs & Symptoms of a spinal injury may include...?*
- The spinal column explained with levels of paralysis, which could be *permanent or temporary depending on the injury, any intervention and rehabilitation.*
- Managing a Spinal Injury – Approach in the usual DRCABCDE approach. If complaining of pain, weakness, or numbness following trauma to the head of neck along with any other signs & symptoms previously mentioned, *apply manual in-line stabilisation* (MILS). *Apply a jaw thrust if airway becomes compromised.* Keep the patient as warm as possible as they may not be able to shiver. This is discussed further in 'The Big E'.
- *The more hands the better with a potential spinal injury so stay around to assist the crew.*

- **Chest Injuries** – Account for 25-50% of all trauma. A contributing factor to half of the deaths through injury. Major causes are RTCs, industrial accidents and sporting injuries.
- *The most common problem associated with severe thoracic injury is hypoxia – Why?* Due to the combination of bones, muscles and organs easily damaged in such a large surface area. These are vital for effective respiration and oxygenation.
- **Pneumothorax** - This can be a complete lung collapse or a collapse of only a portion of the lung. Can be caused by blunt or penetrating trauma to the chest wall. This can also be caused by certain medical procedures, or damage from underlying lung disease. It may also occur from prolonged coughing or for no obvious reason but it doesn't help to be tall! *Three types of Pneumothoraxes are Closed, Open and Tension* (Explain each via diagram).
- *Signs and Symptoms include* pleuritic chest pain (sharp pain, increased with breathing) air hunger, signs of respiratory distress or failure, rapid breathing (Tachypnoea), rapid pulse (tachycardia), unexplained reduced or falling oxygen saturation levels, agitation, tracheal deviation *(NB not in that order)*
- **Tension Pneumothorax** – This is where the pneumothorax becomes a life-threatening condition where *the continuous entrance and entrapment of air into the pleural space or cavity compressing the lungs and heart.*
- ***Haemothorax*** - Can be caused by blunt or penetrating trauma to the chest wall, but blood forms up inbetween the lung and the chest wall instead of air. *The continuous build-up of blood* in the pleural space or cavity compresses the lungs and heart.
- ***Pneumothorax v Haemothorax –*** *Sounds complicated but does anyone know what this is?* Just a combination of air and blood.
- **Flail Chest** – An acute chest injury caused by direct trauma to the ribcage. It's a life-threatening medical condition where the *injured segment of the rib cage breaks becomes detached from the rest of the chest wall. Can cause a Pneumothorax, Haemothorax or both.*
- **Treatment of Chest Wall Injuries** – Assure to allow the patient to adopt a position that they find most comfortable to breathe. *Seal open chest wound* (taped on only on 3 sides to act as a valve) with a non-occlusive dressing. If multiple wounds, *assure only one 3-sided dressing per lung.*
- **Fractures and dislocations** - A fracture is a break or multiple breaks in a bone. When a fractured bone breaks through the skin it becomes an open fracture. *Can anyone name any other types of fractures? Here are the definitions of the 6 other types of fractures.* Both are extremely painful. Reassure the patient. Keep them comfortable. Give analgesia if you are allowed or under advice from a higher clinical grade. Assure they get oxygen if significant trauma. Keep warm.
- Splinting is a technique that can be adopted to relieve pain and avoid further injury (REF).

- **Burns** - A burn is an injury caused by energy transfer to the bodies tissues, causing tissue damage (necrosis) and the associated inflammatory reaction. *Burn categories include: Chemical; Cold; Electrical; Friction; Radiation; Thermal.*
- It is estimated there are 250,000 burn injuries resulting in 175,000 visits to the A&Es annually in the UK. Burns most commonly occur in the home. *Causes include hot drinks, boiling kettles, commonly when spilt – often involving children. Petrol ignition – often involving adults. Bathing and radiators – often involving the elderly.*

- **Total burnt surface area (TBSA)** – Explain the rule of 9's principle. Also utilise the Mersey Burns app, previously downloaded by candidates. A first degree burn shows reddening and swelling of the skin. *Second degree burn or partial thickness* appears red, blistered with possible swelling and pain. *Third Degree burn or full thickness* appears white or charred, can damage tendons, muscle and bone. Not as server pain as imagined as nerve endings are destroyed.
- **Types of Burns** – demonstrate the damage and thickness of the burn on the tissue from diagram.
- **Burns Pneumonic** – Used to document or *explain burns* (as diagram shows)
- *Time critical features include* any major CABCDE problems, burns to the airway, history of hot air or gas inhalation, respiratory distress, evidence of burns encircling the neck, torso or limb, significant facial burns, burns more than 15% in adults or 10% in children. Lastly burns in the presence of other major injuries.
- Urgently update CCC if you identify any of these clinical features.
- **Smoke inhalation** – is responsible for 80-90% of fire related fatalities. *Signs of inhalation injury include:* Burns to the face, neck or upper torso. Singed nasal hair. Soot in sputum or oropharynx. Dyspnoea, hoarseness, cough or stridor. Cyanosis or altered level of consciousness. *Remember Carbon Monoxide* poisoning would show false oxygen saturation readings (usually 100% Sp02).
- **Management** - *Firstly stop the burning process. Cool. Avoid risk of Hypothermia.*

7.7 The Big "E"

- **Expose** – Why is it imperative to conduct a thorough secondary survey? What would you be looking for?
- **Environment** – How may the environment affect the patients condition?
- **Exposure** – What could you do to protect the patients condition from deteriorating, especially if outside.
- **Hypothermia** – Causes and signs to look out for in a patient exposed to the cold.
- During hypothermia the duration of hypoxia is a critical factor in determining the victim's outcome. Therefore, *oxygenation, ventilation and perfusion should be restored as rapidly* as possible. Immediate resuscitation at the scene is essential for survival and neurological recovery after a drowning or submersion which would cause hypothermia.
- **Lethal Triad of Polytrauma** – This is a medical term describing the *combination of hypothermia, build up of toxins and acid in the body, and the bloods ability to clot* (clotting factor). This combination is commonly seen in patients who have sustained severe traumatic injuries.
- **Heat injuries** – the difference between heat exhaustion and heat stroke.

7.8 Trauma kit

- What kit and equipment could we use for any trauma patient. What do we have at our disposal?

Take simple steps.

- **Management & Treatment of a trauma patient** - What can you see being done for this patient, that is part of the treatment process, all included in the CFR scope of practice.

7.9 Understanding Pain

- **Pain** - *How can we measure or monitor pain?* Wong-Baker score. Smiley faces score. Pain Score 0-10. Facial expressions, activity, guarding, groaning as well as many other non-verbal descriptors and body language.
- **Paracetamol –** Easily bought over the counter and taken by most people without any problems. Very few side effects in the correct dosage and interval. For adults, it can be taken to treat aches and pains as well as being an anti-pyrexic. Can be the start of an analgesic regime for mild to moderate pain, stepping up if needed.
- **Penthrox –** Brand name for the drug Meth-oxy-flu-rane. Self-administered through a green-whistle-like device, it's an inhaled medication primarily used to reduce pain following trauma. Onset of pain relief is rapid and of a short duration. Now part of the CFR analgesic regime for moderate pain relief. Only recommended in those who have a normal level of consciousness and stable blood pressure and heart rate. Further online-training package required.

- 7.10 Special Circumstances – Elderly
- Paediatrics
- Traumatic Arrest

Assessment

MCQ/Knowledge Check

Visual Scenario

The can be delivered as an exercise where time is allocated to create an assessment, management and treatment plan for each scenario and patient. This can be carried out as small group activity, as individual or together as a cohort becoming a group discussion.

"You are on shift with a CFR colleague and are called to this scenario. What would you look out for, what might you find and what would you do to treat this patient?

Scene 1 - Burns victim – Pouring petrol on a BBQ with flashback

Scene 2 - Fragmentation victim – Explosion from gas canister. Shrapnel and blast injuries.

Scene 3 - Wet floor victim – Fall backwards onto hard service, head injury reduced GCS.

Scene 4 - Building Site – Fall from ladder (own height)

Time allocated will varied on how in depth the trainers wants feedback to be. Findings and clinical observations can be created to suit the groups understanding of the subject by the trainer. Correct answers will follow the DRCABCDE approach with a secondary survey explanation of what treatment will be given. The group should conclude with an ATMIST handover.

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Final Scenario(s)

To conclude the module and to confirm understanding of the subject, the trainer can deliver a trauma related scenario. This can be done in a group, small teams or as an individual, depending on allocation, resources, live patients and location.

CasSim items are encouraged to provide a more realistic scenario for candidates.

Candidates will be reminded simply to follow the DRCABCDE approach. There is no pass or fail to this scenario other than treating any catastrophic haemorrage found, provide high flow oxygen, dress wounds, keep warm and provide a handover.

It is advised the trainer/assistant to wear a TRAINER high visibility jacket for assurance to passers by that this is a scenario. The trainer is also advised to alert any staff in the vicinity to avoid unnecessary panic or 999 calls.







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Community First Responder Initial Training
Day Three 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:	**Introduction:** (Slide 1 – 3)
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: • Demonstrate understanding several medical emergencies. • Be able identify several medical emergencies from presenting signs and symptoms. • Demonstrate the effective management of several medical emergencies.	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: • Demonstrate understanding several medical emergencies. • Be able identify several medical emergencies from presenting signs and symptoms. • Demonstrate the effective management of several medical emergencies.	Look, listen, ask questions, Demonstrate.	Power Point, V1.
Slide 6 - 11 – Sepsis	Explain the signs, symptoms and management of Sepsis condition It's worth elaborating that often causes are seemingly fairly innocuous; a chest infection or UTI that isn't treated can ultimately lead to a dysregulated immune response that can ultimately result in poor oxygen perfusion of organs and organ failure. Establishing a history of primary infection or source of infection is fundamental to effective assessment in Sepsis patients.	Look, listen, ask questions , Demonstrate	Power Point, V1.

	In terms of what's going on the body physiologically, there's excessive immune response "Cytokine" Storm (too much chemical messaging of immune cells)immune cells get recruited all over the body. 2 significant changes 1) histamine causes the gaps/junctions between blood vessels to dilate and we lose plasma and RBCs from the blood into tissue space – this drops blood pressure. Meaning blood and therefore oxygen can't get to the organs and around the whole body as much as is required. In septic shock we also get clots (DIC) forming all over the vessels further compromising the flow of what is already reduced blood. Organs start to fail because lack of blood = lack of O2. **Task one –** Slide 7 - Obs practice Task. 20 – 30 mins for CFRs to use the enhanced skills bag and take a set of obs on a peer. They should use these obs to calculate a NEWS score. CFRs should swap roles so both have an attempt. In theory all CFRs should score a NEWS of 0. **Task Two –** Slide 9 - NEWS Task – using the NEWS laminate from the responder bag, CFRs to attempt to calculate NEWS score for the following 3 exemplar patients. This slide is animated. Start with just the obs. Then once they have calculated scores pop the history up and discuss is there cause for concern/potential source of infection. NEWS patient A – Score 9; Has had abdominal surgery in the previous week (Resp rate 22 (+2); Spo2 94% (+1); Pulse rate 96 (+1) Voice on AVPU (+3), Temp 39.1 (+2) = total score of 9 NEWS patient B – Score 0; Generally unwell patient; None of the obs values score any NEWS points.		

	NEWS patient C – Score 7; patient has arthritis; complaining of joint paint (Resp rate 21 (+2); SPO2 92 (+2); Temp 36.0 (+1); BP 103 (+1); Temp 36(+1) = total score of 7. Additionally it's important to highlight if the obs taken are with O2 therapy or not. If O2 therapy is administered at the time obs are taken then the NEWS total will be 2 points higher. Then give the score answers		
Slide 12-23– Anaphylaxis	Explain the signs, symptoms and management of Anaphylaxis condition Anaphylaxis can present in a number of combinations of Airway, Breathing, Circulatory, Skin or Mucosal changes. It can present with some or all of these issues. Any instance of rapid onset of issues with nay of these anaphylaxis should be suspected. Present from slides. Knowing the types are really important; CFRs should be airing on the side of caution with suspected Anaphylaxis. They can easily be caught out by Biphasic where the patient seems to improve but will then deteriorate. Idiopathic where there is no underlying cause the CFRs need to not take for granted. Just because there is no identifiable trigger, it doesn't mean the patient isn't having an anaphylactic reaction. There is potential for a biphasic idiopathic reaction which may seem resolved. Protracted, don't underestimate that symptoms may worsen over coming days		Power Point, V1.

	and the potential impact this might have. Essentially don't get caught out. Use CSD and get guidance.		
Slide 25 – 33 – Diabetes.	Explain the signs, symptoms and management of Diabetes condition Present 2 videos are a great introduction to the both Type 1 and Type 2 and the differences. **Task one -** BM Practice Stress here that BMs should only be carried on: 1. Known diabetics 2. Those with new confusion or disorientation 3. Unconscious *** Unless specifically asked for by a clinician either CSD or road medic.** Work with peers can use test fluid and puncture a banana. Highlight the Martin video for further guidance. **Task Two -** Split the group into 2; one group will research the causes, signs and symptoms of Hypoglycemia and the other the causes, signs and symptoms of Hyperglycaemia. Allocate 10-15 mins to produce a poster on flip chart paper to present back to the other half of the group. Really encourage presenting to the rest of the class and not you as the trainer. Present back. Take questions and tighten up on any inaccuracies or omissions. Hypo signs and symptoms	Look, listen, ask questions Demonstration.	Power Point, V1.

	Autonomic – Sweating, trembling/shaking, heart palpitations or pounding, hunger General – Headache, nausea Neuro – poor coordination, confusion, speech difficulty, drowsiness, uncharacteristic behaviour, aggression, unconsciousness. Causes of hypo Having an awareness of these will support assessment.		
Slide 35-41 – Epilepsy	Explain the signs, symptoms and management of Seizures and Epilepsy condition. Main points to get across are that seizures are a disturbance in the normal electrical signalling patterns within the brain. Epilepsy vs Seizures is worth considering. A seizure is a single occurrence, whereas epilepsy is a neurological condition characterized by two or more unprovoked seizures **Types of seizure** (I probably wouldn't go into much detail here just give a brief overview) Use the slide to discuss and present from. There's a danger of getting bogged down here, CFRs don't need to get to hung up on the types of seizures and how they present. Just talk more generally. Broadly seizures fall into 2 categories:- 1. Generalized seizures; these are where all or the majority of the brain is affected. These include • Absence seizures mainly affect children; they cause the person to lose awareness of their surroundings, usually for up to 15 seconds. The person will seem to stare vacantly into space. Some people will flutter their	Look, listen, ask questions.	Power Point, V1.

		eyes or smack their lips. The person will have no memory of the seizure. They can occur several times a day. • Myoclonic - These types of seizures cause arms, legs or upper body to jerk or twitch, as if they have received an electric shock. They often only last for a fraction of a second, and normally the person will remain conscious during this time. • Atonic - cause all muscles to relax suddenly. There's a chance you may fall and injury. • Tonic - cause all muscles to suddenly become stiff. Can have loss of balance and fall so there is a risk of injury. • Tonic-clonic - convulsions have 2 stages. Body will initially become stiff and then arms and legs will begin twitching. Loss of consciousness and some people will lose bladder and bowel control. Seizures normally lasts a minute, but can last longer. • **Status epilepticus** is the name for any seizure that lasts longer than 5 minutes, or a series of seizures where the person does not regain consciousness in between. This is a medical emergency and requires treatment as soon as possible. 1. Focal seizures; these are where only part of the brain in affected. There are further subdivided into 2 categories:- • Focal aware – where the person is conscious and aware • Focal impaired – where the person is unconscious and will be unaware and mostly have no memory of the instance.		

Slide 42 – 48 – Unconscious	Explain the signs, symptoms, and management of an unconscious patient. . Recap on AVPU Glasgow Coma Scale GCS - Mention that there several Apps out there to aid calculation of GCS. **Task -** Give the CFRs the GCS laminate from the bags. Give them a set of cards. On one side is a patient scenario on the back should be the score. From the scenario, calculate a score; then flip over the card and see if correct or not. Introduce FISH SHAPED principle – the rationale being to highlight that unconsciousness has many causes and CFRs should explore and consider them. Exploring the cause will help to turn determine the management. Fainting – raise legs to aid circulation Imbalance of heat - Hypothermia – take temp and warm Asphyxia – respiratory arrest? Poisoning – the need for care in the Danger/SCENE survey Epilepsy – Active fitting? Diabetes – the need to take a BM in unconscious	Look, listen, ask questions.	Power Point, V1.
Slide 43	**Group work – practise time**	Look, listen, ask questions.	Power Point, V1.

Slide 44 – Wellbeing checklist – close	✓ Complete wellbeing checklist	Look, listen, ask questions.	Power Point, V1.

Disability and Expose/Examine
MEDICAL EMERGENCIES

Welcome / Croeso

Community First Responder
Initial Training
Day Three

1

Housekeeping

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




2

CFR initial Training 2023 – Day 3

Knowledge Check – Day 2

3

Learning Outcomes

Disability and Expose/Examine
MEDICAL EMERGENCIES

By the end of this session the Community First Responder should be able to:

- Understand some common medical emergencies
- Identify some common medical emergencies by the presenting signs and symptoms
- Demonstrate how to manage some common medical emergencies
  Anaphylaxis - Diabetes - Sepsis - CVA – Seizures - Unconsciousness



4



5

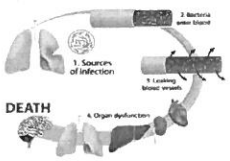
SEPSIS

Sepsis is a life threatening condition that arises when the body's immune response to an infection injures its own tissues and organs.

CAUSES

Sepsis doesn't just happen; it is triggered by a another infection.

- Lung/chest infection
- UTI
- Skin infection
- Post surgery infection
- Foreign object- eg tampon

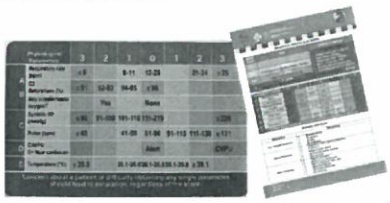


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National Early Warning Score - NEWS

Calculated from a set of patient observations.

NEWS pre-hospital tool to aid identification of patients at risk of deterioration from infection and identification of possible Sepsis.



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ENHANCED SKILLS – OBS PRACTICE



Can you :-

- accurately take a set of obs on a peer?
- Calculate their NEWS score?

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	Physiological Parameters	3	2	1	0	1	2	3
A B	Respiratory rate (bpm)	≤ 8		9-11	12-20		21-24	≥ 25
	O2 Saturations (%)	≤ 91	92-93	94-95	≥ 96			
	Any supplemental oxygen?		Yes		None			
C	Systolic BP (mmHg)	≤ 90	91-100	101-110	111-219			≥ 220
	Pulse (bpm)	≤ 40		41-50	51-90	91-110	111-130	≥ 131
D	CAVPU C= New confusion				Alert			CVPU
E	Temperature (°C)	≤ 35.0		35.1-36.0	36.1-38.0	38.1-39.0		≥ 39.1

Concern about a patient or difficulty obtaining any single parameter should lead to escalation, regardless of the score.

9

Patient A

- Voice
- HR-96
- RR-22
- SPO²-94
- BP-130/78
- BM-7
- Cap Refill->2
- Temp-39.1°

PATIENT A – Abdominal surgery in last 7 days

NEWS 9

Patient B

- Alert
- HR-88
- RR-16
- SPO²-98
- BP-130/78
- BM-5
- Cap Refill-<2
- Temp-37°

PATIENT B – Generally unwell

NEWS 0

Patient C

- Alert
- HR-89
- RR-21
- SPO²-94
- BP-103/62
- BM-8
- Cap Refill-<2
- Temp-36°

PATIENT C – Patient generally unwell, has arthritis, has complained of joint pain

NEWS 7

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ASSESSING FOR SEPSIS

Score using screening obs

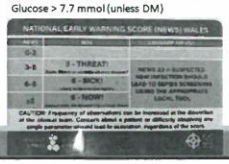
Nmemonic - THREE = Threat, SIX = Sick NINE = Now

Any 2 of the following present?

- Temperature > 38°C or < 36°C
- Respiratory rate > 20 per min
- Heart rate > 90 per min
- Acute confusion/reduced conscious level
- Glucose > 7.7 mmol (unless DM)

Is there a history of new infection

- Chest infection
- Urinary tract infection
- Abdominal pain or distension
- Meningitis
- Indwelling medical devices
- Cellulitis/septic arthritis/infected wound
- Chemotherapy < 6 weeks
- Recent organ transplant or surgery



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SEPSIS MANAGEMENT

- Correct any major A,B,C,D,E problems
- Oxygen Therapy if required
- Accurate NEWS
- History of infection or infection cause
- Update CCC/CSD

SEPSIS SYMPTOMS

CHILDREN:

A child may have sepsis if he or she:

- Is breathing very fast
- Has a "fit" or convulsion
- Looks mottled, bluish or pale
- Has a rash that does not fade when you press it
- Is very lethargic or difficult to wake
- Feels abnormally cold to touch

ADULTS:

An adult may have sepsis if they show any of these signs:

Slurred speech or confusion
Extreme shivering or muscle pain
Passing no urine (in a day)
Severe breathlessness
It feels like you're going to die
Skin mottled or discoloured

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ANAPHYLAXIS

Anaphylaxis is a serious allergic reaction that is rapid in onset and may cause death. Its hallmark is rapidly developing life-threatening airway/breathing/circulation (or any combination of the 3) problems and can be associated with skin and mucosal changes.

TYPES

Bi-phasic – Symptoms start mildly, followed by a period of no symptoms, before symptoms return with increasing B and C issues

Uni-phasic – symptoms rapidly get worse but once treated symptoms go and don't return

TYPES

Protracted – can last for several day.

Idiopathic – No apparent course

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CAUSES



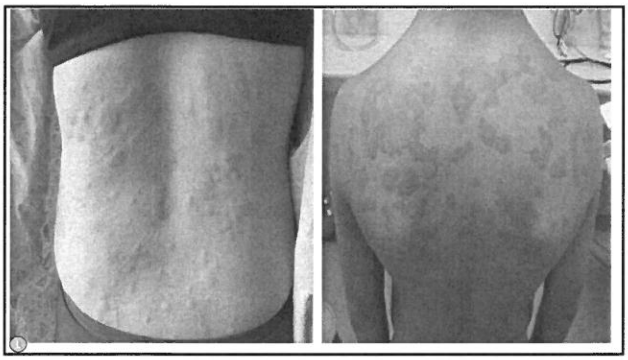
PATHOPHYSIOLOGY

2 stage process

- First exposure – sensitization; allergen causes antibodies production which attach to surface cells which release chemicals
- Second exposure – anaphylactic reaction; allergen binds antibodies on these cell's surface – histamine and other chemical messengers are released, with widespread dysregulated immune response. Blood vessels leak. Blood pressure drops, rashes may appear and membranes swell. The heart rate increases and airways narrow.

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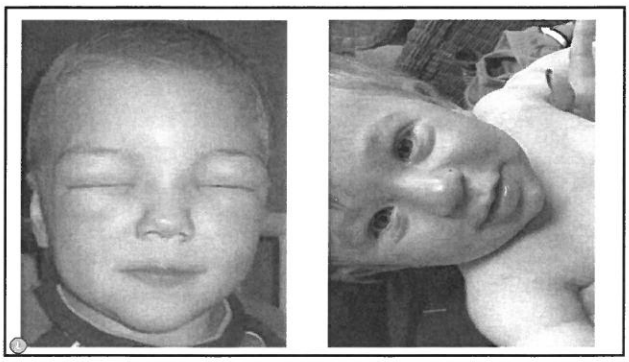
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Anaphylaxis: SIGNS AND SYMPTOMS

- Nettle rash (hives) anywhere on the body (urticaria)
- Itchiness (Pruritis)
- Sense of impending doom
- Swelling of throat, mouth, lips, tongue and other airway structures.
- Difficulty in swallowing or speaking
- Alterations in heart rate
- DIB
- Abdominal pain, nausea and vomiting
- Generalised flushing of the skin
- Sudden feeling of weakness (drop in blood pressure blood pressure)
- Collapse and unconsciousness

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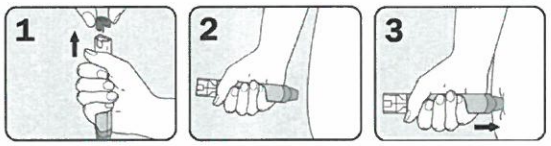
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Epi-Pen ADMINISTRATION PRACTICE



Form fist around EpiPen® and PULL OFF BLUE SAFETY RELEASE

Hold leg still and PLACE ORANGE END against outer mid-thigh (with or without clothing)

PUSH DOWN HARD until a click is heard or felt and hold in place for 3 seconds

REMOVE EpiPen®

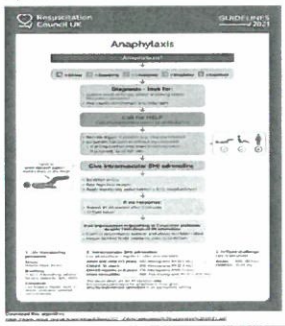
(EQUIPMENT FAMILIARISATION)

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ANAPHYLAXIS SCENARIO

Can you manage a patient in Anaphylaxis?



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Break Time



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DIABETES

Diabetes is a condition where the **blood glucose** levels cannot be controlled by the body. There are two types of diabetes -

Type 1 and Type 2.

Type 1 diabetes | What it is and what causes it | Diabetes UK



Type 2 diabetes | What it is and what causes it | Diabetes UK



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DIABETIC EMERGENCIES

Blood sugar is normally maintained within a narrow range of 4-5.4mmol/L when fasting and up to 7.8mmol/L 2 hours after eating.

Diabetics are encouraged to maintain a BM of between 4-8mmol/l.

There are two types of diabetic emergencies:

- ✓Hypoglycaemia.
- ✓Severe hyperglycaemia, which can be further divided into diabetic ketoacidosis (DKA).

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ANTT (ASEPTIC NON-TOUCH TECHNIQUE) IN MEASURING BLOOD GLUCOSE

- Always have sharps bin out before starting
- Always wear gloves when taking BM
- Change gloves between patients
- Never contaminate key parts
- Touch non-key parts with confidence
- Wash hands with good technique
- Dispose of sharps in approved sharps bin
- Dispose of contaminates in medical waste
- Clinell wipe surface of equipment after use



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BM PRACTICE



EQUIPMENT FAMILIARISATION

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ERRORS IN MEASURING BLOOD GLUCOSE?

- Machine not calibrated
- Contamination of test finger eg sugary food, insufficient drying of finger
- Expired strips or strips stored in extreme cold or hot
- Patient condition e.g. anaemia, hypoxia, shock

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Research signs and symptoms



2 groups
- Hypoglycaemia
- Hyperglycaemia/DKA

What are the causes, signs and symptoms?

Research - produce a poster – present to other half of the group – must include at least 1 picture!

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HYPOGLYCAEMIA MANAGEMENT?

3 categories
- severe (unconscious; GCS less than 8; fitting.)
- Moderate (conscious and able to swallow but may be confused)
- Mild (conscious, orientated and able to swallow)

Unconscious:
- Request immediate backup
- **Manage A; B; C;**
- Recovery position (monitor closely)
- O2 if hypoxic

Conscious:
- Assist patient to sit comfortably; if they have own medication eg Glucose Gel encourage to take or give 15-20g of glucose, this is available in

  55ml of Lucozade - 18ml of Ribena (do not use sugar free) - 2 teaspoons of sugar
- Follow up with starchy carb source, e.g. a piece of toast.
- Repeat BM @ 15-20 mins
- CSD call

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HYPERGLYCAEMIA/DKA MANAGEMENT?

Unconscious:
- Request immediate backup
- Airway, Breathing & Circulation.
- Recovery position (monitor closely)
- O2 administration

Conscious:
- Monitor patient.
- CSD call

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Kahoot!

Initial CFR training - Day 3 Medical Emergencies - Details - Kahoot!

https://kahoot.it

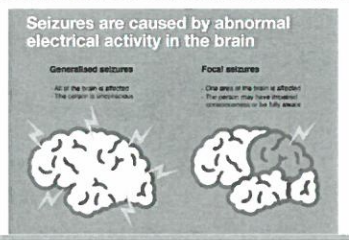
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SEIZURES/EPILEPSY

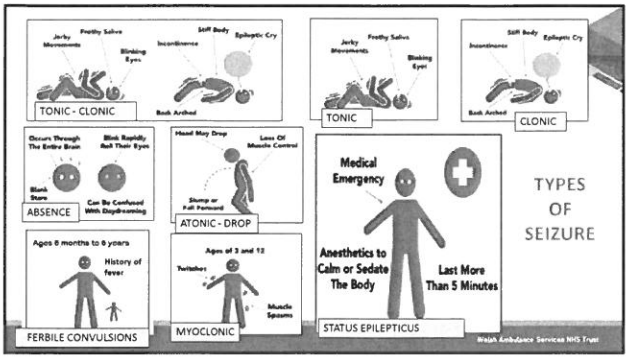
A seizure is a sudden uncontrolled disturbance in the normal electrical signaling of the brain.

Epilepsy is a diagnosed condition characterized by history of two or more unprovoked seizures.



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CAUSES OF SEIZURES?

- Epilepsy
- Not taking epilepsy medicine as prescribed
- Extreme fatigue and poor sleep
- Stress
- Alcohol and recreational drugs
- Withdrawal from alcohol
- Flashing or flickering lights
- Monthly periods
- Missing meals
- Having an illness which causes a high temperature
- Brain tumors
- Hypoxia
- Head and brain injuries
- PKU, poisoning and toxin build up

38

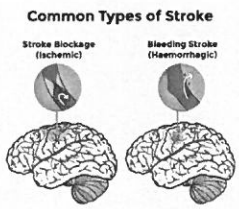
MANAGEMENT?

- Clear space around the patient to prevent injury
- Oxygen 100% @ 15Ltrs if actively convulsing
- Constant reassurance
- Note time & duration of the seizure
- DO NOT restrain the patient
- DO NOT forcibly open the mouth
- When convulsion has stopped, manage the airway and breathing and place the patient in the recovery position.
- Aim for oxygen saturations of 94-98%
- Children should continue to receive high flow oxygen

Considerations:
- Care plans
- Rescue Medication (Family/carers only)

39

STROKE(CVA) AND TIA

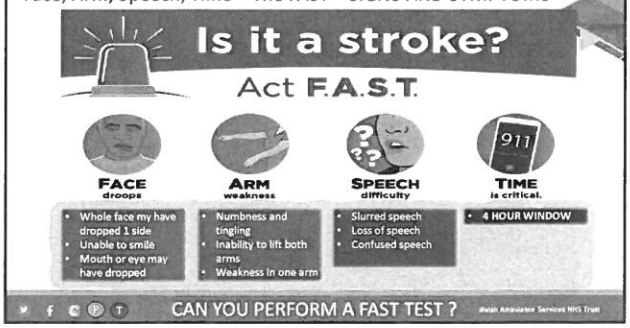


A stroke is where blood supply to part of the brain is cut off

- Ischaemic strokes (80%) and are caused by atherosclerosis (plaque build up) or an embolus (blood clot)
- Haemorrhagic is a caused by leak or rupture in a blood vessel
- TIA (Transient ischemic attack) often called mini strokes; where stroke symptoms occur but resolve within 24 hours.

40

Face, Arm, Speech, Time – The FAST + SIGNS AND SYMPTOMS



41

MANAGEMENT?

- Assess ABCDE
- Airway management and, if required, O_2
- Conscious – adopt most comfortable position for patient
- Reassurance
- Monitor and record vital signs
- Recovery position if unconscious
- Blood sugars as hypoglycaemia can mimic a stroke.

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Level of Response

Level of consciousness

To rate the LOC we use the acronym AVPU.

- A Alert, the patient looks at you
- V Verbal, not fully awake and only responds to verbal stimuli.
- P Pain, difficult to rouse and only responds to a painful stimuli.
- U Unresponsive, completely unconscious with no response.

AVPU explained - YouTube

43

Glasgow Coma Score - GCS

The Glasgow Coma Score assess the patient's level of consciousness from 3 aspects of the patients behaviour :-

- Eye Response (4 down to 1)
- Verbal Response (5 down to 1)
- Motor Response (6 down to 1)

Highest score is 15 = normal level of consciousness

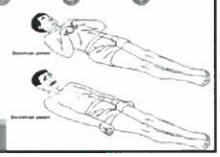
Lowest score is 3 = patient will be unconscious.

44

GCS

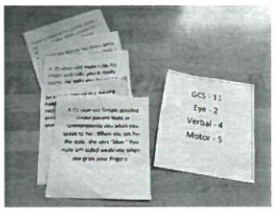
ADULT

E	EYE RESPONSE	No response	Eyes open to painful stimuli	Eyes open to verbal stimuli	Spontaneous	
V	BEST VERBAL RESPONSE	No response	Incomprehensible sounds	Inappropriate words	Confused	Oriented to person, place and time
M	BEST MOTOR RESPONSE	No response	Abnormal extension (Decerebrate)	Abnormal flexion (Decorticate)	Flexion withdrawal from pain	Moves and localises to pain	Obeys commands
	SCORE	1	2	3	4	5	6



45

Glasgow Coma Score - GCS task



- Can you calculate the GCS scores for these patient scenarios?

46

UNCONSCIOUS CASUALTY

F aint
I mbalance of heat
S hock
H ead injury

S troke / CVA
H eart attack / MI
A sphyxia
P oisoning
E pilepsy
D iabetes



47

MANAGING AN UNCONSCIOUS PATIENT TASK



Can you effectively manage an unconscious patient?

48

MANAGEMENT

- Primary assess DRCAcBCDE
- Manage life threatening findings in stepwise approach
- Cat Haem, Airway management? O2 therapy? Assisted ventilation? Actively warm
- Recovery position
- CSD Call
- Full secondary survey to include full set of obs (additionally blood pressure, BM, Pupil response, Temperature)
- Assess for injury – particularly head
- Obtain as full a history as possible – Environmental cues? Medi-alerts? warning cards? Alcohol? Drug Paraphernalia/track marks? Patient characteristics – fruity odur on breath, temperature.

49

Break Time

Followed by practice time.



50

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**!

- *Feeling a bit down? Talk to a colleague*
- *Finding things difficult? Talk to the management team*
- *Need Professional advice? Call Wellbeing Support Service 0800 321 4700*
- *Don't know what to do? Call the Samaritans*

www.wastkeeptalking.com

Diolch Thank You



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Initial Course Day 3 (Red = to be added on future courses)

Time	Session	Activity	Equipment
0845-0900	**Welcome and refreshments**	Welcome	Refreshments Name labels Pens Teas and coffees Milk
0900-0915	**Knowledge check 2**	• Knowledge check 2	Note pads and pens Desks Chairs Knowledge checks hard copies and QR code linking to Teams
0915-0920	**Learning objectives**	• PowerPoint • Crib sheets – optional for completion	PowerPoint Conditions crib sheet
0920-1020	**Sepsis**	• PowerPoint – Q &A /whiteboard work • Obs practice on peer • NEWS task calculating NEWS scores	Enhanced skills bag NEWS cards from bags
10:20-11:10	**Anaphylaxis**	• PowerPoint – Q & A / whiteboard work • Epi-practice • Anaphylaxis scenario	Laminates of signs and symptoms Training epi-pens Task sheet for scenario Response bags
11.10-11.25	**BREAK**		
1125-1225	**Diabetes**	• PowerPoint and Q & A / whiteboard work • BM practice • Research task	BM kits Sharps bin Gloves Hand sanitizer Flip chart paper
1225-1255	**LUNCH**		
1255-1315	**Kahoot quiz**	• Kahoot	CFRs own phones
1315-1345	**Seizures**	• PowerPoint and Q & A / whiteboard work • Sticky post-it activity for causes	Sticky post-its pens
1345-1415	**CVA**	• PowerPoint and Q & A / whiteboard work • FAST test practice	
1415-1515	**Unconscious casualty**	PowerPoint and Q & A and Whiteboard work Scenario task	(Pairs) practice Mannequin or volunteer as unconscious pt
1515 to close	**BREAK and practice time**	CFRs to take tea/coffee on the go. The purpose of the remainder of the day is to	(Group task – 1 role play scenario) 3 x CFRs to manage GCS 3 + seizure pt (Trainer as pt) others observe, then debrief & reflect

Sign offs:

Pre-learning Knowledge check	Sepsis and NEWS Anaphylaxis Diabetes and BM Seizures CVA Managing unconscious casualty	O2 practical aspect of sign off

Ymddiriedolaeth GIG
Gwasanaethau Ambiwlans Cymru

Welsh Ambulance Services
NHS Trust

Initial CFR 5 day training course

Trainer notes: Day 3 – Disability and Expose/Examine

RED = to complete/needs discussion or attention

Black = Important info

Grey = background and extension info

Overview

Focus of the day is Disability and Expose/Examine aspects of DRABCDE. Essentially though we will be exploring a range of medical emergencies (Anaphylaxis, Diabetes, Sepsis, CVA, Seizures, Hypothermia, Hyperthermia, Unconscious). Varied day with tasks, discussion, quizzes, Q and A, scenarios, practice of obs and more.

HONESTLY; MY DAY HAS BEEN AN ABSOLUTE NIGHTMARE TO PREP FOLKS. IT'S REALLY DISJOINTED AND ATTEMPTING TO TRY AND ESTABLISH ANY FLOW TO IT HAS BEEN REALLY DIFFICULT. IT'S NOT BEEN HELPED BY THE PREVIOUS POWERPOINTS IN THAT DISABILTY AND EXPOSE/EXAMINE WERE ALL CLUMPED INTO ONE POWERPOINT AND THERE WAS ALL THESE OTHER CONDITIONS THAT NEEDED COVERING UNDER MEDICAL EMERGENCIES. I GET THE DRABCDE STRUCTURE AND PARTICUALRY FOR ABC I THINK ITS IMPORTANT. SO, ESSENTIALLY, IT'S JUST A DAY OF MEDICAL EMERGENCIES. IT FLOWED BETTER WITH MEDICAL EMERGENCY STUFF BEFORE DISABILITY AND EXPOSE AND EXAMINE BUT THIS CAN BE CHNAGED IF REQUIRED. OWEN HAS TAKEN THE HYPOTHERMIA AN HYPERTHERMIA ASPECTS.

I'M ALSO NOT SURE ABOUT THE LEARNING OBJECTIVES AT ALL FOLKS. WHAT I HAVE DONE HERE IS PULLED FROM A COMBINATION OF THE OLD POWERPOINTS AND THE RELEVANT SIGN OFFS FROM THE MOST RECENT BARRY AND TY ELWI NEW COURSES. I DON'T LIKE THEM AT ALL. THE FIRST SET FOR ANAPHYLAXIS, SEPSIS ETC ARE REALLY SPECFIFIC THEN THE DISABILITY ONES I DON'T THINK ARE ALL THAT APPROPRIATE. I THINK THE WHOLE LOT COULD BE LOOKED AT.

I DON'T THINK THEY NECESSARILY TO BE SHARED WITH THE RESPONDERS ETC – IT COULD BE OVERKILL FOR MY DAY; BUT MORE FOR OUR POINT OF REFERENCE REALLY. IN THE POWERPOINT I HAVE SIMPLFIED MASSIVELY ON SLIDE 2. (MORE ABOUT THIS LATER)

Below the previous objectives (black = covered in the materials; Red = not covered notes provided why; Blue = from previous practical sign offs)

- Explain the term 'anaphylaxis' and its common causes.
- Describe signs and symptoms that a patient with anaphylaxis may present with.
- State the management of anaphylaxis including the administration of adrenaline using the patients own auto-injector.

- Be able to manage a patient with anaphylaxis
- Explain what sepsis and septic shock are and how they occur.
- State how you would recognise a patient with sepsis or septic shock.
- Describe the out of hospital management of shock – I THINK WE SHOULD FOCUS ON SEPSIS MORE AS WE NEED TO MANAGE ALL SEPSIS, SEPTIC SHOCK DEVELOPS FROM SEPSIS
- Describe the relevant anatomy and physiology of the endocrine system.
- Describe the types and causes of diabetes.
- Describe the two diabetic emergencies. THIS COULD BE WORKED ON AS AN OJECTIVE.
- Explain how to record a blood sugar measurement.
- State the functions of the nervous systems – NO NEED FOR ALL THAT HEAVY PHSYIOLOGY IT ISN'T GOING TO BENEFIT THEM AT ALL.
- Describe the anatomy and physiology of the nervous system – AS ABOVE NOT HELPFUL
- Explain the pathophysiology relating to a range of neurological disorders – ONLY TOUCHED ON WITH CVA AND SEIZURES VERY BRIEFLY IT'S NOT GOING TO HELP AND IS GOING OVER THEIR HEADS.
- Describe the management of a range of neurological disorders.
- List several common causes of coma – I THINK WE SHOULD JUST USE TERM UNCONSCIOUS HERE.
- Be able to manage and unconscious patient

Objectives

Covered on PowerPoint slide 2. Alternatively write on the whiteboard.

By the end of day 3 they should:-

- **Understand a number of medical emergencies**
- **Be able identify a number of medical emergencies from presenting signs and symptoms**
- **Be able to effectively manage a number of medical emergencies**

And that encompasses; **Anaphylaxis, Diabetes, Sepsis, CVA, Seizures, Unconsciousness.**

The day should help to give CFRs a basic knowledge and understanding of what the conditions are, how they effect the body and their causes. Emphasis should be on a basic understanding; the goal is to aid identification and support their management.

It should build understanding of the signs and symptoms which will aid their assessments. Recognition is vital. This will include observations.

It should result in CFRs being able to manage the conditions effectively.

Kahoot quiz

A quick icebreaker to get CFRs thinking from the outset. They're generally well received; a bit of competition and fun to kick the day off. I have a quiz pre-set up. To access my Kahoot account go to Kahoot! | Learning games | Make learning awesome! My account login details are:-

username/login: **iandavidthomasidt@gmail.com**

Password: **Daisy16!**

Quiz here: Initial CFR training - Day 3 Medical Emergencies - Details - Kahoot!

Patient Obs practice

15-20 mins of peer observations using grey bag equipment. At this point leave BM for diabetes section. I WILL KNOCK UP SOME "HOW TO" TEACHING CARDS WHICH CAN BE USED BY CFRS. PRETTY MUCH THE ONLY BIG THING I HAVE LEFT TO DO ON THIS DAY NOW.

Crib sheet

Summary; aide memoir for the various conditions. Something for students to take notes on throughout the day. No requirement to complete allow it to be optional. I JUST THOUGHT HERE DIFFERENT LEARNING STYLES VAK ETC AND WRITING SOMETHING DOWN WOULD REINFORCE LEARNING AND GENERATE SOMETHING FOR THEM TO GO BACK AND LOOK OVER. BE INTERESTED IF YOU THINK THIS IS A GOER OR NOT AND WHETHER WE SHOULD BOTHER OR BIN THIS OFF

Sepsis

About, causes

A brief explanation of what the condition is and what causes it is provided on slide 3. Its worth elaborating that often causes are seemingly fairly innocuous; a chest infection or UTI that isn't treated can ultimately lead a dysregulated immune response that can ultimately result in poor oxygen perfusion of organs and organ failure. Establishing a history of primary infection or source of infection is fundamental to effective assessment in Sepsis patients.

Pathophysiology

Sepsis pathophysiology Simplification. Normal inflammatory response 5 stages – 1 – infection enters the body and is recognized; chemical messengers (cytokines and inflammatory mediators) messages are sent out, 2 - immune cells and white cells get called into action travel through body to site of infection, 3 - blood vessels at the site widen so that

white cells can leak out into and attack the bacteria. 4 Platelets go to work and form a plug seal.

Where does sepsis come in - Sepsis dysregulated/poorly regulated/overwhelming immune system reaction to an infection.

Cytokine storm; chemical messengers overreact; this causes more white blood cells and immune cells than we need to be recruited, which causes even more chemical messages to be sent out which recruits even more immune cells which causes even more chemical messages to be sent out.....you get the picture. The issue becomes systemic (all over the body). A big player here is histamine; it causes widening of blood vessels (capillaries) which increases their permeability or more simply ow much they leak. This causes not just white blood cells, but fluid and even red blood cells to leak out of the vessels; such a wide systemic leakage causes drop in blood pressure; additionally we also start to get clots formed within the bloodstream and blood vessels which obstructs and reduces blood flow. So great are these reactions that blood pressure drops so significantly to the point that we end up with which organs aren't perfused and start to shut down. We end up with multiple organ failure.....Kidneys, liver, lungs, etc. THIS IS MY VERSION OF THE PATHOPHYS BTW

News

Have NEWS cards with you; also mention NEWS card in the responder bag. Have a copy of the written PCR with you – discuss the limitations of the paperwork form and adding sufficient observations, only one side scanned, how paperwork goes on and where it can be stored. Discuss use of the gloves to write obs and solo responding. DOES THE NEW OBS SHEET IMPACT WHAT IS WRITTEN HERE. WILL THIS HAVE BEEN ROLLED OUT BY THE TIME THESE NEW COURSE RESPONDERS ARE ON THE ROAD?

Hand out 3 NEWS Score task laminates; allow 5 or so minutes to calculate scores. Gauge scores. Use the patient history to highlight further that underling primary infection that they should be looking for in their assessments of potential sepsis and in fact all patients.

NEWS scenario 1 – Score 9; Has had abdominal surgery in the previous week.

NEWS scenario 2 – Score 0; Generally unwell patient.

NEWS scenario 3 – Score 7; patient has arthritis; complaining of joint pain.

Management of sepsis
Q and A; encourage the responders to come up with the solutions to how they would manage and then just fill in the gaps or clarify.

Anaphylaxis

Definition and types
Present from slides. Knowing the types are really important; CFRs should be airing on the side of caution with suspected Anaphylaxis. They can easily be caught out by Biphasic where the patient seems to improve but will then deteriorate. Idiopathic where there is no underlying cause the CFRs need to not take for granted. Just because there is no identifiable trigger, it doesn't mean the patient isn't having an anaphylactic reaction. There is potential

for a biphasic idiopathic reaction which may seem resolved. Protracted, don't underestimate that symptoms may worsen over coming days and the potential impact this might have. Essentially don't get caught out. Use CSD and get guidance.

Causes

Good opportunity for Q and A.

The common causes of anaphylaxis include foods sources such as peanuts, tree nuts, milk, eggs, shellfish, fish and sesame seeds, although many other foods have also been known to trigger anaphylaxis. Some people can react to even tiny amounts of the food.

Non-food causes include wasp or bee stings, natural latex (rubber), and certain drugs such as antibiotics. In some people exercise can trigger a serious allergic reaction – either on its own or in combination with other factors such as food or drugs (for example, aspirin).

Sometimes the cause of the reaction is not found. This is called "idiopathic anaphylaxis.

Pathophysiology

Anaphylaxis doesn't generally occur on first exposure to an allergen. You can have a severe reaction to things on first exposure. But, generally with anaphylaxis it's a **2** stage process.

Firstly we have a period called sensitization. Foreign object enters the body via injection, ingestion, inhalation, absorption into either tissues or blood. The foreign object will have antigens on its cells surface (these are markers which lie on the surface of cells giving them identity). Body's immune cells recognize antigens as foreign. As a result we start producing a whole bunch of antibodies. These are proteins. They do 2 things – firstly they attach to the antigens on the surface of the foreign cells and attack and neutralize these cells. Secondly they attach themselves to mast cell which are a type of white blood/immune cell that is found in connective tissues all through the body, especially under the skin, near blood vessels and lymph vessels, in nerves, and in the lungs and intestines. When attached the mast cells are said to be primed. Mast cells are full of chemical messengers called cytokines which are used to signal to and call other immune cells into action. They are also full of histamine which acts on capillary walls causing little junctions.

Stage 2 is our secondary exposure to the allergen. Again, it enters body by one of the four routes. The antigen attaches itself to antibodies on the surface of the mast cells.

Sign and symptoms

Slides 11-20 of the PowerPoint, I plan on printing out and laminating; For this section I would likely do some white board work and Q and A, but pass these around the group to add to the discussion on the signs and symptoms. I'M NOT ALL THAT HAPPY WITH THESE; THEY ARE GOOD IMAGES, BUT JUST THE QUALITY WHEN MADE BIGGER IS QUITE POOR.

Anaphylaxis should be suspected where 1) Sudden onset and rapid progression of symptoms; 2) Life threatening Airway; Breathing; Circulation changes; 3) Skin and mucosal changes (flushing, urticaria, angioedema).

Diagnosis is supported if patient has been exposed to know allergen.

The majority of signs and symptoms are covered on the PowerPoint. Nettle rash (hives) anywhere on the body (urticaria); Itchiness (Pruritis); Sense of impending doom;swelling of throat, mouth, lips, tongue and other airway structures; Difficulty in swallowing or speaking; Alterations in heart rate, DIB, Abdominal pain, nausea and vomiting, Generalised flushing of the skin, Sudden feeling of weakness (drop in blood pressure blood pressure), Collapse and unconsciousness

Incorrect epi-pen administration
Either another laminate or use the PowerPoint slide. Where possible the patient themselves or a family member trained in administering an epi-pen Discussion – what is wrong with administration of the epi-pen in the photo?

Wrong part of thigh should be anterolateral aspect not anterior.

Blue safety cap hasn't been removed from the end of the epi-pen.

Thumb is over the end of the pen which wouldn't allow release even if the cap was removed.

They may raise that the person is wearing trousers – technique wise this is ok, ideally skin contact to get the right level of depth. Needle Length and Dosing of Epi Auto-Injectors: Experts Weigh In (allergicliving.com) Epipens have fatal flaws, says Pret A Manger death coroner | The Times

HOW LONG PAST EXPiRY DATE IS SOMETHING I NEED TO LOOK UP.

CHECK ON NICE GUIDELINESAdult dose of 1 in 1000 is 500mg, 5 mins apart, no limit on number of doses. Own epi pens are 300mg – child 300mg as adult (6-12) under 6 150mg

Further in terms of assessment, those with allergic asthma (particularly poorly controlled) and eczema are at more risk of developing anaphylaxis. Look for a medi alert bracelet; previous anaphylactics should all carry 2 epi pens

Epi-pen practice
In pairs have several goes at administering training epi-pen.

Anaphylaxis Scenario task
Group off into 3's. One to act as CFR; one to act as patient and one to have assessment task sheet. I've created a task card here that can be laminated, marked on with a board pen and used to give feedback. I have also created a scenario sheet for the patient to help the scenario run better. The idea is that one f the CFRs assesses and manages and anaphylaxis scenario and get feedback that all can learn from.

The main points really in terms of assessment are be systematic; however early recognition of the signs and symptoms of anaphylaxis and administration of epi-pen are the first line treatment; ordinarily we would oxygenate first. The CFR should understand that self-

administration of epi-pen is not always reliable and should not assume self-administered epi-pen has been successful. Time of epi-pen use should be recorded. They should lie patient flat (potentially elevate legs or not); consider sitting position if it makes breathing easier. If pregnant they should lay on left side. High flow oxygen should be administered and monitored throughout. At 5 mins if there is not improvement there should be a repeat dose of adrenaline. If after second dose of adrenaline fails to improve patient condition, then condition should be treated as refractory anaphylaxis and adrenaline should be administered every 5 minutes alongside high flow oxygen, however it is highly unlikely that any patient will carry more than 2 epi-pens

Diabetes

Introduction

The 2 videos are a great introduction to the both Type 1 and Type 2 and the differences.

Diabetic emergencies

Cover Hypos and Hypers.

Hypoglycaemia is where are blood glucose levels are too low; less than 4mmol/L in a diabetic / less than 3mmol/L in a non-diabetic patient. Causes are varied, but can include not enough carbohydrates in diet, skipping meals, excessive exercise, illness and alcohol intake. It is worth know that we categorize as severe (unconscious; GCS less than 8; fitting,) Moderate (conscious and able to swallow but may be confused) Mild (conscious, orientated and able to swallow). The category of the hypo should determine the management actions taken.

Hyperglycaemia is where blood glucose levels are too high; usually above 7mmol/L before eating and above 8.5mmol/L 2 hours after eating. A test at any other time that reads 11mmol/L or more is also a hyper.

In diabetic patients levels can fluctuate and often be too high; Raised blood glucose is not a medical emergency unless DKA is present. but not within the – can be too high and ok (thirst, tiredness, blurred vision and weakness, weight loss) – not normally serious, chronic long term, nerve damage, heart issues, vision issues. CFRs

Diabetic ketoacidosis (DKA) is a life-threatening problem that affects people with diabetes. In DKA so severe is the lack of insulin the body can't use sugar for energy. Instead itstarts to use fats for energy. During this process chemicals called ketones are released into the blood. Blood becomes acidic – can lead to acidosis. Heart, respiratory failure and coma. Blood PH is kept within a tight PH - 7.35-7.45. Below 7.35 acidosis starts to occur.

ANTT

Prior to BM practice ANTT should be considered fully. BM is probably the only invasive procedure that CFRs will carry out fairly regularly. Here I'd probably just pop up the slide and get the CFRs to read and raise any questions if there are any points that aren't clear. I've tried to keep it really simple.

- Always wear gloves when taking BM

- Change gloves between patients
- Never contaminate key parts
- Touch non-key parts with confidence
- Wash hands with good technique
- Dispose of sharps in approved sharps bin
- Dispose of contaminates in medical waste
- Clinell wipe surface of equipment after use

BM practice

Stress here that BMs should only be carried on:

1) Known diabetics
2) Those with new confusion or disorientation
3) Unconscious

*** Unless specifically asked for by a clinician either CSD or road medic.**

Work with peers can use test fluid and puncture a banana. AGAIN MAY WELL PRODUCE AN INSTRUCTION SHEET HERE.

Highlight the Martin video for further guidance. Monitors should be recalibrated every week. 3 month expiry on quality solution, CFRs should date their pots.

Errors in taking BM

CFRs should be made aware that errors can produce inaccurate results. Common faults which are on the PowerPoint include....

- Machine not calibrated or not calibrated properly for reasons such as out of date test solution.
- Contamination of test finger eg sugary food, insufficient drying of finger
- Expired strips or strips stored in extreme cold or hot
- Patient condition e.g. anaemia, hypoxia, shock

Poster work/research task on signs and symptoms of hypoglycaemia and hyperglycaemia

Divide the class up into 2 groups. One group should research the causes and signs and symptoms of hypoglycaemia and the other DKA before each presenting back to the other half of the group.

Hypo signs and symptoms – having and awareness of these will aid recognition

Autonomic – Sweating, trembling/shaking, heart palpatations or pounding, hunger

General – Headache, nausea

Neuro – poor coorination, confusion, speech difficulty, drowsiness, uncharacteristic behaviour, aggression, unconsciousness.

Causes of hypo Having an awareness of these will support assessment.

- Taking too much insulin
- Not eating enough carbs
- Too much physical activity
- Drinking alcohol.
- Hot and humid weather.
- Going through puberty.
- Menstruation.
- Illness and infection

Signs an symptoms of DKA – again having an awareness will aid CFRs recognition.

These should include the classic hyper symptoms such as:-

- Polyuria – excessive/frequent urine output
- Polydipsia – excessive thrist
- Weight loss
- Lethargy
- Frequent infections such as thrush
- Fruity odour (Ketones on breath) – not everyone can detect this
- Presence of ketones in urine or blood
- Hyperventilation

As well as the more classic DKA symptoms

- Vomiting
- Abdominal pain
- Confusion
- Dehydration
- Loss of consciousness
- Kussmauls breathing

Causes of DKA

Typical causes of DKA include

- Illness and infection eg influenza, UTI; surgery and injury
- growth spurt or puberty; periods
- Not properly managing insulin

Management of Diabetic emergencies

Again, here I would us the slides from the PowerPoint and discuss, Q and A.

Hypo

Again having an awareness of the categories may be useful. Essentially, patient will fall into 2 categories: those who are conscious and those who are unconscious which will impact how they are managed.

Unconscious

- Request immediate backup
- Manage A; B; C;
- Get a BM value
- Recovery position (monitor closely)
- O2 if hypoxic

Conscious

- Get an accurate BM value
- Assist patient to sit comfortably; if they have own medication eg Glucose Gel encourage to take or give 15-20g of glucose, this is available in
- 55ml of Lucozade - 18ml of Ribena (do not use sugar free) - 2 teaspoons of sugar
- Follow up with starchy carb source, e.g. a piece of toast.
- Repeat BM @ 15-20 mins
- CSD call

DKA

Again consciousness is going to play a big factor.

Unconscious

- Request immediate backup
- Airway, Breathing & Circulation.
- Recovery position (monitor closely)
- O2 administration

Conscious

- Monitor patient.
- CSD call

Seizures

Introduction

Again a complex topic, which we want to avoid CFRs becoming bogged down in. Main points to get across are that seizures are a disturbance in the normal electrical signalling patterns within the brain.

Epilepsy vs Seizures is worth considering. A seizure is a single occurrence, whereas epilepsy is a neurological condition characterized by two or more unprovoked seizures.

From there CFRs should be aware that seizures can present in many different ways. Its worth noting that seizures have 3 phases, aura phase, ictal phase and the post-ictal phase – all 3 phases will see changes in behaviour.

The active or ictal phases of seizures can present in different ways. The main point I guess to get across is that CRRs shouldn't be misled if a seizure doesn't present in full blown tonic-clonic fashion.

Types of seizure

Use the slide to discuss and present from. There's a danger of getting bogged down here, CFRs don't need to get to hung up on the types of seizures and how they present. Just talk more generally. Broadly seizures fall into 2 categories:-

1) Generalized seizures; these are where all or the majority of the brain is affected. These include

- Absence seizures mainly affect children; they cause the person to lose awareness of their surroundings, usually for up to 15 seconds. The person will seem to stare vacantly into space. Some people will flutter their eyes or smack their lips. The person will have no memory of the seizure. They can occur several times a day.
- Myoclonic - These types of seizures cause arms, legs or upper body to jerk or twitch, as if they have received an electric shock. They often only last for a fraction of a second, and normally the person will remain conscious during this time.
- Atonic - cause all muscles to relax suddenly. There's a chance you may fall and injury.
- Tonic - cause all muscles to suddenly become stiff. Can have loss of balance and fall so there is a risk of injury.
- Tonic-clonic - convulsions have 2 stages. Body will initially become stiff and then arms and legs will begin twitching. Loss of consciousness and some people will lose bladder and bowel control. Seizures normally lasts a minute, but can last longer.
- **Status epilepticus** is the name for any seizure that lasts longer than 5 minutes, or a series of seizures where the person does not regain consciousness in between. This is a medical emergency and requires treatment as soon as possible.

2) Focal seizures; these are where only part of the brain in affected. There are further subdivided into 2 categories:-

- Focal aware – where the person is conscious and aware
- Focal impaired – where the person is unconscious and will be unaware and mostly have no memory of the instance.

Causes

Sticky post-it activity. CFRs to write one cause per post it; see how many they can come up with. Follow this up with presenting of slide for them to compare. Point to get across is that there are multiple causes.

Management

Q and A and whiteboard work. CFRs in the field will be faced with 2 types of seizure scenarios. Either actively seizing patients or post seizure patients.

- They should ensure the patient is as safe and protected as possible by clearing space around them to prevent injury.

- Oxygen 100% @ 15Ltrs
- Constant reassurance
- Note time & duration of the seizure
- **DO NOT restrain the patient**
- **DO NOT forcibly open the mouth**
- When convulsion has stopped, manage the airway and breathing and place the patient in the recovery position.
- Aim for oxygen saturations of 94-98%
- Children should continue to receive high flow oxygen

CVA

Introduction

A stroke is where blood supply to part of the brain is cut off. 3 types to consider:-

1) **Ischaemic strokes** (80%) and are caused by atherosclerosis (plaque build up) or an embolus (blood clot).
2) **Haemorrhagic** is a caused by leak or rupture in a blood vessel.
3) **TIA (Transient ischemic attack)** often called mini strokes; where stroke symptoms occur but resolve within 24 hours.

Signs and Symptoms

Q and a and whiteboard work. See what the CFRs can come up with. CVA or TIA should be suspected in patients with sudden onset in any of these signs and symptoms. The number which present will vary from patient to patient.

- Facial weakness limb weakness, loss of fine finger movement especially one side
- Altered sensation: numbness, tingling, hemisensory loss
- Disturbance of level of consciousness
- Speech and language changes
- Personality changes
- Severe headache
- Memory loss
- Disturbance of hearing
- Loss of balance; vertigo
- Loss of vision
- Nausea, vomiting

Management

Q and A and whiteboard work. Highlight 4 hour stroke window for thrombolysis.

- Assess ABCDE
- Airway management and, if required, O_2
- Conscious – adopt most comfortable position for patient
- Reassurance
- Loosen clothing
- Monitor and record vital signs
- Recovery position if unconscious
- Blood sugars as hypoglycaemia can mimic a stroke.

Unconscious casualty

Introduce FISH SHAPED principle – the rationale being to highlight that unconsciousness has many causes and CFRs should explore and consider them.

Practical activity managing unconscious

Use this as an opportunity to pull the whole day together. Present the entire group with one unconscious casualty either a mannequin or volunteer. As a group they should attempt to manage the patient in a stepwise fashion. For each step they take, get one of the group to act as scribe writing the step they took on individual card. At the end of the task CFRs should then lay the cards out on the floor in the order they performed each step, give feedback and use slide 39 to support this. CFRs can rearange order and add additional cards so that they have a full structured sequence of how to manage an unconscious patient.

They should follow a DR CABCDE approach, get support from CSD, intervention eg oxygen treat as they go along.

Paracetamol

Do I need to build in here – Owen had asked can I include, but not had a chance to discuss with him and struggling to see where it fits as its part of pain relief ladder. Should it not sit with trauma?

GCS - 12

Eye - 2

Verbal - 5

Motor - 5

GCS - 11

Eye - 2

Verbal - 4

Motor - 5

GCS - 3

Eye - 1

Verbal - 1

Motor - 2

GCS - 14

Eye - 4

Verbal - 4

Motor - 6

GCS - 15

Eye - 4

Verbal - 5

Motor - 6

GCS – 13/14

Eye - 4

Verbal - 3

Motor – 6

A young female has fallen while rock climbing. When you apply a physical stimulus to her shoulders, she extends her arms and legs but is showing no other response.

You are treating an intoxicated patient who appears struggling to maintain an airway. When you attempt to insert a nasal airway he opens his eyes, slaps your hand away, curses at you but unsure where he is, and sits up. When you stop, he lays down on the stretcher.

A man is found on the ground outside a homeless shelter. When you give his shoulders a light squeeze, his eyes open, he tells you to go away, and pushes your hand away.

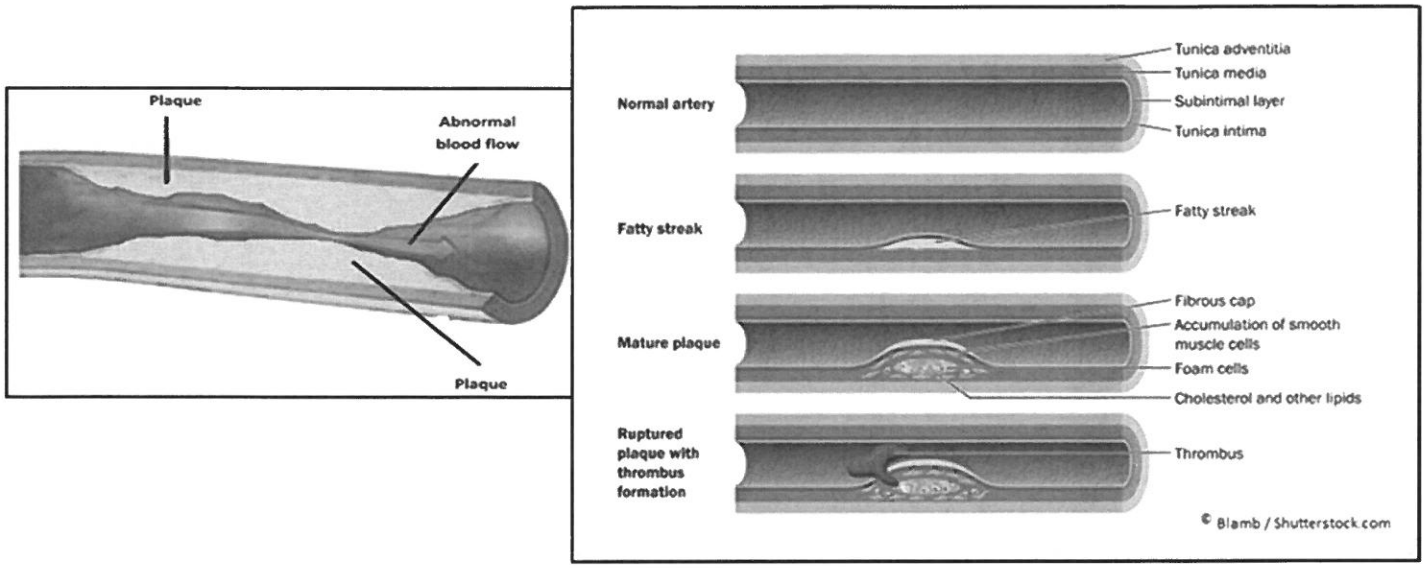
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A 73-year-old female possible stroke patient looks at you spontaneously when you speak to her. When you ask her the date, she says "blue." You note left-sided weakness when she grips your fingers.

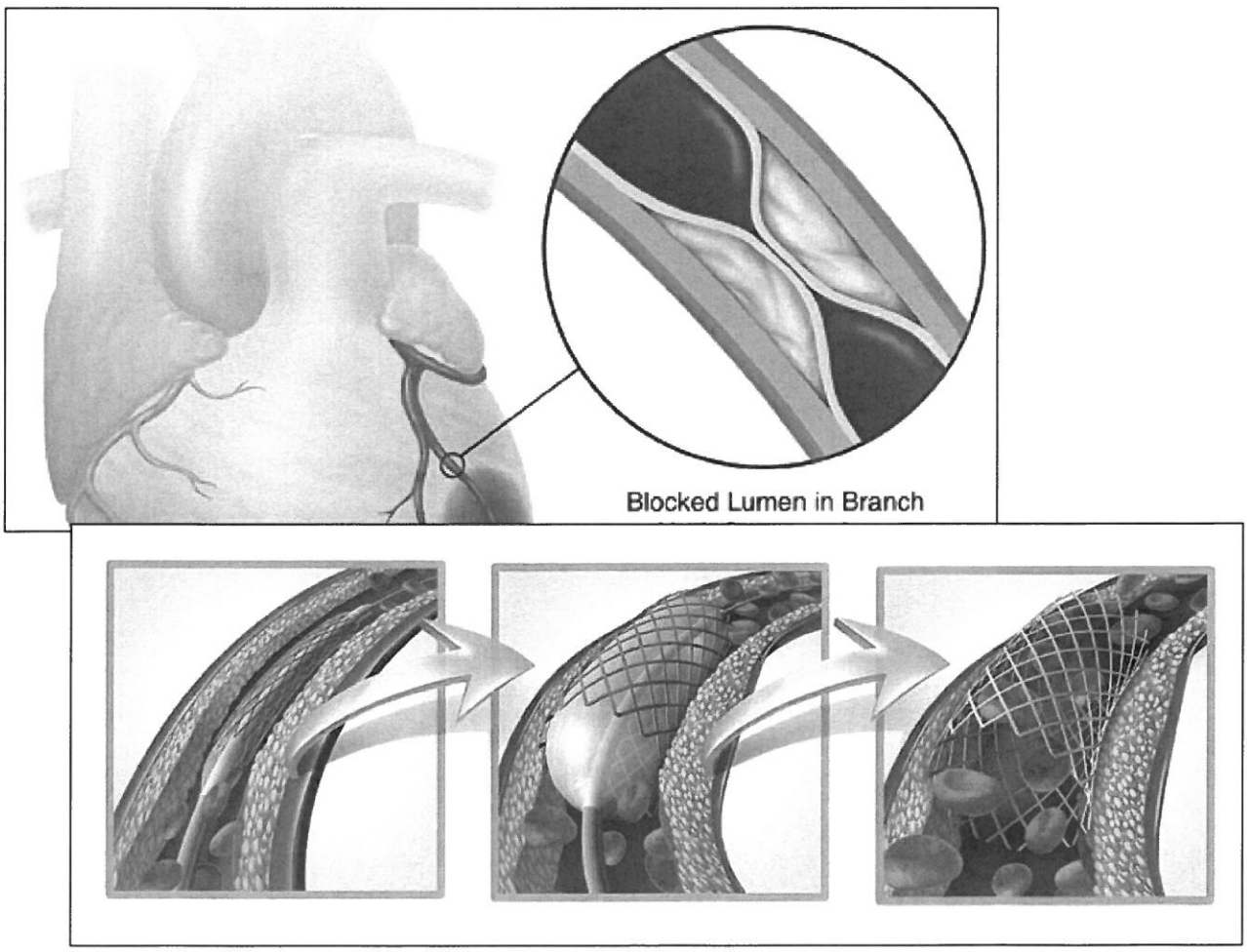
A 75-year-old male rubs his chest and tells you it really hurts. He tells you he wants to go to the hospital, and you help him walk to the stretcher.

An elderly female in a nursing home is walking around her room and greets you when you enter. She speaks clearly but her answers are confusing.

Coronary Artery Disease (CAD)



Blocked Artery & Cardiac Stent Insertion



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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.	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 equipmentis 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	**Group work – Basic Life Support** 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.

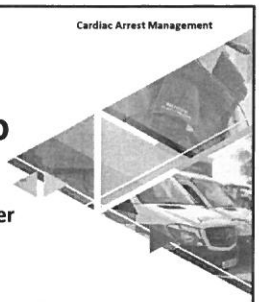
Slide 45-47– Key Learning points	Review/recap learning objectives. Highlight key learning points. • If feasible, add a left lateral tilt if resuscitating a pregnant patient (between 15–30°). A small amount of tilt may be better than no tilt. • Signs of life can be difficult to detect in mild to severe 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

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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





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2

Learner Agreement – OUR BEST



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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

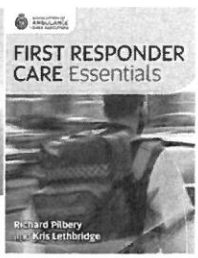


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5

WAST FR Reference material





jrcalc PLUS

Some images courtesy of Bing

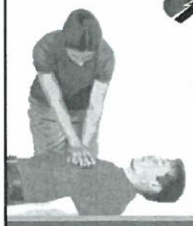
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Produced in accordance with guidelines issued by:

Resuscitation Council (UK)

The Resuscitation Guidelines from the European Resuscitation Council and the Resuscitation Council (UK) 2021



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7

Cardiac Arrest

What is the chain of survival ?



Early recognition and call to 999 | Start CPR | Early defibrillation | Early advanced life support

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Cardiac Arrest

This is the ultimate medical emergency, BUT you will have the ability to provide basic life support (BLS), combining two of the most effective treatments

Cardiopulmonary Resuscitation (CPR) and **Defibrillation**.

These two elements combined give the patient the greatest chance of **Return of Spontaneous Circulation** (ROSC)



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9

Cardiac Arrest

CPR at best achieves **15%** of normal cardiac output and **30%** of normal cerebral perfusion



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10

Danger!

Do not put yourself in danger







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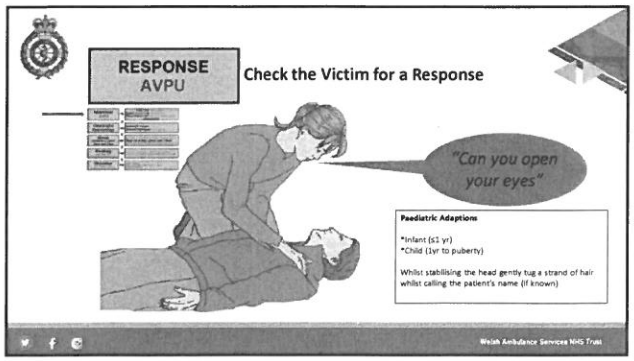
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RESPONSE AVPU	Fully Alert Responsive to Voice Responsive to Pain Unresponsive
Catastrophic Haemorrhage	Indirect Pressure Arterial Tourniquet
Airway (Consider C-spine) Open and Clear	Head Tilt & Chin Lift or Jaw Thrust
Breathing	
Circulation	

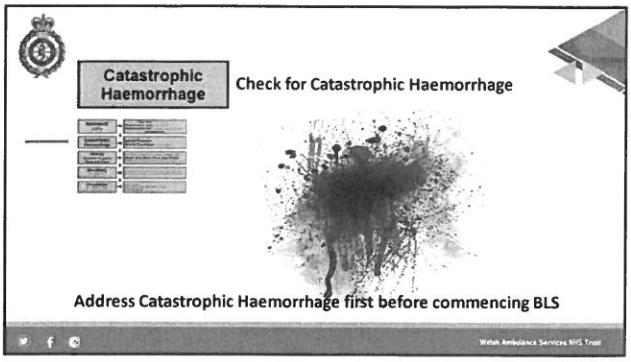


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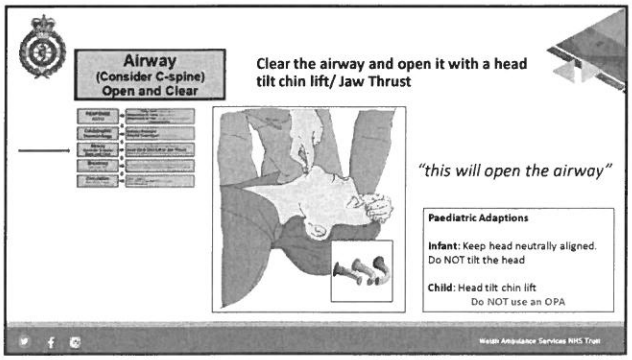
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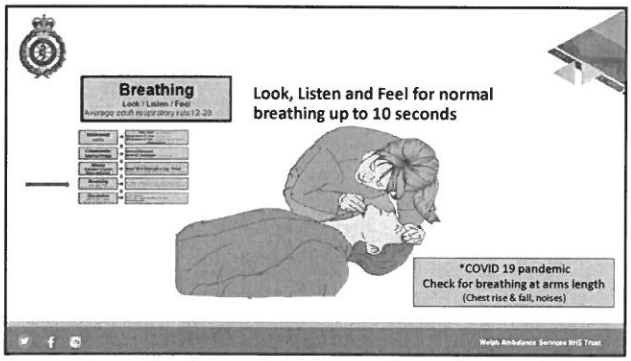
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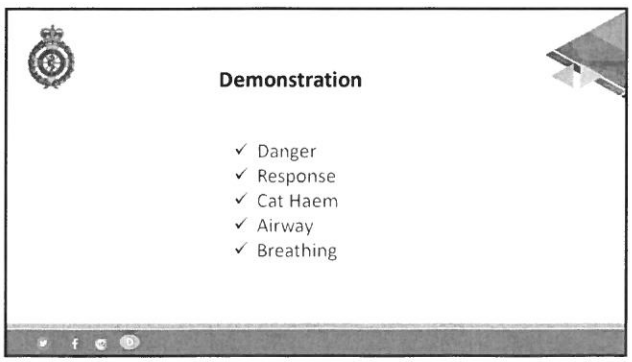
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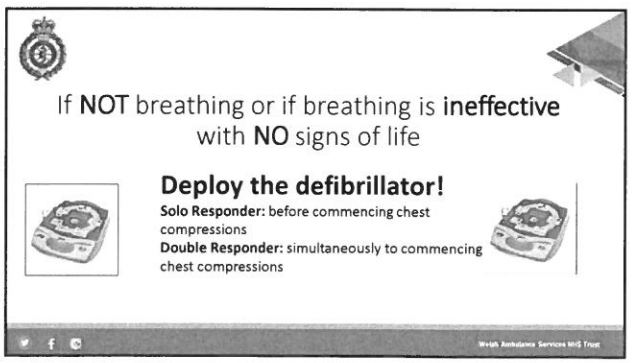
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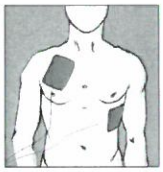
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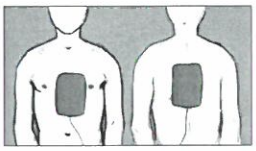
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PAD Placement

Primary



Alternative



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Demonstration

Chest checks:
- ✓ Moisture
- ✓ Excess chest hair
- ✓ Pendants
- ✓ Pacemakers
- ✓ Patches
- ✓ Piercings

PAD Placement:
- ✓ Primary (Upper right & left lateral)
- ✓ Alternative (Anterior/Posterior & Bi-axillary in advanced pregnancy)

20

Automated External Defibrillator (AED)



Adult (Solo Responder)
- ✓ Attach AED & follow voice prompt
- ✓ Commence Chest Compressions (30:2)

Adult (Double Responder)
- ✓ Commence Chest Compressions
- ✓ Simultaneously attach AED

Child (Solo Responder)
- ✓ Provide 1 min of CPR before attaching AED

Child (Double Responder)
- ✓ After 5 initial rescues breaths, commence Chest Compressions (30:2)
- ✓ Simultaneously attach AED

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Automated External Defibrillator (AED)



22

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

When attached to a patient's chest the AED automatically analyses 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**.

23

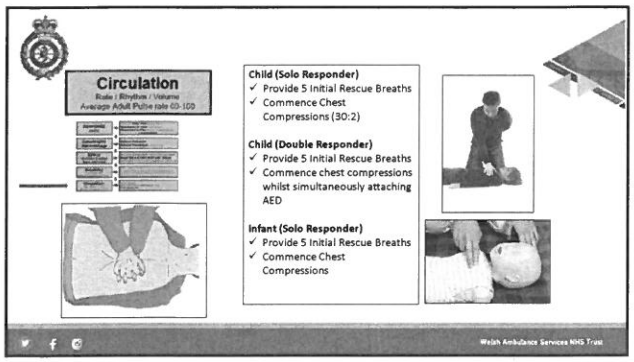
Danger?...Check safety

Do NOT defibrillate patients while they are:
- ✓ In water, or
- ✓ Near explosive or combustible environments

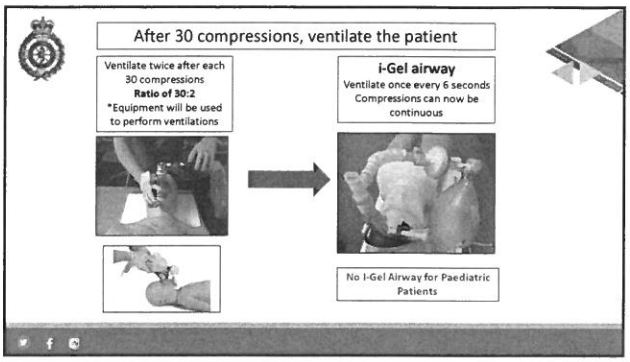




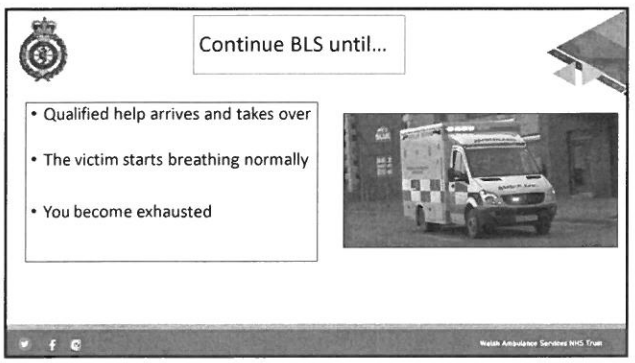
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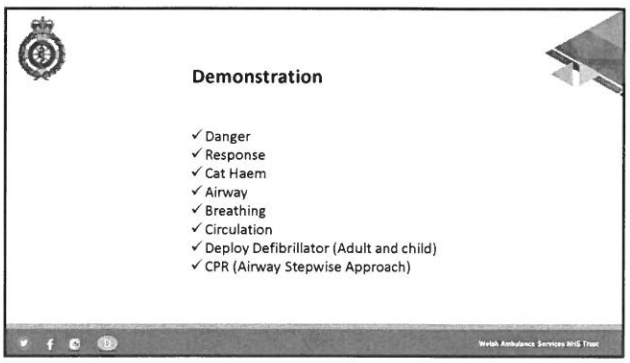
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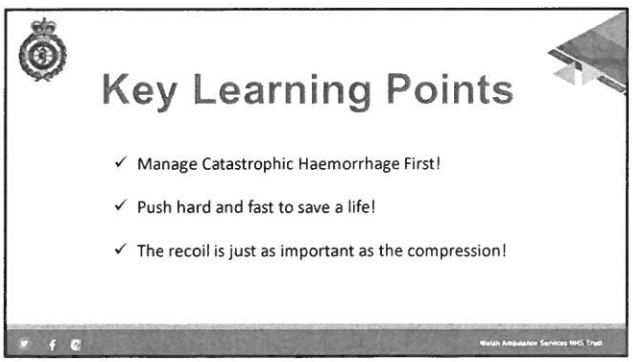
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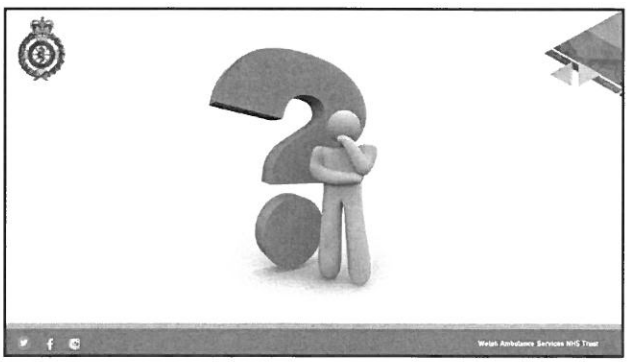
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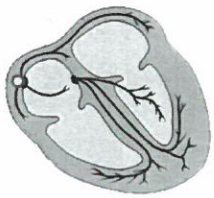


30

Heart Rhythms, Cardiac Arrest
and
Automated External Defibrillator (AED)

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Normal Sinus rhythm

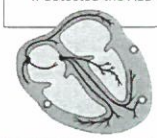


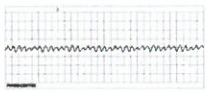


32

Ventricular Fibrillation (VF)

- ✓ When the heart's electrical conducting system becomes rapid and disorganized (like a bag of wriggling worms)
- ✓ Never associated with a palpable pulse
- ✓ If detected the AED will always advise a shock

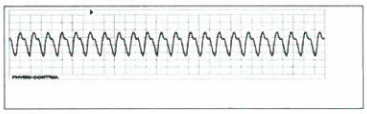




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Ventricular Tachycardia (VT)

- ✓ Ventricular Tachycardia usually originates in the ventricles and has a regular broad complex rhythm (100-300/min)
- ✓ Most AEDs will shock VT if rate is ≥ 150/min



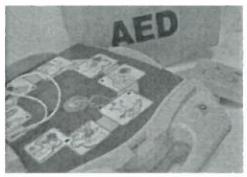
34

Demonstrate applying AED electrodes as solo responder

35

Demonstrate applying AED electrodes as solo responder

Group Work



36

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

37

Demonstrate BLS including airway up to I-Gel and AED

Group Work



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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

39



40

Special Circumstances

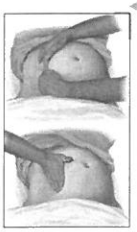
- ✓ Pregnancy
- ✓ Hypothermia
- ✓ Neck stoma patients
- ✓ Drowning
- ✓ Paediatrics

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)



42

Cardiac arrest in hypothermic patients

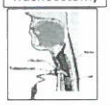
- ✓ A core body temperature less than 35 degrees is defined as Hypothermia
- ✓ In cases of moderate (28-32 degrees) and severe (less than 28 degrees) hypothermia, signs of life can be very difficult to identify.
- ✓ Unless there is clear indication that the cardiac arrest was caused by a lethal injury 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)

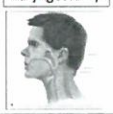
43

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
- ✓ Hemicorporectomy (or similar massive injury)
- ✓ Decomposition/Putrefaction
- ✓ Incineration
- ✓ Hypostasis (graphic image warning!)
- ✓ Rigor Mortis



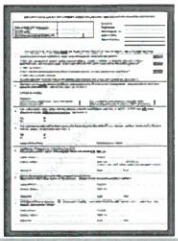
Whenever there is a chance of survival, resuscitation should be attempted

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 defendable'
[AACE, 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.

49



50

Group Work



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**!

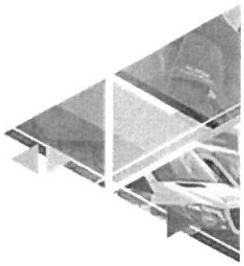
- *Feeling a bit down? Talk to a colleague*
- *Finding things difficult? Talk to the management team*
- *Need Professional advice? Call Wellbeing Support Service 0300 321 4700*
- *Don't know what to do? Call the Samaritans*

www.wastiseptalking.com

Diolch
Thank You



52



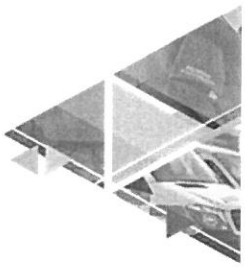
Initial Recruitment Course Day 2

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

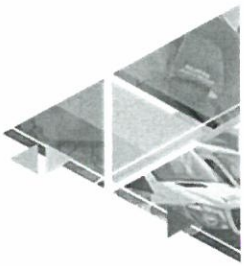
Sign-offs required

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:

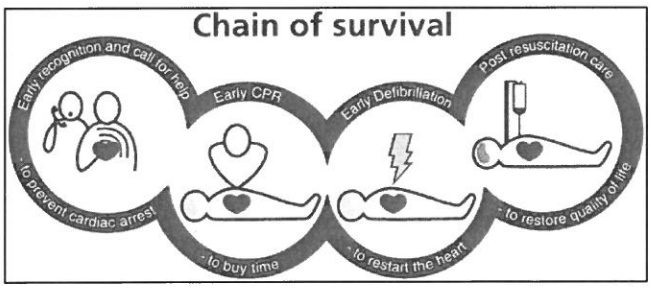
Resuscitation Council UK

- ✓ 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 <u>Early recognition, CPR and defibrillation</u>**

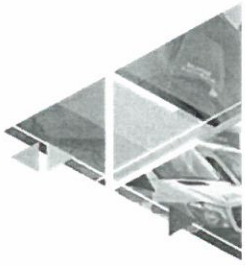
The Chain of Survival is a sequence of important actions that are required to optimise the chances of survival in an out of hospital cardiac arrest (OHCA).



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 heal 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 heal 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 analyses 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

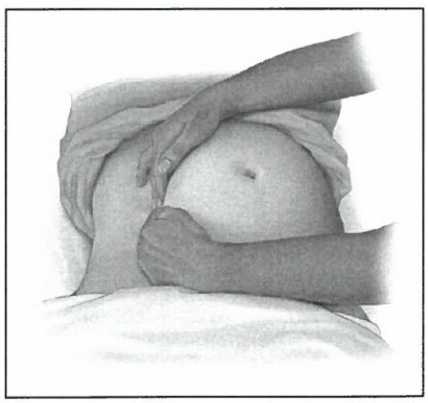
Return of Spontaneous Circulation (ROSC)

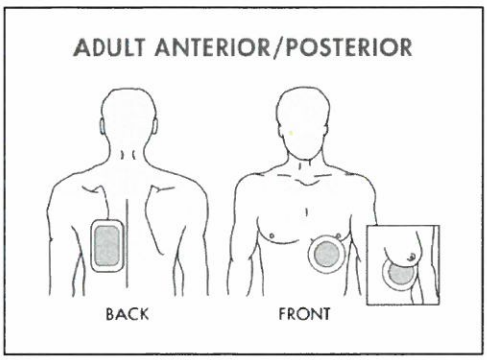
Discuss slide

Special Considerations in cardiac arrest:

Pregnancy

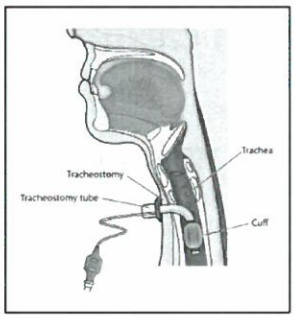
- ✓ The procedure for resuscitating a pregnant patient is the same for any patient, but with some modifications
- ✓ If possible, manually displace the uterus to the left to minimise compression on the inferior vena cava combined with soft padding under right buttock.
- ✓ If feasible, tilt patient to 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)





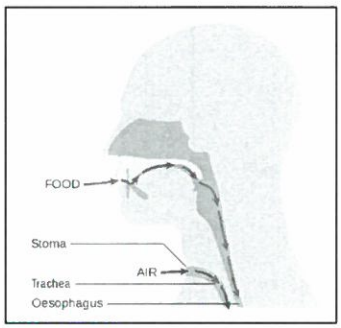
Tracheostomy patient

- ✓ 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.

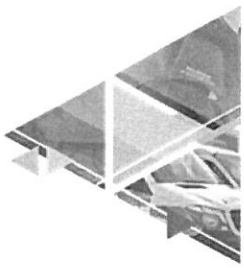


Laryngectomy patient

- ✓ 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

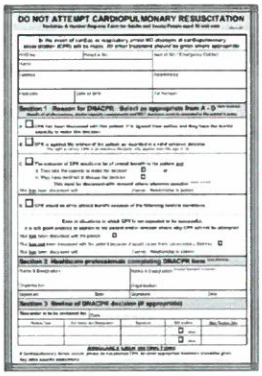
There may be times when a patient has an injury or presenting **condition that is unequivocally associated with death**, irrespective of age

- ✓ Massive cranial and cerebral destruction
- ✓ Hemicorporectomy (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)

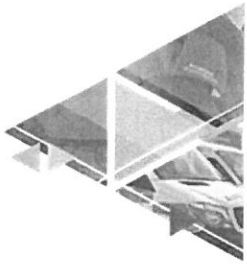






(Handout laminates)

*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.

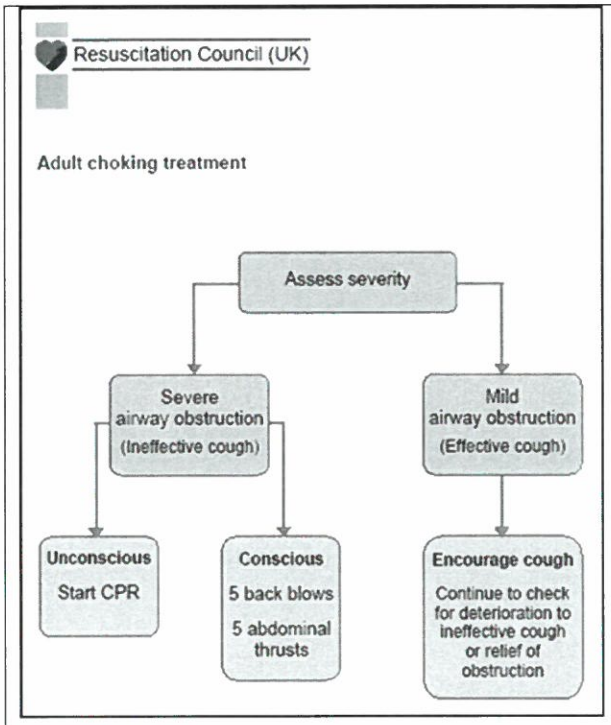
Signs of obstruction

- ✓ 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!



Paediatric adaptions:

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)

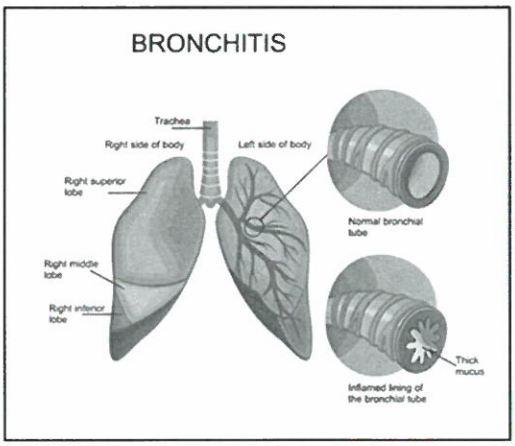
- ✓ Largest contributory factor is a history of smoking, although only 15% of smokers develop COPD [Patel, 2008]
- ✓ Smoking effects the respiratory system in many ways, predominately by **inflammation:**
  1. Inflammatory cells release substances which trigger an **immune response**, which activate 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 [Totora, 2008].

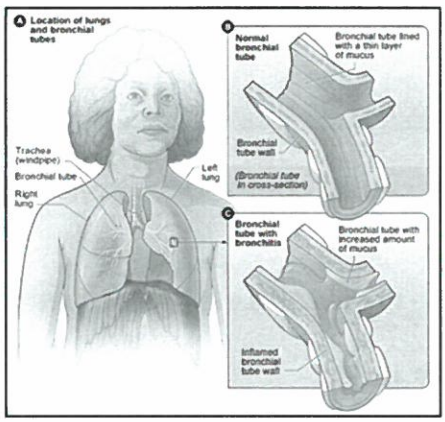
(Group 1)

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]

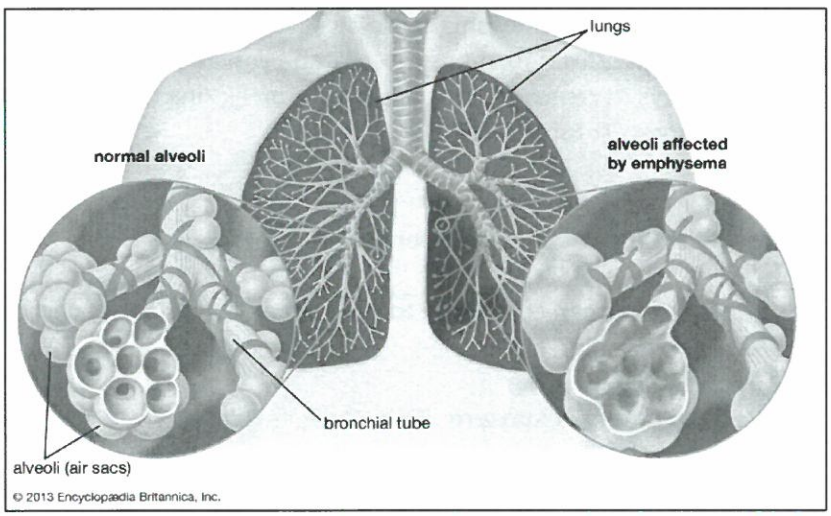




(Group 1)

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

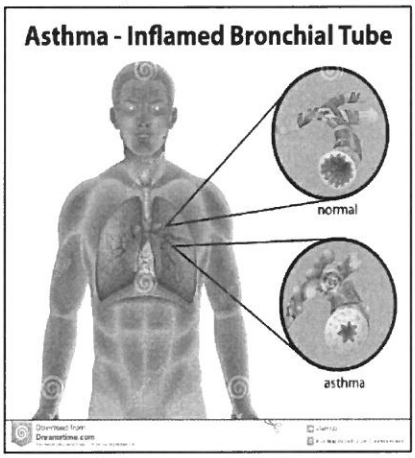
- ✓ The **alveoli walls are destroyed by enzymes** called proteases.
- ✓ Proteases are usually controlled by 'anti proteases'
- ✓ Smoking can disrupt the protease balance. When this occurs the protease begin to destroy the alveoli, **leading to a collapse of the airways**, this causes airway obstruction.
- ✓ 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].



Handout COPD laminates when group presents for visual context

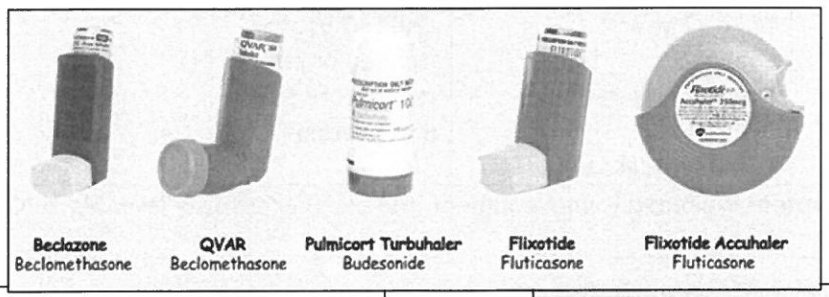
(Group 2)
Asthma

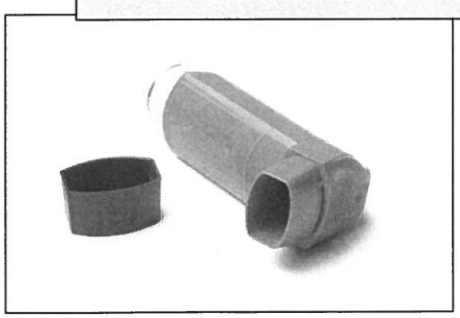
- ✓ An airway obstructing condition that is intermittent and reversible
- ✓ Caused by chronic inflammation of the bronchi (narrowing)

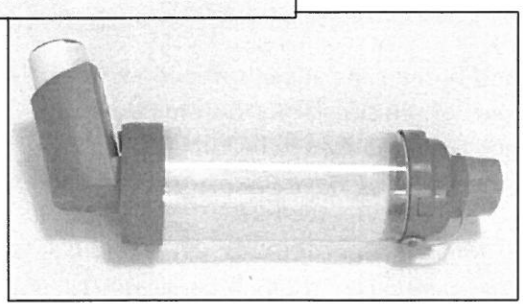


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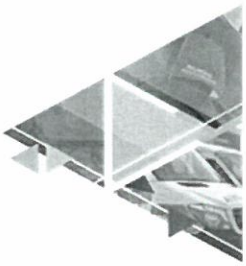
- ✓ Smooth muscle surrounding the airways become irritated causing the muscle to constrict
- ✓ Inflammation can also cause excessive mucous production, worsening the obstruction
- ✓ Often an audible expiratory wheeze can be heard (without a stethoscope)
- ✓ Medications are prescribed to prevent and relieve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

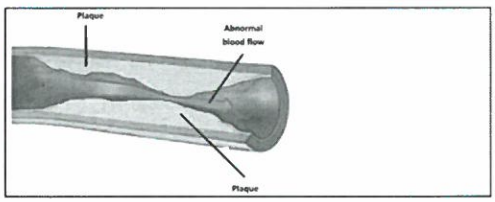
- ✓ Pain or discomfort across the chest, often **sub-sternal in location**
- ✓ Often described as **tightness or indigestion**-like ache
- ✓ Sometimes discomfort **radiates to one or both arms, neck, back or epigastrium**
- ✓ Angina can be classed as **stable if chest discomfort is described as above**, 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.

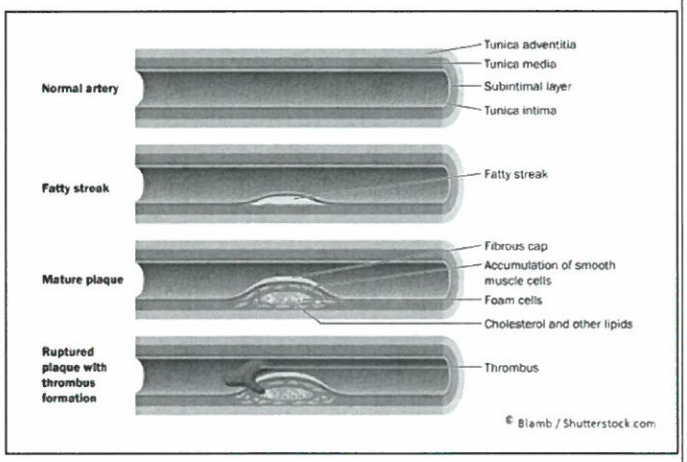
Coronary Artery Disease – First Responder, Care Essentials p. 141

- ✓ Also known as **ischaemic heart disease**.
- ✓ Mostly caused by a**therosclerosis** 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

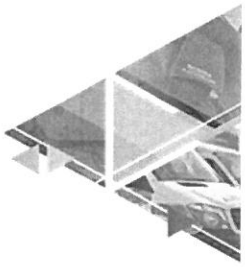
Hypovolemic shock – acute loss of circulating blood volume. Can be assessed in 4 classes:

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

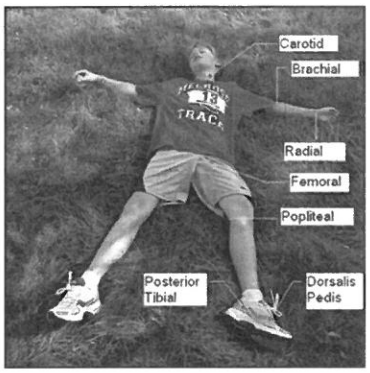
- ✓ Characteristics of Normal Respiration Non COPD patients **94 – 98%**
- ✓ COPD patients **88 – 92%**

*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.

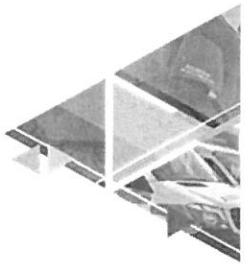
Disadvantages

Limitations to equipment.

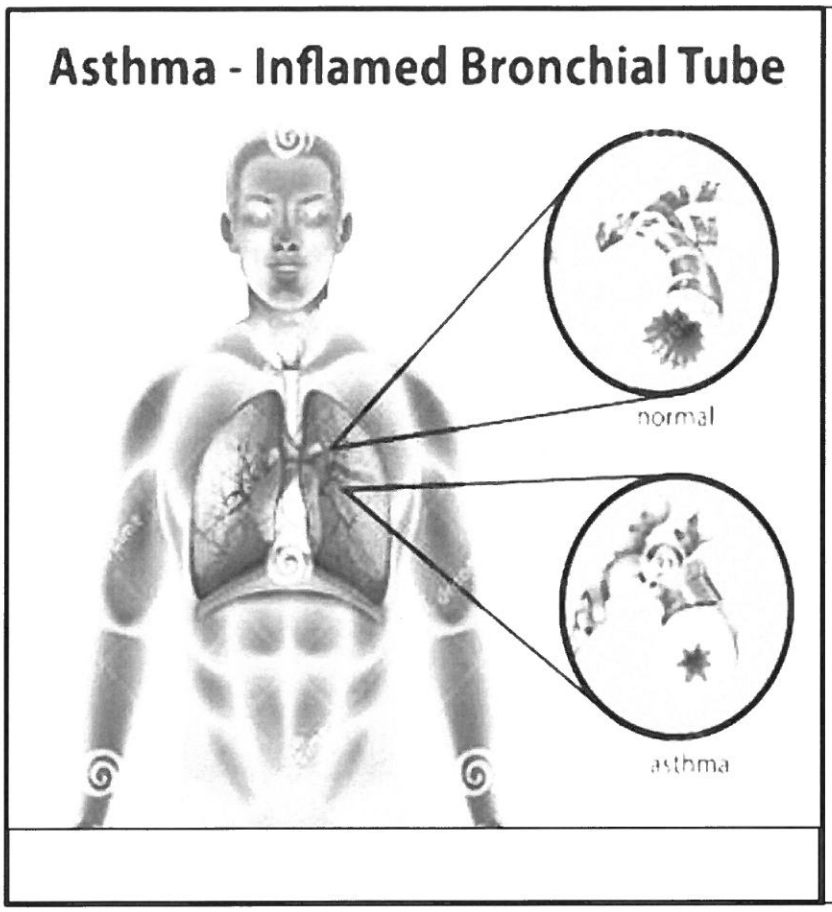
Session 6 1545-1645	Practice Time Medical Scenario (Pairs)	Assess & Manage: 1. Cardiac patient 15min per scenario	Response bags Enhnaced skills bags Sign Off booklets Evidence Form 3
1645-1700	Han in paperwork Close		Sign off booklets

*Sign offs to be completed:
Choking procedures



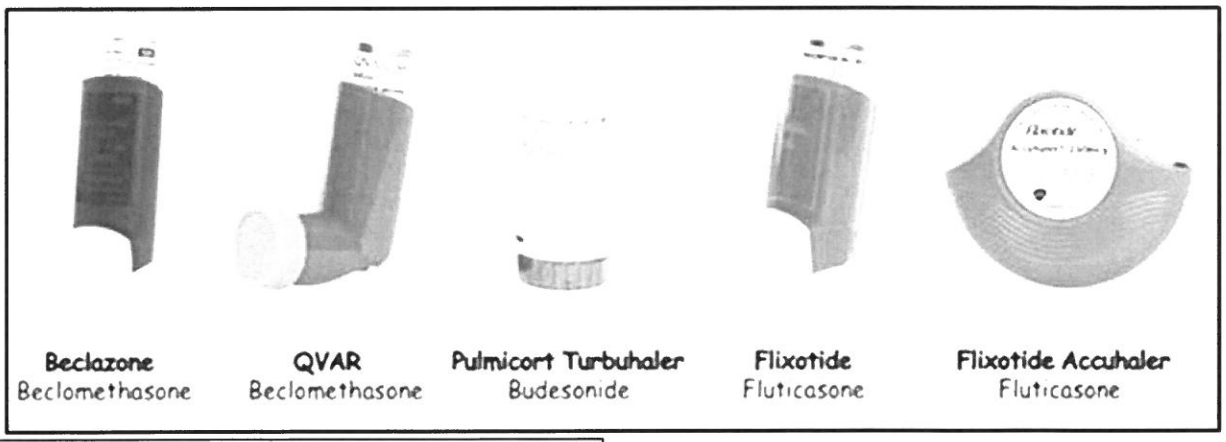


Asthma

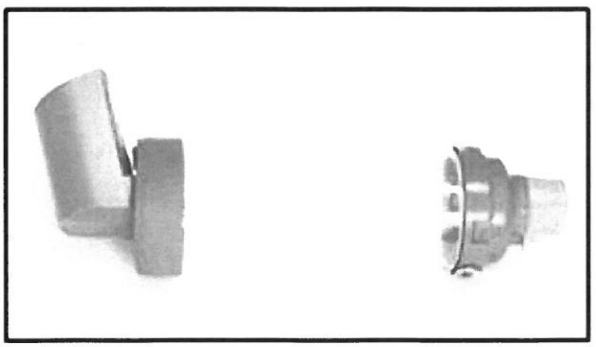


- An airway obstructing condition that is intermittent and reversible
- Caused by chronic inflammation of the bronchi (narrowing)
- Smooth muscle surrounding the airways become irritated causing the muscle to constrict
- Inflammation can also cause excessive mucous production, worsening the obstruction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

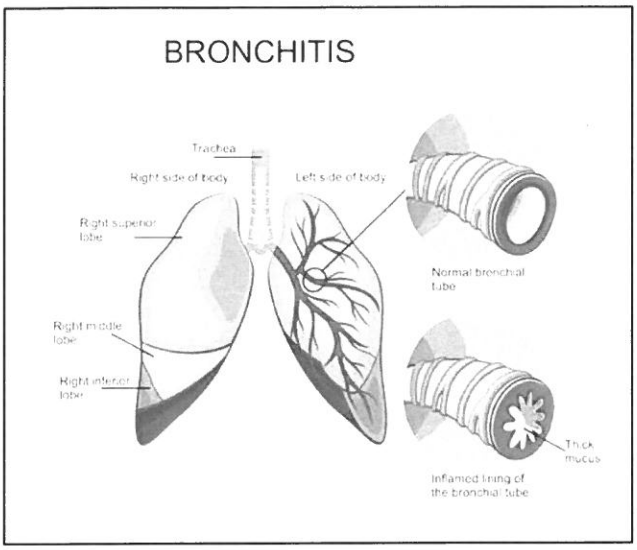
Medication







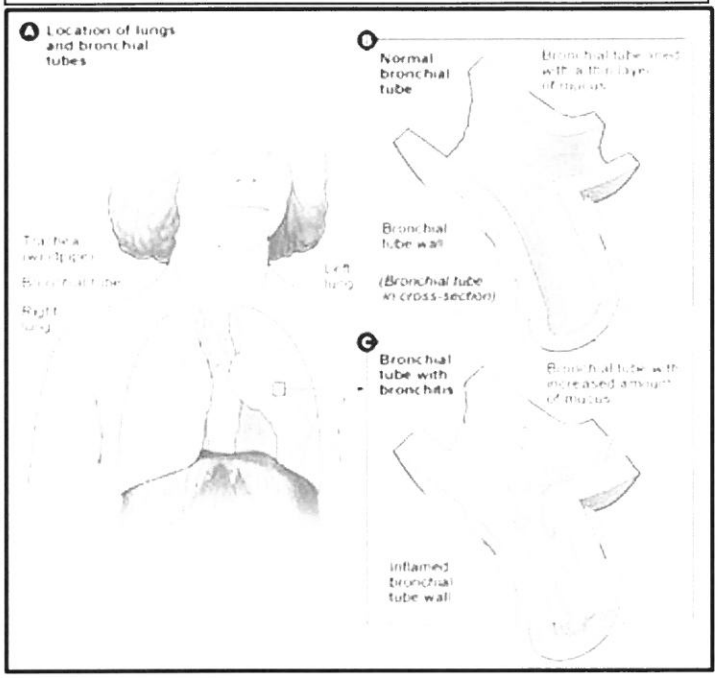
Chronic Obstructive Pulmonary Disease (COPD)

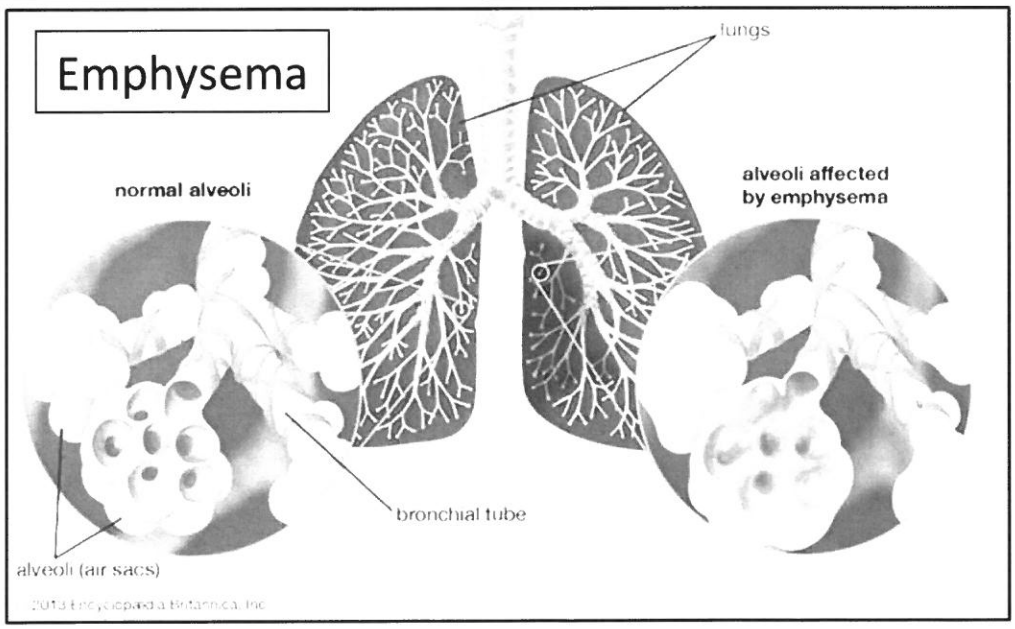


Several factors can contribute toward the development of chronic Bronchitis, these can include:

- **Cigarette smoking**
- **Occupational exposure**
- **Recurrent bronchial infections**

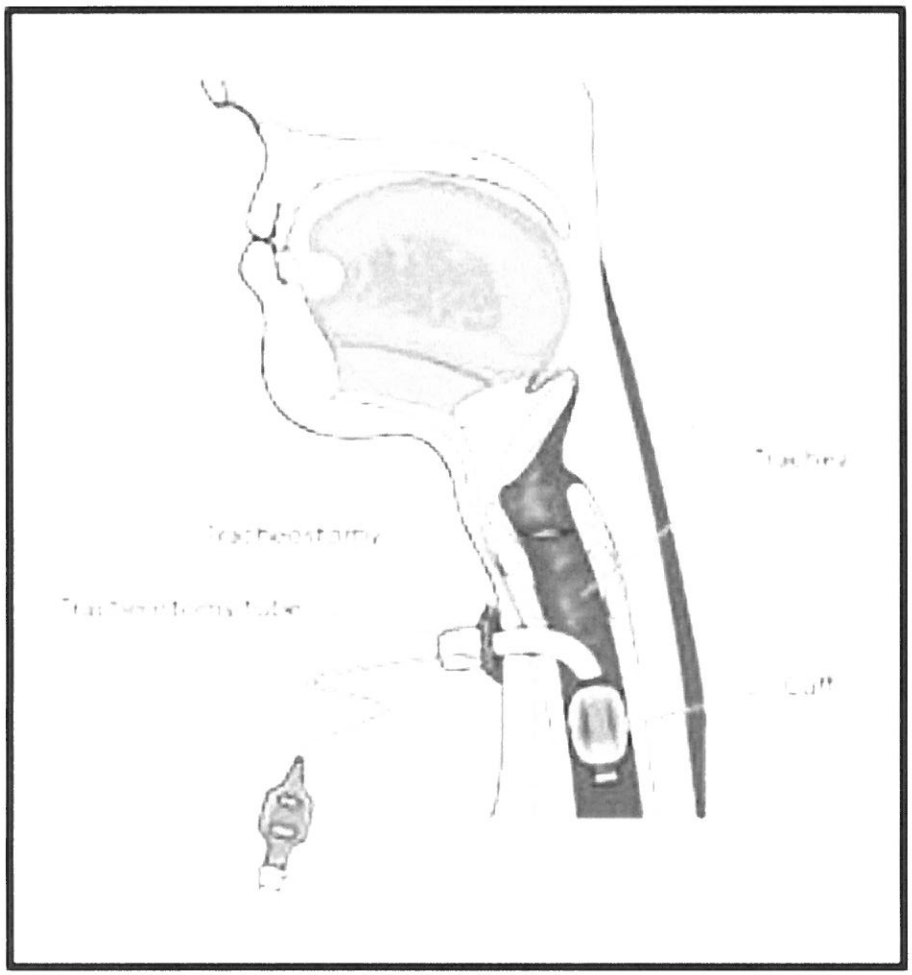
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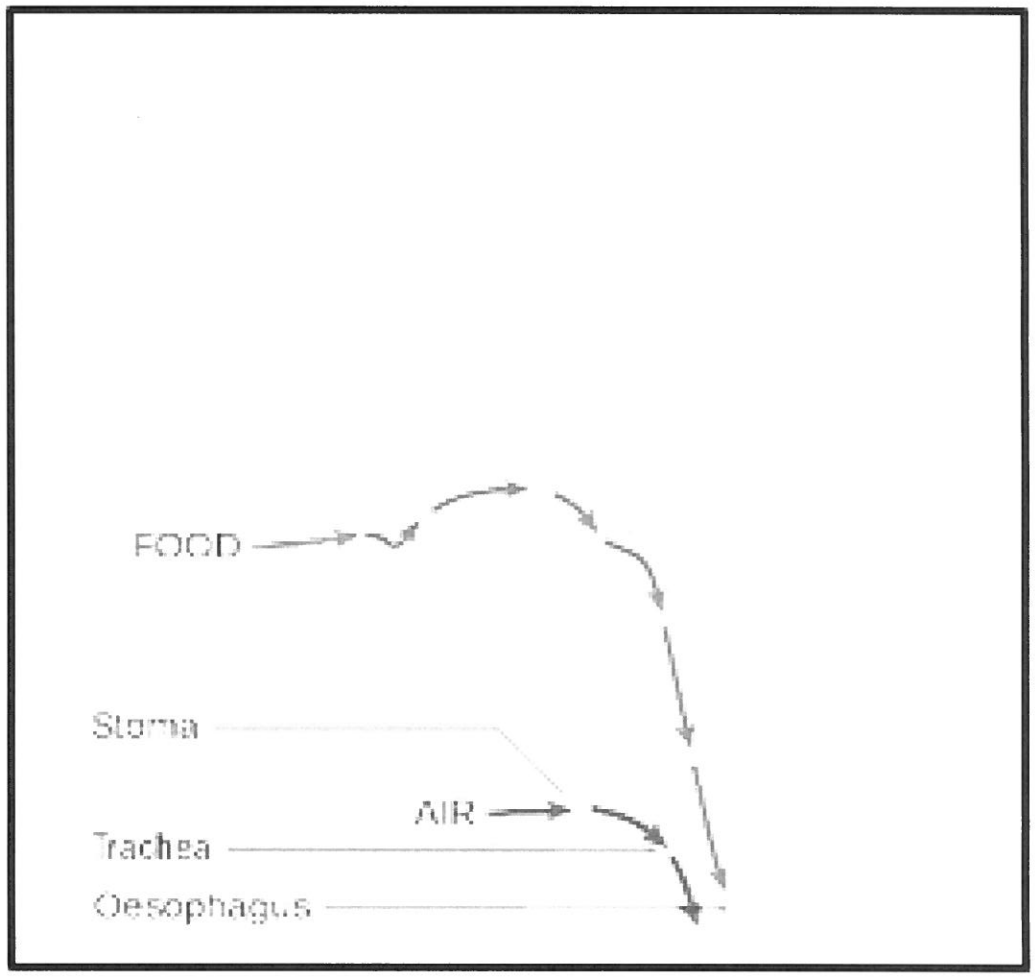


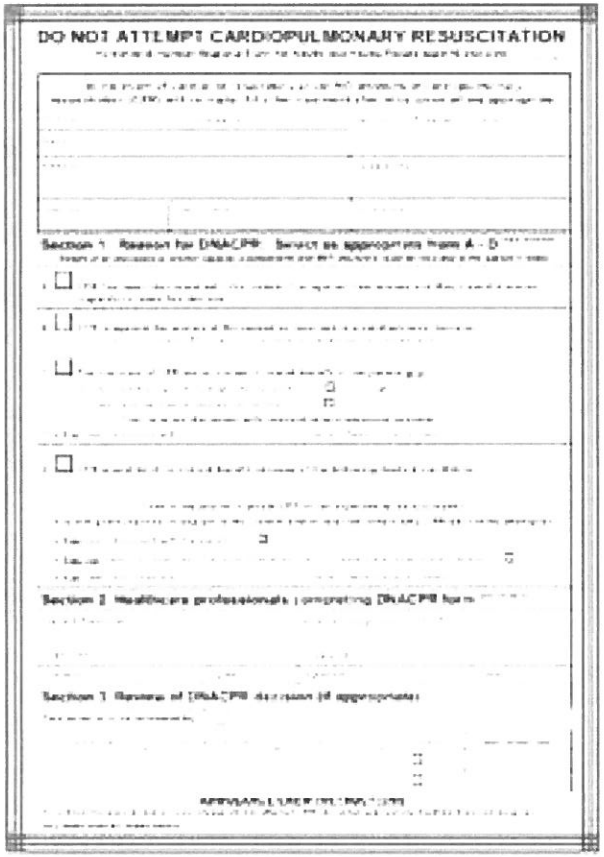
- The alveoli walls are destroyed by enzymes (proteases)
- Smoking can disrupt the protease balance. When this occurs protease destroy the alveoli, leading to a collapse of the airways, this causes airway obstruction.
- Small **blister like air pockets** can develop on the lung called '**bullae**'. This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

Tracheostomy

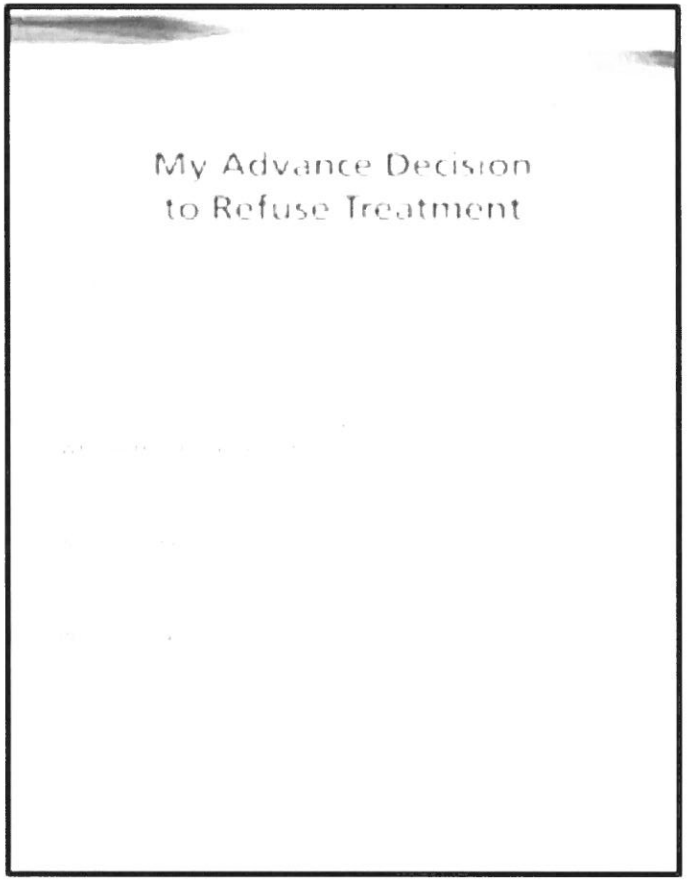


Laryngectomy

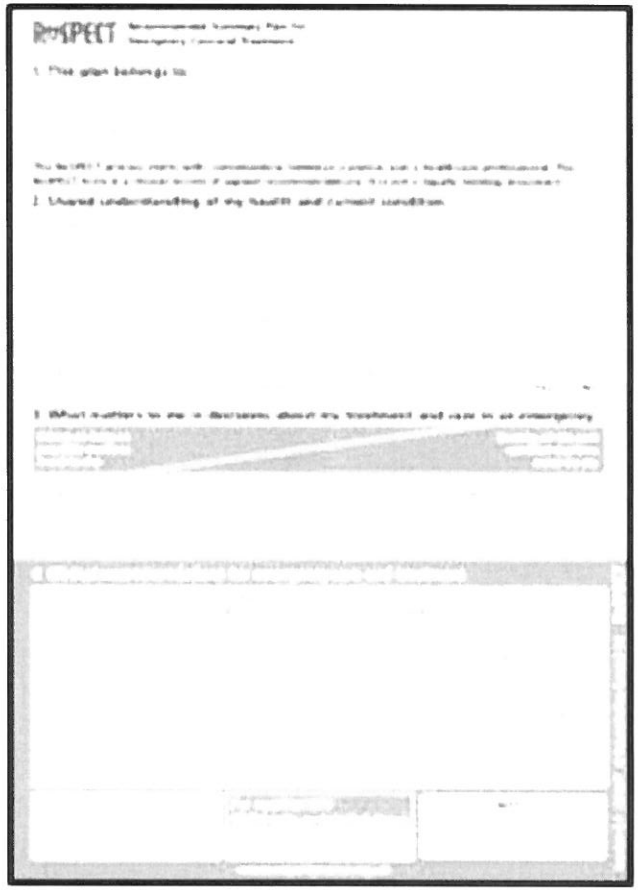




DO NOT ATTEMPT CARDIOPULMONARY RESUSCITATION



My Advance Decision
to Refuse Treatment



RESPECT

Lesson Assessment Form

Y Drindod Dewi Sant
University of Wales
Trinity Saint David

Trainee Name: Jan Johnston **Establishment** Maths HQ **Date:** 18/2/23

GRADE DESCRIPTORS: (When compared with an experienced teacher)

Very Good – An excellent awareness, understanding, and application of different approaches in planning and delivery of effective teaching and training.
Good – Comprehensive awareness, understanding and application of different approaches to the planning and delivery of effective teaching and training.
Satisfactory – Awareness, understanding and application of different approaches to the planning and delivery of effective teaching and training.
Development Required – Areas for improvement noted with recommendations for further development

Context of observation
(e.g.class, topic area, cohort)

Subject Knowledge	VG	G	S	DR
1 accuracy of knowledge of subject matter	✓			
2 understanding of context e.g. scheme of work, programme of study, learners	✓			

Lesson Planning and Preparation	VG	G	S	DR
1 detail and structure of plan	✓			
2 clarity and suitability of learning objectives	✓			
3 consideration of differentiation in relation to learners	✓			
4 resources selected, prepared, organised	✓			
5 consideration of professional standards	✓			
7 consideration of active learning, learner engagement and skills development	✓			

Teaching	VG	G	S	DR
1 lesson start, e.g. outlining content, aims and objectives	✓			
2 presentation: instructing, explaining, demonstrating	✓			
3 questioning skills	✓			
4 choice and variety of tasks/activities	✓			
5 variety and suitability of teaching strategies/methods/approaches	✓			
7 pace of lesson, use of time	✓			
8 lesson ending, e.g. summarising, recapping key points, etc.	✓			

Class Management and Control	VG	G	S	DR
1 presence and voice projection	✓			
2 transitions between activities/elements	✓			
3 awareness, vigilance and intervention	✓			
4 use of praise and encouragement	✓			
5 management of tasks/learners/work groups	✓			

Monitoring and Assessing Students' Progress	VG	G	S	DR
1 monitoring understanding and progress during lesson	✓			
2 suitability of assessment strategies/methods/approaches	✓			
3 assessing achievement of learning objectives	✓			
4 giving feedback and setting targets for progress	✓			

Effectiveness	VG	G	S	U
1 in setting high expectations for work	✓			
2 in conveying enthusiasm and challenging students	✓			
3 of students' engagement and learning in this lesson	✓			

Observer Signature: A Thomas

General Notes and Comments:

Planning and Preparation

As with previous observations, Jan is demonstrating an impeccable eye for detail within his preparation.

Comments on the session

A substantial amount of theory to cover on this session, which Jan has successfully intersed a range of pedagogies to break up the learning.
He dealt with a persistently 'disruptive' student very well, without isolating them from the group.
Some sensitive subjects and material within his presentation which he managed with ease.

Targets for Development

Nothing to note.
Well done and more of the same please!

Y Drindod Dewi Sant
University of Wales
Trinity Saint David

Lesson Assessment Form

Trainee Name: Jen Johnston **Establishment** Matrix HQ. **Date:** 19.02.2023

GRADE DESCRIPTORS: (When compared with an experienced teacher)

Very Good – An excellent awareness, understanding, and application of different approaches in planning and delivery of effective teaching and training.
Good – Comprehensive awareness, understanding and application of different approaches to the planning and delivery of effective teaching and training.
Satisfactory – Awareness, understanding and application of different approaches to the planning and delivery of effective teaching and training.
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Class Management and Control	VG	G	S	DR
1 presence and voice projection	✓			
2 transitions between activities/elements	✓			
3 awareness, vigilance and intervention	✓			
4 use of praise and encouragement	✓			
5 management of tasks/learners/work groups	✓			

Monitoring and Assessing Students' Progress	VG	G	S	DR
1 monitoring understanding and progress during lesson	✓			
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3 assessing achievement of learning objectives	✓			
4 giving feedback and setting targets for progress	✓			

Effectiveness	VG	G	S	U
1 in setting high expectations for work	✓			
2 in conveying enthusiasm and challenging students	✓			
3 of students' engagement and learning in this lesson	✓			

Observer Signature: [signature]

General Notes and Comments:

Planning and Preparation
A significant amount of kit required for this practical 'trauma' session. Very well organised + methodical planning.

Comments on the session
A very easy and effective teaching today from Jen. Is able to cascade his clinical knowledge to these new volunteers, in a manner which is fully inclusive. He adapts to a range of learning requirements within the group, and also keeps control of the whole environment during the practical session.
A very well blended session.

Targets for Development
Thoroughly enjoyed the control that Jen applies to his teaching. Very engaging, dynamic, whilst tailoring to a number of learning styles.
A born teacher. Well done Jen & good luck for your future!

Y Drindod Dewi Sant
UNIVERSITY OF WALES
Trinity Saint David

Lesson Assessment Form

Trainee Name: Ian Johnston **Establishment** Matrix HQ. **Date:** 16/2/23

GRADE DESCRIPTORS: (When compared with an experienced teacher)

Very Good – An excellent awareness, understanding, and application of different approaches in planning and delivery of effective teaching and training.
Good – Comprehensive awareness, understanding and application of different approaches to the planning and delivery of effective teaching and training.
Satisfactory – Awareness, understanding and application of different approaches to the planning and delivery of effective teaching and training.
Development Required – Areas for improvement noted with recommendations for further development

Context of observation
(e.g.class, topic area, cohort)

Subject Knowledge	VG	G	S	DR
1 accuracy of knowledge of subject matter	✓			
2 understanding of context e.g. scheme of work, programme of study, learners	✓			

Lesson Planning and Preparation	VG	G	S	DR
1 detail and structure of plan	✓			
2 clarity and suitability of learning objectives	✓			
3 consideration of differentiation in relation to learners	✓			
4 resources selected, prepared, organised	✓			
5 consideration of professional standards	✓			
7 consideration of active learning, learner engagement and skills development	✓			

Teaching	VG	G	S	DR
1 lesson start, e.g. outlining content, aims and objectives	✓			
2 presentation: instructing, explaining, demonstrating	✓			
3 questioning skills	✓			
4 choice and variety of tasks/activities	✓			
5 variety and suitability of teaching strategies/methods/approaches	✓			
7 pace of lesson, use of time	✓			
8 lesson ending, e.g. summarising, recapping key points, etc.	✓			

Class Management and Control	VG	G	S	DR
1 presence and voice projection	✓			
2 transitions between activities/elements	✓			
3 awareness, vigilance and intervention	✓			
4 use of praise and encouragement	✓			
5 management of tasks/learners/work groups	✓			

Monitoring and Assessing Students' Progress	VG	G	S	DR
1 monitoring understanding and progress during lesson	✓			
2 suitability of assessment strategies/methods/approaches	✓			
3 assessing achievement of learning objectives	✓			
4 giving feedback and setting targets for progress	✓			

Effectiveness	VG	G	S	U
1 in setting high expectations for work	✓			
2 in conveying enthusiasm and challenging students	✓			
3 of students' engagement and learning in this lesson	✓			

Observer Signature: A Thomas

General Notes and Comments:

Planning and Preparation
Clearly thought out and structured plan, with concise objectives.

Comments on the session
A very fluid, relaxed and controlled session that ran to the schedule.
A novel ice-breaker which was enjoyed by all.
An obviously astute and clinically minded teacher, that engaged the whole group.
A great blend of teaching methods

Targets for Development

None to make.

Lesson Assessment Form

Y Drindod Dewi Sant
UNIVERSITY OF WALES
Trinity Saint David

Trainee Name: Jen Johnston **Establishment** Mathry HQ **Date:** 17/2/23

GRADE DESCRIPTORS: (When compared with an experienced teacher)

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3 consideration of differentiation in relation to learners	✓			
4 resources selected, prepared, organised	✓			
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1 lesson start, e.g. outlining content, aims and objectives	✓			
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8 lesson ending, e.g. summarising, recapping key points, etc.	✓			

Class Management and Control	VG	G	S	DR
1 presence and voice projection	✓			
2 transitions between activities/elements	✓			
3 awareness, vigilance and intervention	✓			
4 use of praise and encouragement	✓			
5 management of tasks/learners/work groups	✓			

Monitoring and Assessing Students' Progress	VG	G	S	DR
1 monitoring understanding and progress during lesson	✓			
2 suitability of assessment strategies/methods/approaches	✓			
3 assessing achievement of learning objectives	✓			
4 giving feedback and setting targets for progress	✓			

Effectiveness	VG	G	S	U
1 in setting high expectations for work	✓			
2 in conveying enthusiasm and challenging students	✓			
3 of students' engagement and learning in this lesson	✓			

Observer Signature: [signature]

General Notes and Comments:

Planning and Preparation

Again, a very well prepared and thought out session.

Comments on the session

Great to see that learning is still happening during the first knowledge check. Good introduction of check ins for the learners – very visual.
Very natural an active session that was fully inclusive – learners appeared not to realise that they were being taught.
An awesome practical day – well done.

Targets for Development

None to make.

Ymddiriedolaeth GIG Gwasanaethau Ambiwlans Cymru

Welsh Ambulance Services NHS Trust

Community First Responder Initial Training
Day One 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:

- ✓ Demonstrate correct use of the Manger Camel Lifting Equipment when assisting a non-injury faller.
- ✓ Demonstrate the appropriate and safe techniques to deescalate or escape from a conflict situation.
- ✓ Have an understanding of equipment carried by a Community First Responder.
- ✓ Demonstrate an appropriate systematic patient assessment of an adult patient.
- ✓ Recognise Normal Airway and demonstrate the correct management of a compromised airway.

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 5 – Ice Breaker	**Group work – Ice Breaker** Icebreaker- Instructions discretion of how this is run. Suggested for students to share their name, area they will be covering, current day job, why they want to be a CFR and previous medical experience.	Look, listen, ask questions.	Power Point, V1.
Slide 6 – 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 7 – Safer Handling	**Group work – Safer Handling** Students will have covered the theory and underpinning knowledge in the pre-learning. Manual handling stations set out with printed laminates of all manual handling techniques. Split into groups where they read the laminated handout. Each lift should be demonstrated by staff or current responder, then practiced by the students. Push/Pull should be discussed.	Look, listen, ask questions, Demonstrate.	Power Point, V1.

	See appendix 1- Safer Handling Laminates **3, 2, 1 person transfer** **Basic lift** **Partial squat** **Tripod lift** **Power lift** **Golfers lift** **Manual handling sign offs to be completed.**		
Slide 11 – Conflict Resolution	**<u>Group work – Conflict Resolution</u>** Students will have covered the theory and underpinning knowledge in the pre-learning. Safety briefing- Ask all students to remove watches etc and remain bare below the elbow for the session. Warn students that glasses and hearing aids may need to be removed for some techniques. Remind students- during all activities, please listen to the tutor and follow only their directions. The command STOP is to everyone in the room and MUST be acted upon immediately. Only use up to 40% effort in all training activities. Report any potential injuries to the tutor immediately. Respect all of your colleagues and their wishes e.g., personal space. Warm up- The warm up should not be excessively long - approximately 12 to 15 minutes of balanced exercises should suffice, with a systematic approach. Starting at the head or feet and working through the body to the opposite end. For example, only if you are able to, • Move head / neck from side to side. • Shake the hands and feet. • Move all your limbs through their whole RoM.	Look, listen, ask questions , Demonstrate	Power Point, V1.

	• Gentle stretch these muscles through their RoM. Students should be encouraged to run, talk or try to de-escalate the situation where possible. Their safety is paramount. Where breakout techniques are necessary only reasonable force should be used. Students must be told to follow the PLAN- all techniques must be: P-Proportionate L-Legal A-Accountable N-Necessary Demonstrate and practice- passive posture (low guard) and active posture (high guard) Breakout techniques: See train the trainer notes for techniques. Single wrist grab Double wrist grab, one arm Double wrist grab, two arms Clothes grab, single hand Clothes grab, two hands Hair grab, top of head Hair grab, long hair Strangle hold, from the front Strangle hold, from the side (headlock) Strangle hold, from behind 1 Strangle hold, from behind 2 (colleague release) See trainers notes		
Slide 9 – Break	15 Minute Break		Power Point, V1.

Slide 10	**<u>Group work – Non-injury Faller</u>** Handout iSTUMBLE laminates (Appendix 2) Falls Response Model The Falls Response model consists of three broad categories; uninjured, possibly injured, injured. We have developed a model that recognise that not all falls will require an emergency ambulance response and that many people who have fallen do not need to be conveyed to hospital. A Level One response is described as a Falls Assistant (Community First Responder). The assistant attends the patient to pick them up safely from the floor and undertake a further assessment of the situation. Handout laminates- talk through iSTUMBLE, discussion over differences between a collapse and a fall. Students must be taught to complete a set of observations prior to moving a patient, including a head-to-toe to look for injuries. Distracting injuries should be explained and discussed. Introduction to Mangar Camel. Maximum lifting weight 50 stone / 320kg. • Position the Camel at the side of the patient so that the patient's head is level with the Camel badge NOTE: Place a blanket, groundsheet, towel or similar under the Camel if using it on a rough surface. • Ask the patient to transfer the onto the Camel. The head should lie on the Camel badge and the body should lie centrally.	Look, listen, ask questions Demonstration.	Power Point, V1.

	• Switch the Airflo 24 to 'On', warning the patient that it will be noisy. • Press the number 1 button on the hand control to partially inflate the backrest section until the patient is in a comfortable position • Press the number 2 button to inflate the bottom section until it becomes rigid • Continue to press buttons 3 and 4 in sequence until the sections become rigid • Press button 1 to fully raise the backrest and arrive at a sitting position • Ensure the patient has somewhere to transfer to from the Camel Note: the cushion must be supported as the patient rises as it is light and may move • WARNING: In order to maintain stability, sections must always be fully inflated from the bottom up, in sequence. • Note: only the backrest (section 1) may be partially inflated before the lower sections. • Demonstrate the slow and rapid deflation of the cushions and when appropriate Note: the patient must be supported on deflation to avoid falling • Give explanation of cleaning of the Mangar Camel with Clinell wipes, storage, and charging. Students to practice using Mangar Camel under instructors supervision, using laminates to assess patient prior to lifting. Sign offs to be completed.		
Slide 11 – Kit Introduction	**<u>Group work – Kit introduction</u>** Ask the students to work in pairs, each pair should have a response bag and enhanced kit bag. Sitting in a circle, go through the bag and	Look, listen, ask questions.	Power Point, V1.

	its contents allowing time for the students to work through the equipment. Demonstrate the ergonomics of the response bag as a holdall and backpack, with waist strap. Work through contents and layout of the response and enhanced kit bags- see appendix 3. Demonstration of ePCR, show the students the back-up paper version of the PCR. Allow students to practice inputting obs and patient details. This will be practiced more throughout the course. **Sign offs to be completed.**		
Slide 11 – Oxygen Cylinder Features	Describing the Oxygen Cylinder Features. • Ensure labels remain clearly visible at all times. • Lasts for 30 minutes at 15l if full • Do not refill or tamper with cylinders. • Do not use oil or grease (including hand creams) near cylinders. • Do not clean cylinders with products containing ammonia or chlorine. • Display warning sign in vehicle when carrying	Look, listen, ask questions.	Power Point, V1.
Slide 13	Learning outcomes – Patient Assessment ✓ Describe the CABCDE approach to initial casualty assessment ✓ Explain factors that affect airway, breathing, circulation and neurological function ✓ Describe procedures of a secondary survey ✓ Describe procedures of a History take to include: ✓ -SAMPLE	Look, listen, ask questions.	Power Point, V1.

	✓ -SOCRATES		
Slide 14	Introduction into systematic approach to patient assessment and the CFR incident Algorithm.	Look, listen, ask questions.	Power Point, V1.
Slide 15-16 – Dangers	Describe dangers found in the prehospital environment. SCENE Assessment.	Look, listen, ask questions.	Power Point, V1.
Slide – 17- 33 - Primary Survey	Primary Survey 60-90 seconds. If you find an issue you don't move on until you have corrected it Cat Haem- blood on the floor + 4 more. Consider the surface they are on, is it absorbent? Is the blood loss greater than it looks? Consider mechanism, internal haem, or aneurysms. Consider blood loss in the chest, abdomen, pelvis and long bones. Airway- Always check an airway prior to opening it. Check the lips, teeth, tongue and throat. Look for swelling, bleeding, soot, vomit, secretions, etc Breathing- Listen (without putting your face next to the patients mouth) look down their chest and if necessary put a hand on their chest/abdo to feel for breathing. This should be for 10 seconds, and during this time they should take 2 breathes. If no breathing or agonal breathing, commence CPR. If they are breathing but not adequately you will need to support ventilations. Circulation- Consider circulation to skin, by looking at the colour of their limbs. Feel for central pulse for 10 seconds, to check if its present. Disability- You will have already considered this during your AVPU assessment. Assessing the patients level of consciousness, or how awake they are. There are many causes of unconsciousness, these are covered in another module. During the primary survey consider	Look, listen, ask questions.	Power Point, V1.

	these causes and if you can correct them at this time, such as blood sugars and pupils. Exposure/Environment- This is a quick head to toe assessment, to look for possible injury or illness, such as broken limbs or rashes. You will undertake a full head to toe assessment during your secondary survey. Be mindful of patient privacy and dignity during this process. Consider the environment you are in, such as extremes of temperature.		
Slide 34-35– Pain Assessment	Discuss pain assessment and give example of AOCRATES assessment tool.	Look, listen, ask questions.	Power Point, V1.
Slide 36-37 – Reassessment and handover	Demonstrate a ATMIS handover		
Slide 38 – 39 – Consent	***Partnership*** Consent is a partnership between the patient and the person providing care, so that decisions about treatment are made together. The patient then agrees to treatment and informed consent to treatment is given. Whatever the context in which the healthcare decision is made there must be a partnership between the person providing care and the patient. To do this it is necessary to: -Listen to patients and respect their views about the management of their condition -Discuss with patients what their condition means -Share with patients the information they need to make decisions about the management of their condition -Respect patients' decisions. *Legal Issues* Consent has to be valid in healthcare. Valid consent applies to first aid, ambulance care and transportation.	Look, listen, ask questions.	Power Point, V1.

	VALID This is the voluntary and continuing permission of the patient to be given a particular treatment. It is VALID only if given by an informed person with capacity to consent (Capacity is explored later in the session) *Informed* This means the patient has given consent only after they have been advised of all relevant facts and risks. Consent can only be given by a patient who has capacity to do so. It is of a specific duration. The length of time for consent usually remains until withdrawn by the patient. If the patient does withdraw consent, new information must be given before consent can be regained. Consent can only be obtained by the person actually treating the patient, so another first aider cannot gain consent and then pass on care. The next first aider would also have to gain consent. If working together (e.g. in a pair) then consent is valid for everyone present when consent is obtained – however if care is handed over to another then consent must be obtained again. ***Refusal*** It is not uncommon for patients to refuse care or treatment. Provided they have capacity a patient can withdraw consent at any time. This must be recorded on the patient report form. ('Capacity' is explored later in the session) A patient's decision to refuse the proposed treatment is to be respected even if you think the decision is wrong or irrational. Concerns should be communicated clearly to patients and the possible consequences of their actions outlined but no pressure should be exerted *Unobtainable*		

	Patients can be treated without consent in an emergency if it is not possible to obtain consent. In this case the treatment must be necessary to save life or prevent deterioration of the presenting condition. Any treatment given must comply with current best practice in the management of that condition. In most cases of first aid and ambulance care the patient's condition is non-life-threatening, and this session will explore the principles for best practice in making decisions and obtaining consent. **Types of consent** It does not matter how a patient gives consent. A signature on a form does not in itself prove that consent is valid Before accepting a patients' consent to treatment of the presenting condition, consideration must be taken of whether relevant information has been communicated and how well the details and implications of what is proposed have been understood by the patient. This is more important than how consent is expressed or recorded. Consent can be: Implied Verbal Written **Implied consent** In the case of routine investigation or clinical monitoring patients can give implied consent e.g. rolling up the sleeve for blood pressure measurement **Oral consent** In cases of minor treatment and routine monitoring it is usually sufficient to have verbal consent. This will be the method of choice for the majority of first aid treatments. Consent must be recorded on the patient report form (PRF) **Written consent**		

	In cases that involve higher risk it is advisable to obtain written consent. This is so that everyone involved understands what was explained and agreed. If it is not possible to obtain written consent in a case when it is thought desirable e.g. in an emergency or if the patient needs treatment to relieve severe pain or distress it is acceptable to rely on verbal consent. However patients must still be given the information they might want or need to make a decision and the fact that they have given consent should be recorded on the PRF **Refusal** Adult patients are entitled to refuse treatment even when it would benefit their health. The only exception to this is when the treatment is for a mental disorder and the patient is detained under the Mental Health Act 1983 A pregnant woman is entitled to refuse treatment even if this is likely to be detrimental to the unborn baby		
Slide 40-41	Lunch and Recap of learning.	Look, listen, ask questions.	Power Point, V1.
Slide 42 – Airway management	**<u>Group work – Airway Management</u>** Demonstrate correct procedure for Airway Management. *Cover stepwise approach to airway management.* *Positioning- recovery position* *Suction* *Airway Manouvres* *Paeds* *BVM* *OPA* *NPA* *iGel* *Give out airway logs*	Look, listen, ask questions.	Power Point, V1.

	"Establishing and maintaining a patent (open) airway and ensuring effective oxygenation and ventilation are vital aspects of effective patient care. Attempting to stabilise a patient whose airway is compromised is futile. No airway, no patient - it is that simple!" Nancy Caroline's Emergency Care in the streets (7th Edition) JRCALC (Joint Royal Colleges Ambulance Liaison Committee) Recommends the using a stepwise approach to airway management, including a strategy on how and when to progress from one airway technique to another. It is important to note that this approach is not one way and if the technique is failing, then it is sometimes appropriate to move to a less advanced technique. The following flow chart shows the stepwise approach to airway management. In General, you will start with basic airway manoeuvres such as Head tilt - chin lift. Depending on the patient's condition and potential threats to their airway, you may elect to escalate their management to include airway adjuncts such as OPA/NPA or may progress to intubation. Ambulance Care Practice (2019)		
Slide 43	Airway stations should be set up for students to practice each airway technique. Competent volunteers can man each station to assist. Then students should be assessed on each technique by a member of staff. Station 1: Recovery position. Airway Manoeuvres, BVM ventilations- all ages Station 2: OPA NPA Station 3: iGel. Airway setup.	Look, listen, ask questions.	Power Point, V1.

	See Appendix **5** for assessors sheet. This should be signed off in their assessment sign offs. See appendix **6** for Station laminates		
Slide 44 – Wellbeing checklist – close	✓ Complete wellbeing checklist	Look, listen, ask questions.	Power Point, V1.

Ymddiriedolaeth GIG
Gwasanaethau Ambiwlans Cymru

Welsh Ambulance Services
NHS Trust

Welcome / Croeso



Community First Responder

Initial Training

Day One

Housekeeping

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



Order of the day

Paperwork and Sign offs

Knowledge Check

Manual Handling

Conflict Resolution

BREAK

Non-Injury Fallers

Kit Introduction

Patient Assessment

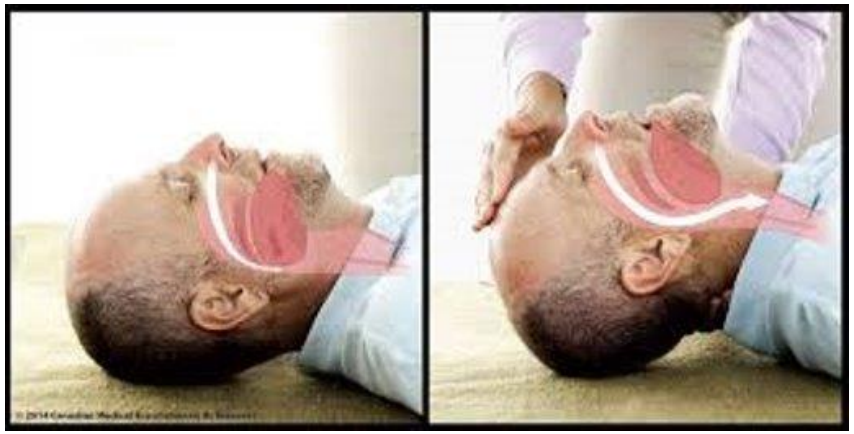
LUNCH

Recap

Airway Management

Practice Time

CLOSE





Learning Outcomes

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

- Demonstrate correct use of the Manger Camel Lifting Equipment when assisting a non-injury faller.

  Demonstrate the appropriate and safe techniques to deescalate or escape from a conflict situation.

  Have an understanding of equipment carried by a Community First Responder.

  Demonstrate an appropriate systematic patient assessment of an adult patient.

  Recognise Normal Airway and demonstrate the correct management of a compromised airway.



Learning Outcomes:

By the end of the day volunteers will be able to:

Demonstrate correct use of the Manger Camel Lifting Equipment when assisting a non-injury faller.

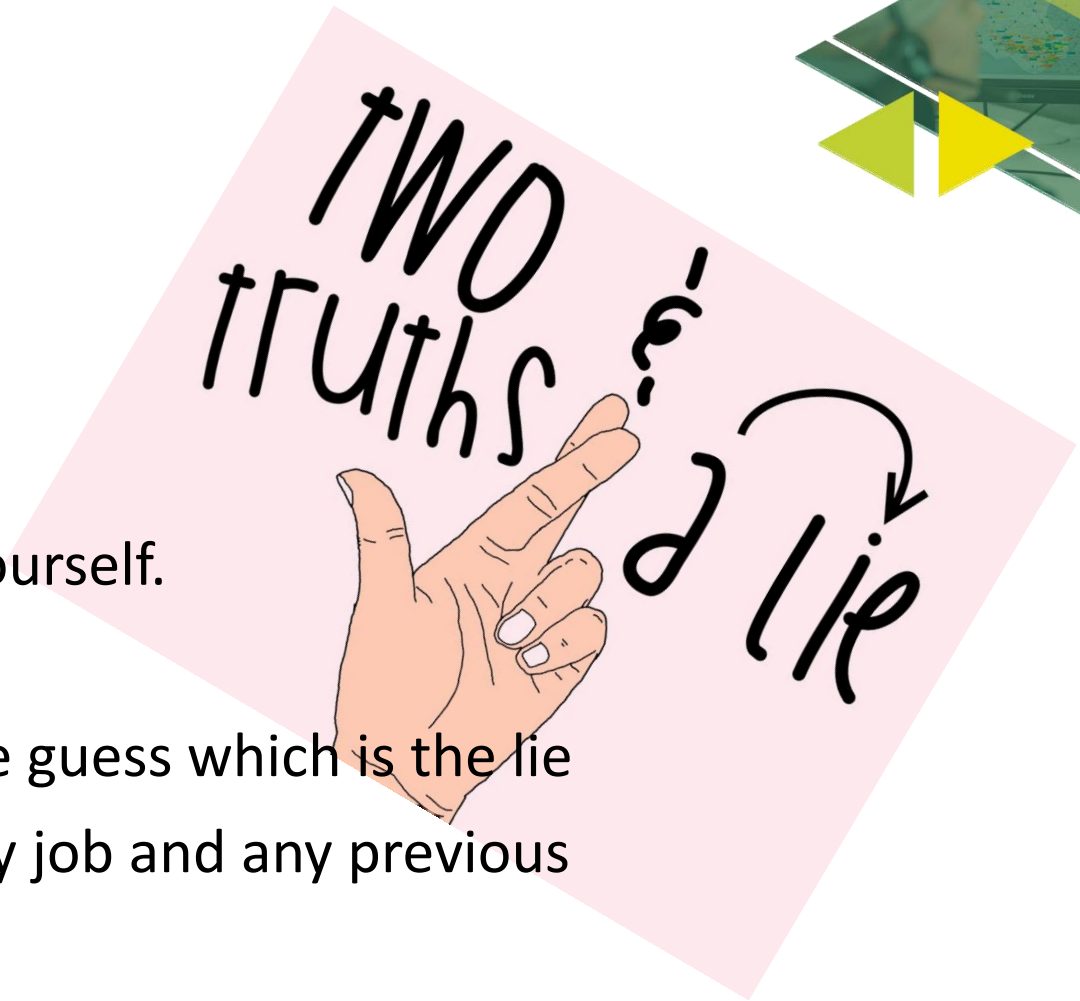
Demonstrate the appropriate and safe techniques to deescalate or escape from a conflict situation.

Have an understanding of equipment carried by a Community First Responder.

Demonstrate an appropriate systematic patient assessment of an adult patient.

Recognise Normal Airway and demonstrate the correct management of a compromised airway.

Ice-Breaker



- Please take a piece of paper and a pen.
- Write your name, 2 truths and 1 lie about yourself.
- Put it into the box
- Take it in turns to read them aloud, while we guess which is the lie
- Then, tell us about yourself, include your day job and any previous medical experience



Knowledge Check-Induction

Safer Handling



Group Work



Conflict Resolution

Group Work



Break Time



Non-Injury Fallers

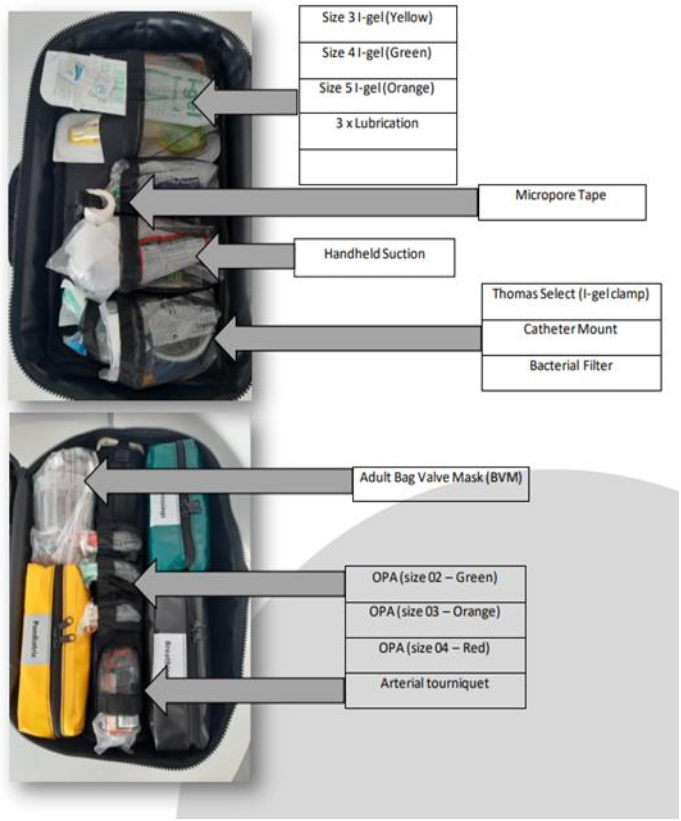
Group Work



Kit Introduction and Oxygen Therapy

Group Work

Welsh Ambulance Service NHS Trust – Volunteer First Responder Equipment Layout



Welsh Ambulance Service NHS Trust – Volunteer First Responder Equipment List
Enhanced Skills Modular bag

The new modernised modular style 'Volunteer First Responder' response bag will have a standardised layout, an approved equipment list and a pan-Wales approach. No additional equipment should be carried in these bags.

The Enhanced Skills Modular bag does not replace the First Responder bag; this must also be taken to the patient's side.

These items can only be used by trained volunteers.



Enhanced Skills (Silver Module Bag)	
Pulse Oximeter (SpO2)	
Automatic Blood Pressure Cuff	
Glucometer	
Tympanic thermometer	
Pen Torch	

Enhanced Skills (Medication)	
Paracetamol	



Cylinder Features.

Cylinder features.





Learning Outcomes

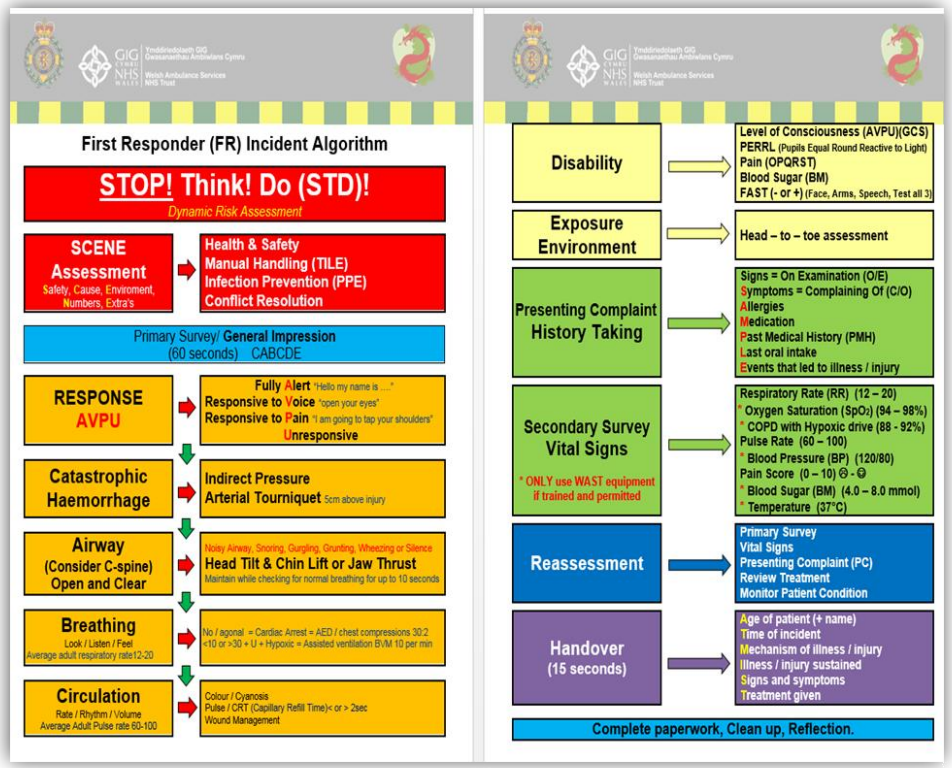
By the end of this session you should be able to:

- Describe the CABCDE approach to initial casualty assessment
- Explain factors that affect airway, breathing, circulation and neurological function
- Describe procedures of a secondary survey
- Describe procedures of a History take to include:

-SAMPLE

-SOCRATES

Patient Assessment



Primary Survey
- Dangers
- Response
- ABCDE Approach

Secondary Survey
- Top to Toe Assessment
- Vital Signs

History Taking
- SAMPLE
- SOCRATES

Reassessment
- Repetitive Systematic Approach

Consent
- Implied, verbal, written, refused

SCENE Assessment

Safety
- Your safety
- Safety of those around you

Cause
- MOI
- What's happened?

Environment
- Where are you?
- Who/what's around?

Numbers
- How many patients?
- STEPS 123+

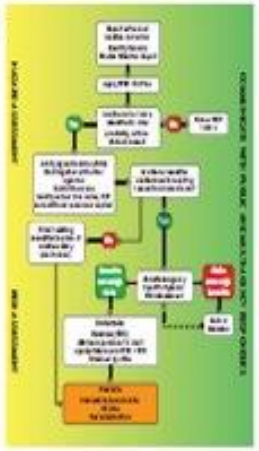
Extra Resources
- Have you called for back up?
- What help do you require?

Dangers



+ PLUS

PLUS means follow the CBRN First Responder Flow Chart to consider what actions can be undertaken to save life, using the following principles:

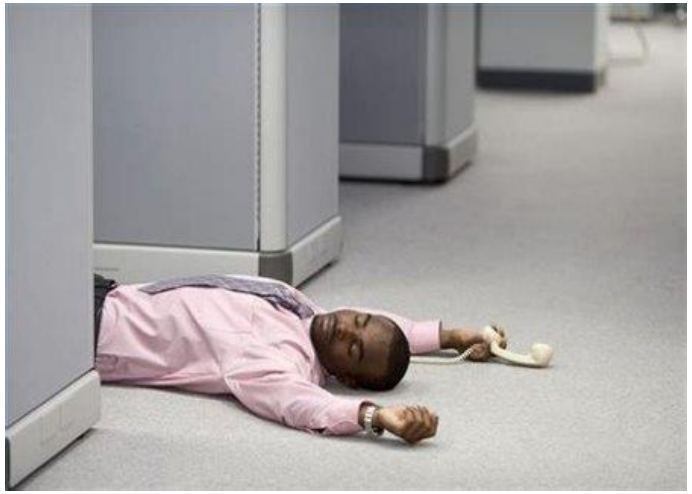


- **Evacuate** – Get people away from the scene of contamination.
- **Communicate and Advise** – Give immediate medical advice and reassurance that help is on its way.
- **Disrobe** – Remove clothing.
- **Decontamination** – Dry decontamination should be the default process.



Dangers

- Global overview
- What position is the patient in?
- What is their colour?
- Can you hear breathing?
- What is their age, gender and ethnicity?
- Anything unusual, smells, sounds, temperature of the room?



Use all your senses to help build the picture!

Primary Survey

General impression (60 seconds)

AVPU

Catastrophic haemorrhage

Airway (consider c-spine)

Breathing

Circulation

Disability

Expose / **E**nvironment

Repetitive
Systematic
approach

To rate the LOC we use the acronym AVPU.

- **A** Alert, the patient looks at you/ is aware of your presence
- **V** Verbal, patient opens their eyes when asked (you may have to shout)
- **P** Pain, patient opens their eyes to a painful stimulus (shoulder squeeze)
- **U** Unresponsive

Clinical Assessment

Catastrophic Haemorrhage

Blood on the floor and 4 more

- chest
- abdomen
- pelvis
- long bones

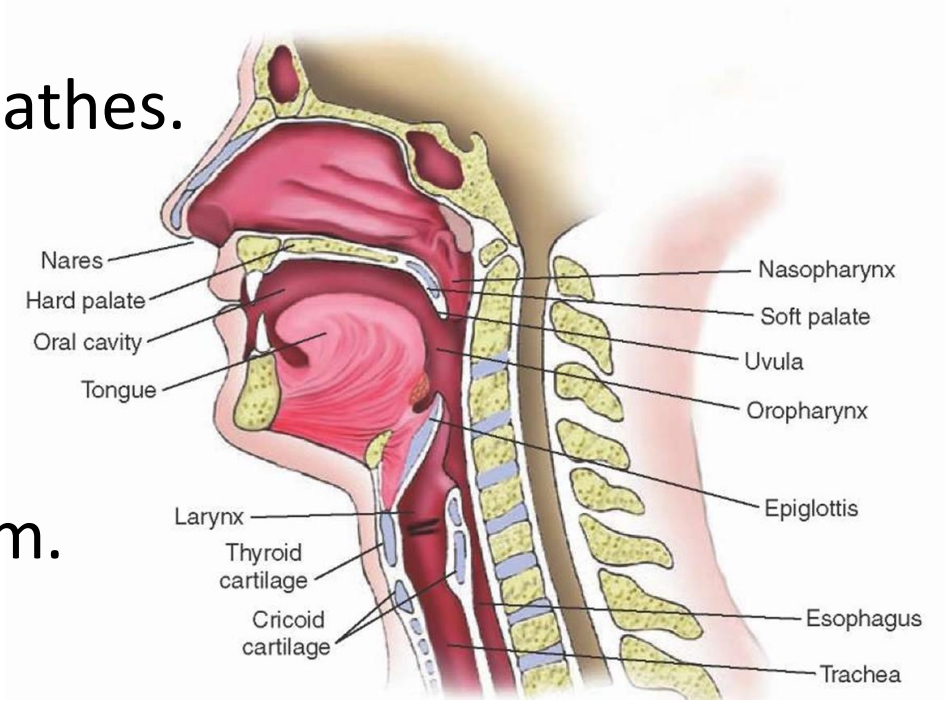


Identify a catastrophic haemorrhage early, considering MOI and use a stepwise approach to stop blood loss.

Assessment of the airway involves three steps:

- **Look** for signs of airway obstruction.
- **Listen** for noisy or absent breathing.
- **Feel** for air movement as the patient breathes.

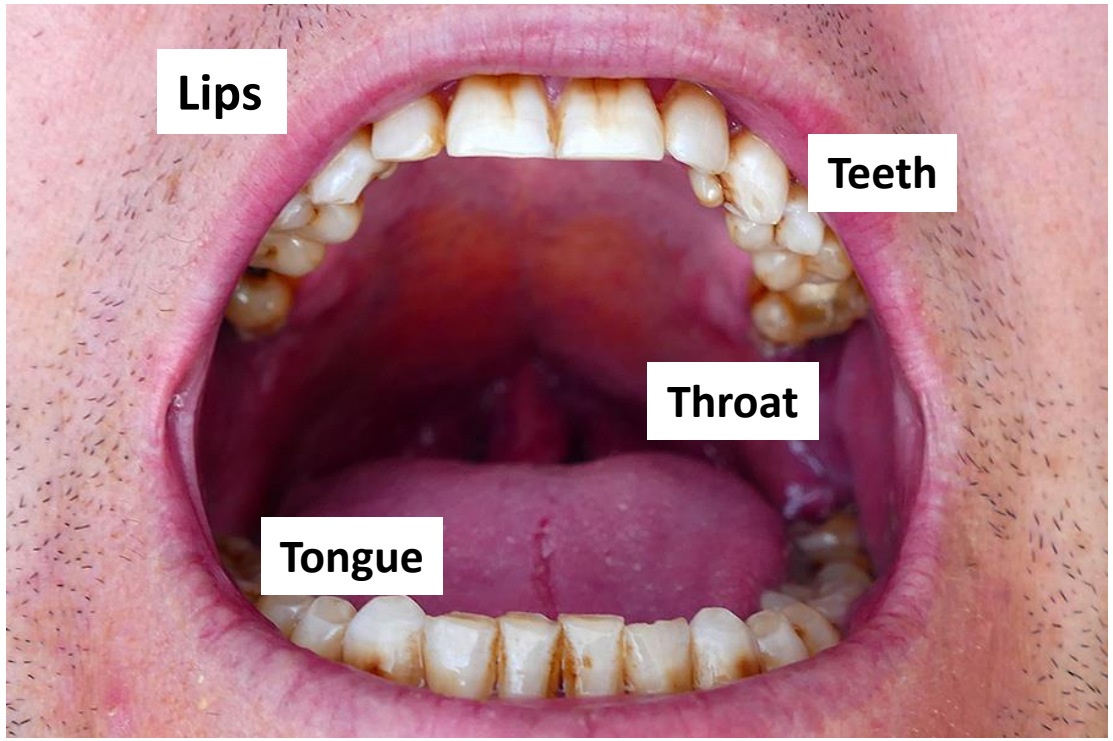
If the patient is not managing their own airway, it will need to be managed for them.



Look:

The airway should be looked into prior to opening to ensure it is patent.

Think:



Consider:
Colour
Swelling
Soot
Dentures
Trauma
Blood
Vomit
Secretions
Foreign bodies

The Blocked Airway

Listen – for sounds of obstruction

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

Feel – for movement of air

The airway can be obstructed in 4 main ways:

Kinked



Cut



Crushed

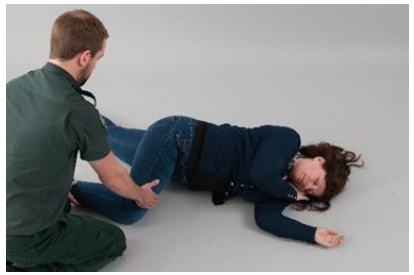
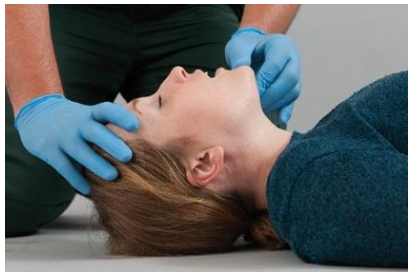


Blocked



Step-wise Airway Management

- Airway Clear? Use Suction/postural drainage (recovery position)
- Head tilt/chin lift
- Jaw thrust (neck injury)
- Triple Airway Manoeuvre
- Oropharyngeal Airway Insertion (OPA)
- Nasopharyngeal Airway (NPA)
- iGel



Clinical Assessment
Breathing

- Once the airway is open, you are ready to move onto breathing.
  Again LOOK, LISTEN and FEEL.



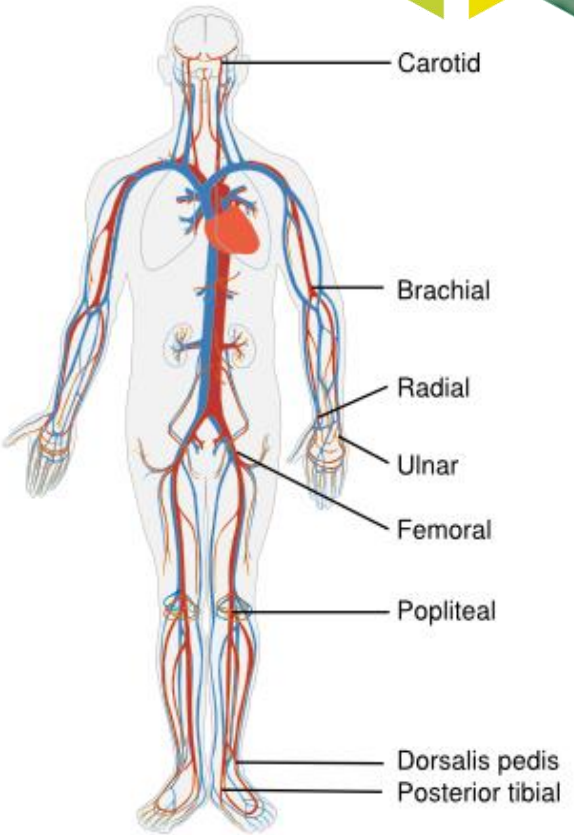
- Is it adequate to support life?
- A normal rate is between 12-20 breathes per minute.
- Less than 10 or more than 30 you may have to assist the patient with their breathing.
- Consider agonal or ineffective breathing

Circulation

You can obtain a good idea of the patient’s circulation by looking at the colour of their face and limbs. Pale or blue extremities may be an indication of poor circulation. Consider the patient's ethnicity.

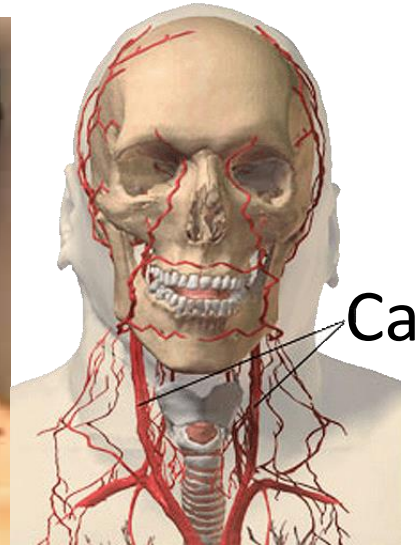
Pulses can be found at the wrists and neck, when a patient is hypotensive (low blood pressure) the pulses at the wrist may disappear.

- Normal is 60-100 beats per minute.



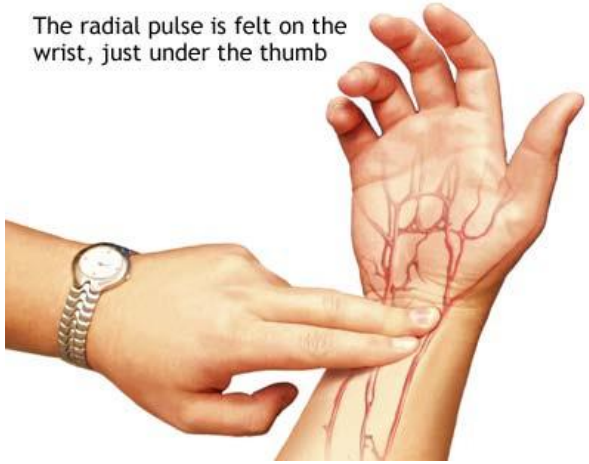
Circulation – Taking a Pulse





Carotid





Regular Rhythm – feel for 15 seconds then times by 4

Irregular Rhythm – count for full 60 seconds

Capillary Refill Time-CRT

To check blood flow at the extremities, we can press on the nail bed for 5 seconds. When we release, the colour (blood) should return in less than 2 seconds. If it is extended, it shows the patient has poor circulation at this time.



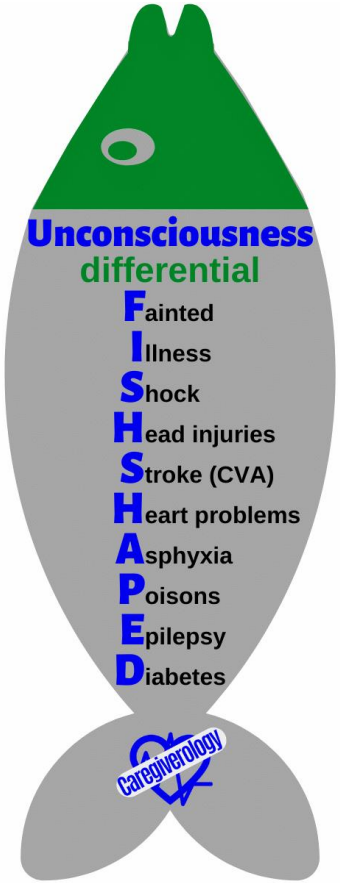
Clinical Assessment
Disability

This refers to the patient's level of consciousness, or how awake they are.

We can look at 3 aspects of the patient under 'disability'

- ✓Level of consciousness
- ✓Pupils
- ✓Blood sugar

Please note pupils and blood sugars are covered in a later session



Clinical Assessment

Expose

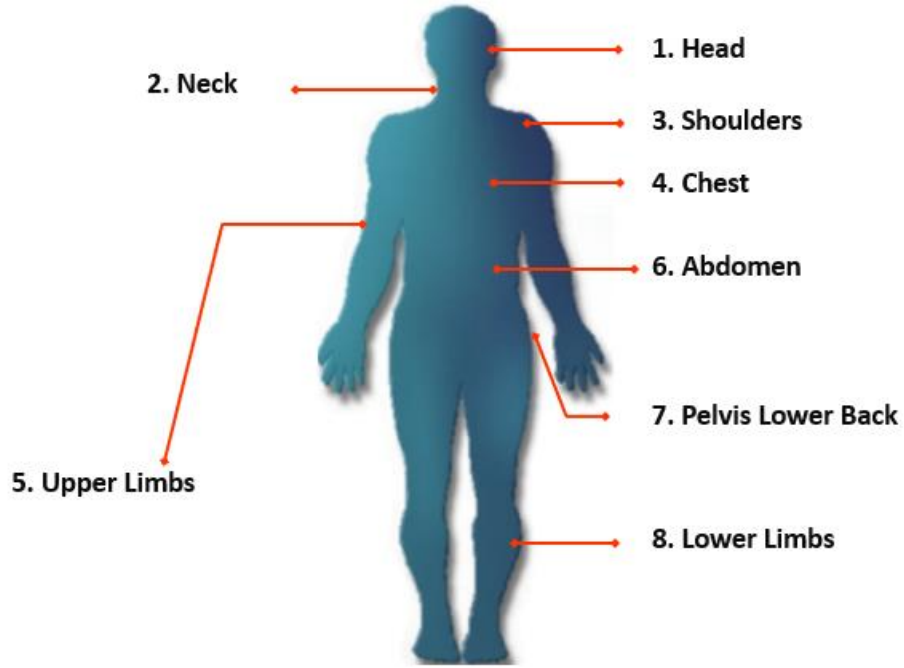
Environment

You will undertake a full head to toe assessment under the secondary survey.

This is a quick look early on that will give you clues to obvious injuries/illness that need to be managed quickly.

Look for:

- ✓Hidden bleeding.
- ✓Unusual rashes.
- ✓Deformed limbs.



Clinical Assessment





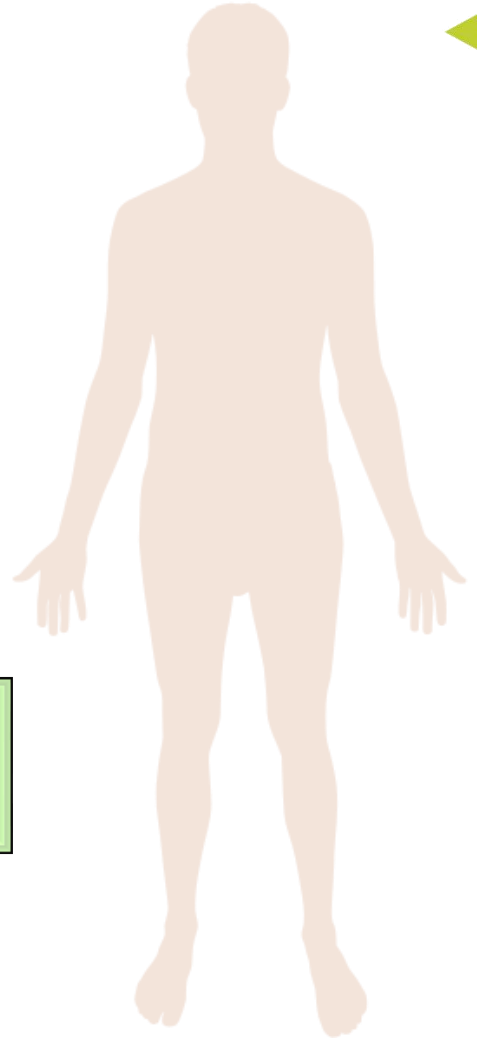




Secondary Survey (unconscious patient)

Starting at the head, move methodically down the body using your sense of touch, sight and smell.

- Recovery Position?
- Head
- Pupils
- C-spine
- Chest
- Arms/Wrists/Hands
- Abdomen
- Pelvis
- Legs/Feet.



Remember!
- Record any findings
- Check for medical bracelets

Recovery Position

Indications

- a spontaneously breathing and unconscious patient without a spinal injury.

Contra-Indications

- Patients with spinal Injury
- Patients who require assisted ventilations or advanced airway management.

Advantages

- Simple and quick procedure for single rescuer
- No equipment required
- Allows for postural drainage of secretions or vomit from the patients mouth.

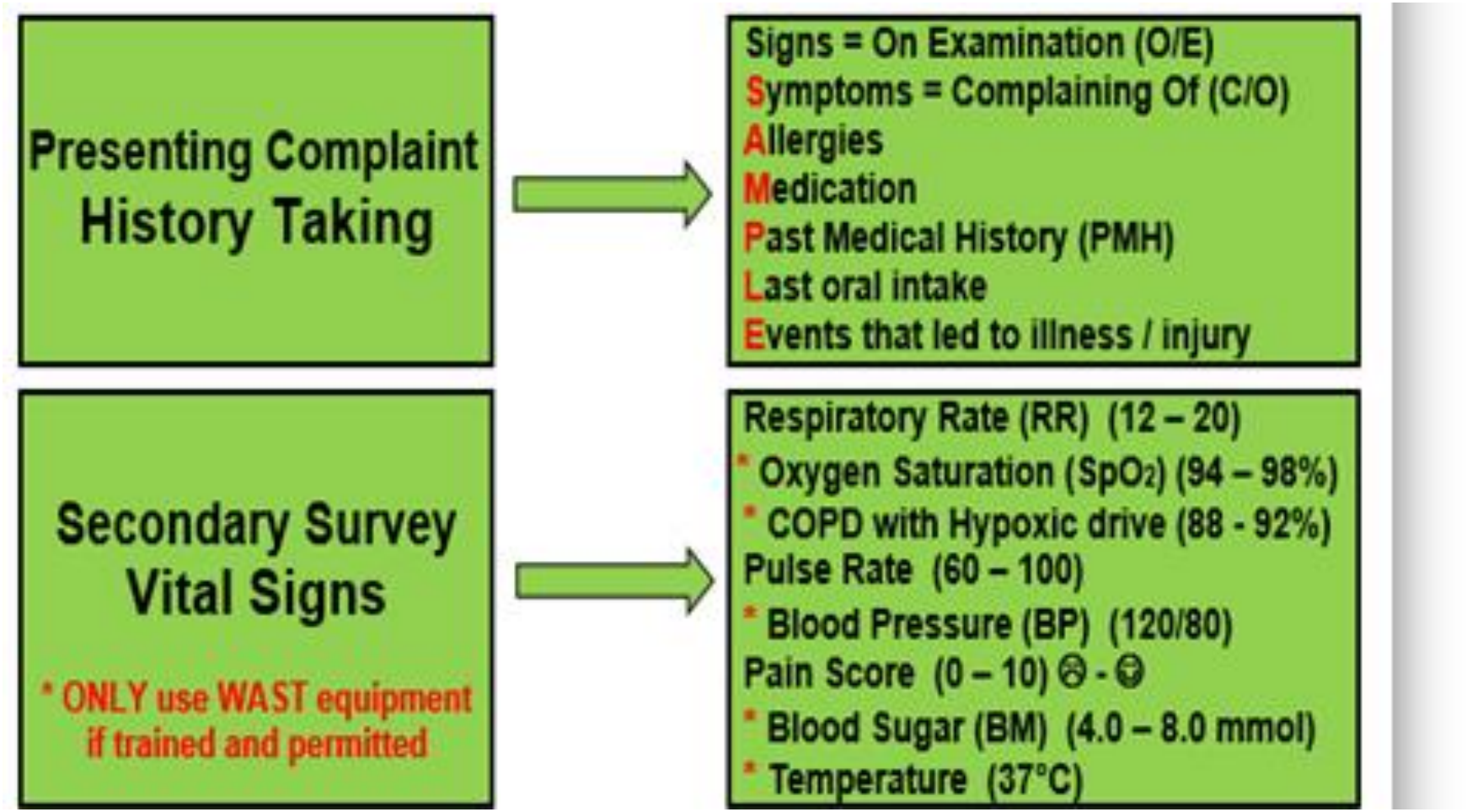
Disadvantages

- Patient can still aspirate – not a definitive or guaranteed airway
- Sometimes difficult to assess patients breathing

Recovery Position will be demonstrated during airway session

Clinical Assessment
Secondary Survey

Conscious Patient



S	Site
O	Onset
C	Character
R	Radiation
A	Association
T	Timing
E	Exacerbation/Relieving
S	Severity



SAMPLE

S	Pale, Sweat & Clammy
A	Nuts & Codeine
M	Simvastatin & Aspirin
P	↑ Cholesterol
L	18:00
E	Treadmill workout for 15 mins with onset of pain

SOCRATES

S	Central chest
O	Working out
C	Crushing sensation
R	Goes into my left arm
A	Feel sick
T	Had pain for 30 minutes
E	Lying flat
S	8/10

Reassessment

Your patient's clinical condition is dynamic and frequently changing, either due to the illness or injury they have acquired, or as a result of an intervention you have performed.

Continue to reassess your patient’s condition;

✓Primary Survey

✓Vital Signs

✓Presenting complaint

✓Review of treatment

Handover

ATMIST Clear, concise and to the point	
A	Age of the patient
T	Time that the incident/illness occurred
M	Mechanism of injury/medical condition
I	Injuries sustained
S	Signs and Symptoms
T	Treatment given/ immediate needs

What is Consent?

In the United kingdom, case law has determined that adult patients with mental capacity must give consent before they are touched or treated. Failure to do this leaves yourselves open to civil claims for trespass against the person, which includes assault and battery (Dimond2008); therefore, you must seek valid consent to treat your patient.

Key Points:

- ✓ A partnership between patient and those providing care
- ✓ A legal requirement
- ✓ Can be refused
- ✓ May be unobtainable due to patient's condition.

Consent

Types of consent: Implied, Verbal, Written, Refused



Young people and children

- Should be involved
- Over 16 presumed to have capacity
- Younger children
- Parental responsibility
- Competent child v Parental responsibility.






Out to
LUNCH!


RECAP

Airway Management

Group Work



Practice Time



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**!

❖ *Feeling a bit down?*	*Talk to a colleague*
❖ *Finding things difficult?*	*Talk to the management team*
❖ *Need Professional advice?*	*Call Wellbeing Support Service 0300 321 4700*
❖ *Don't know what to do?*	*Call the Samaritans*
	www.wastkeeptalking.com

Diolch
Thank You

