COMMUNITY FIRST
RESPONDER

PRE-COURSE LEARNING BOOKLET
PLEASE ENSURE THAT YOU READ EVERY TOPIC WITHIN THIS DOCUMENT AS THEY MAY BE INCLUDED AS PART OF YOUR FINAL ASSESSMENT

THANK YOU
<table>
<thead>
<tr>
<th>Topics</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASSESSING ILLNESS &amp; INJURY</td>
<td>36</td>
</tr>
<tr>
<td>HEART CONDITIONS</td>
<td>37</td>
</tr>
<tr>
<td>SHOCK</td>
<td>39</td>
</tr>
<tr>
<td>SEVERE BLEEDING</td>
<td>40</td>
</tr>
<tr>
<td>BURNS &amp; SCALDS</td>
<td>41</td>
</tr>
<tr>
<td>FRACTURES &amp; DISLOCATIONS</td>
<td>42</td>
</tr>
<tr>
<td>FAINTING</td>
<td>44</td>
</tr>
<tr>
<td>SEIZURES</td>
<td>45</td>
</tr>
<tr>
<td>STROKE</td>
<td>47</td>
</tr>
<tr>
<td>DIABETES</td>
<td>48</td>
</tr>
<tr>
<td>HYPOTHERMIA</td>
<td>49</td>
</tr>
<tr>
<td>QUIZ</td>
<td>50</td>
</tr>
<tr>
<td>GLOSSARY</td>
<td>55</td>
</tr>
</tbody>
</table>
Hello and thank you for your interest in becoming a Community First Responder (CFR).

The world of pre-hospital care and emergency first responding can be both challenging and incredibly rewarding. Throughout South Central Ambulance Service NHS Foundation Trust, we are proud to have over 1600 dedicated community based first responders working with us to help serve those people whom are in the most need and are very much an integral part of the emergency care services that we provide.

Your induction course is now fast approaching and we hope that you will enjoy it as much as we enjoy teaching it. The CFR initiative is community based and our induction course has therefore been designed to teach individuals to the required skill level regardless of previous first aid or medical training.

The field of pre-hospital medicine requires every person responsible for delivering care to remain confident, competent and up to date with their knowledge and skills. It must be understood that whilst you will learn an awful lot in a relatively short time on your induction course, this is only the beginning and you are very much entering into a life long learning commitment.

The CFR team is dedicated to not only providing help and training, but also continued support when you are actively responding. However it is also important that you personally take ownership of your own learning and goals, with this pre-learning booklet being the first step on that journey. It should be seen as an integral part of your basic induction training as the contents within will compliment your taught sessions.

Thoroughly reading and understanding the topics covered will help to ensure that you begin your induction training with a level of knowledge that allows you a much greater understanding of the theoretical aspects taught and a greater emphasis to be placed upon both practical skills and experience.

Should you have any questions about any topic covered, you can be assured that time will be dedicated at the start of the course to address any areas requiring clarity.

So please enjoy the topics within, take your time to read them all and don't forget to bring this booklet along with you to the course.

We look forward to seeing you very soon!

The Community Responding Team
South Central Ambulance Service is proud that there are over 1600 Community Responders and Co-responders serving the residents of Hampshire, Berkshire, Oxfordshire and Buckinghamshire, all overseen by a dedicated team of experienced professionals who are absolutely committed to providing only the very best support and training.

### NORTHERN CLUSTER COMMUNITY RESPONDER TEAM

- ***Richard Tracey***
  - Indirect Resources Manager – Northern Cluster HQ

- ***Shona Harris***
  - Administration Assistant

- ***Steve Cartwright***
  - Community Liaison and Training Officer – Central Berkshire

- ***Dave Hamer***
  - Community Liaison and Training Officer – West Berkshire

- ***Marc Lister***
  - Community Liaison and Training Officer – East Berkshire

- ***Amanda Cundy***
  - Community Liaison and Training Officer – S. Buckinghamshire

- ***Dave England***
  - Community Liaison and Training Officer – N & E Oxfordshire

- ***Ian Jones***
  - Community Liaison and Training Officer – S & W Oxfordshire

- ***Community Liaison and Training Officer – N. Buckinghamshire***
The Community Responder Team

SOUTHERN CLUSTER COMMUNITY RESPONDER TEAM

NIC MORECROFT
Indirect Resources Manager
Southern Cluster HQ

Lynn Tutton
Senior Secretary
Southern Cluster HQ

Liz Topps
Community Liaison and Training Officer
North Hampshire

Jayne Hernon
Community Liaison and Training Officer
South East Hampshire

Howard Farley
Community Liaison and Training Officer
Central Hampshire

Terry Kane
Community Liaison and Training Officer
South West Hampshire
The Role of the CFR

The role of the CFR is highly varied and encompasses many elements, the main ones being:

- To attend appropriate emergency calls as directed by the ambulance service.
- To provide the appropriate and necessary treatment to a patient before an ambulance resource arrives.
- To accurately document, record and inform the attending ambulance resource of any relevant history and treatment given either verbally, using a patient report form (PRF) or a mixture of both.
- The provision of continuing care under the direction of the ambulance response, where required.
- To remain at the scene of an incident until released by an ambulance resource. Many ambulance crews will ask for your assistance in certain circumstances. You are not obliged to help, but any assistance is greatly appreciated and the attending clinician(s) will be able to advise if you are still required or not.
What type of incidents will you attend?

SCAS takes the health, safety and welfare of all of its volunteers very seriously, particularly those that are classed as ‘lone workers’ and this includes CFR’s. In addition, both research and experience has shown that CFR’s are particularly effective for certain types of call.

Therefore a list of the types of both suitable and unsuitable incidents for CFR’s are listed below. These lists are not exhaustive and your attendance at any incident is subject to the individual circumstances at the time, with the ultimate decision to despatch always remaining with the Emergency Operations Centre (EOC).

<table>
<thead>
<tr>
<th>INCIDENTS ATTENDED</th>
</tr>
</thead>
<tbody>
<tr>
<td>✓ Collapse of known or unknown cause</td>
</tr>
<tr>
<td>✓ Cardio-respiratory arrest</td>
</tr>
<tr>
<td>✓ Respiratory emergencies</td>
</tr>
<tr>
<td>✓ Cardiac emergencies</td>
</tr>
<tr>
<td>✓ Neurological emergencies</td>
</tr>
<tr>
<td>✓ Accidents (home, work, leisure or sports)</td>
</tr>
<tr>
<td>✓ Other medical emergencies</td>
</tr>
<tr>
<td>✓ Falls (from any height)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>INCIDENTS NOT ATTENDED</th>
</tr>
</thead>
<tbody>
<tr>
<td>✗ Fire incidents</td>
</tr>
<tr>
<td>✗ Known violent incidents (Unless a Police presence is in attendance)</td>
</tr>
<tr>
<td>✗ Industrial incidents involving chemicals or gases</td>
</tr>
<tr>
<td>✗ Hangings</td>
</tr>
<tr>
<td>✗ Known mental health problems</td>
</tr>
<tr>
<td>✗ Road traffic collisions</td>
</tr>
<tr>
<td>✗ Maternity and gynaecological incidents</td>
</tr>
</tbody>
</table>
What happens when someone dials 999?

Remember that your own personal safety and security is paramount!
Never mobilise to an emergency call without first speaking to the EOC
You must observe and obey all road traffic laws – you have no exemptions
Keeping Safe

Whilst problems are relatively rare, entering strange places and situations can present real dangers to both responders and emergency crews due to a combination of factors including unfamiliar surroundings, persons present, general environment etc. Therefore, the number one priority before attending any incident is your own personal safety and security and this should remain so regardless of the circumstances.

Danger can present itself in many forms including bystanders, relatives, the patient, traffic, environment, animals, chemicals to name but a few. So you must ensure that you continually make both audible and visual observations as you approach the incident and throughout.

- If you feel that it is not safe to attend the incident (i.e. a crowd outside the house etc) then simply drive past, park up at a safe distance, out of sight from the scene and inform the EOC of the situation immediately.
- The EOC will notify the attending ambulance resource and the Police if necessary.
- Await further instruction from the EOC and never be tempted to return back to scene without prior clearance from the Police, the EOC or the ambulance resource.

Remember to:

- Look – Can you see any potential hazards?
- Listen – Can you hear anything of concern?
- Think – Is it truly safe to approach?
- Act – Only approach when you are certain that it is safe.

When assessing a scene consider:

- Yourself – will approaching place you in danger?
- The Scene – Is the scene safe?
- The Patient – Can you safely assess and treat the patient?
Keeping Safe (continued)

**Entering premises**

- After you have been greeted at the door introduce yourself by saying ‘*Ambulance Service Community Responder, how may I help?*’
- Invite the person who greeted you to ‘*Lead the way*’ try not to let them get behind you as this may place you in danger if the person has an ulterior motive.
- If possible, keep an escape route open and say ‘*may we leave the door open as the ambulance will be here soon*’ if necessary state that you will close the door, however simply leave it on the latch so that it can be opened quickly and easily from both the outside and inside.
- Try to make a mental note of doors that you have come through to aid a rapid escape if needed. Many houses are large and/or with a complex layout compounded by the fact that all of the doors may be the same style and colour which may cause confusion in the event of a rapid escape being required.

As mentioned previously, problems at scene are relatively rare, however your personal safety should be your number one priority at all times, so if at any time you become uncomfortable with the situation politely but firmly say ‘*I am just going back to the car to get some extra equipment*’ this can then provide you with an opportunity to get out of the house, back to the car, and drive off.

Once at a safe distance (out of direct vision of the incident), immediately inform the EOC of what took place so that they can make the ambulance crew aware of the problem and call for police assistance if necessary. In true emergency situations, it may be necessary for you to use the 999 system and inform the ambulance call taker who you are.

![Warning]

**Remember that situations constantly change**

Dangers may present at any time, so be prepared to withdraw if necessary
Post Incident Support

Due to the very nature of pre-hospital emergency work, there are going to be times when you may attend a call that will potentially have lasting effects for you personally. The ambulance service takes the welfare of all its emergency staff very seriously and aims to address any problems with speed and effectiveness.

Signs that an incident may be troubling you include:

- Insomnia (trouble sleeping)
- Reduced appetite
- Increased dependence upon alcohol, tobacco or other substances
- Constant recurring thoughts about the incident
- Questioning your actions/ongoing uncertainty about an incident

This list is by no means exhaustive as everyone will deal with stress in different ways.

You must be aware that whilst certain incidents can be extremely emotive by their very nature, it is often the smaller less obvious ones that can cause problems over time.

Requesting and requiring support is not a weakness and is something that is fully available to you from both the ambulance service and specialised external services.

Support may take the form of:

- Talking to family or friends
- Talking to your scheme co-ordinator or other members
- Talking to a member of the ambulance service
- Talking to a trained counsellor
- Talking to your own GP
Post Incident Support (continued)

Obviously any discussions surrounding particular incidents must respect confidentiality at all times with no personable identifying information being shared. If following an incident you feel that you would wish to speak to someone further on the matter, then this can be easily arranged by contacting the EOC and informing them as such. You may be visited by a duty ambulance officer and/or followed up by your scheme’s Community Liaison and Training Officer (CLATO). You may also wish contact your co-ordinator who will also be aware of the procedures to follow should further support be required.

Asking for and receiving support is not a sign of weakness
It is a natural part of the role and is healthy
Patient Communication

The Art of Communication

Effective patient communication is arguably one of the most important yet complex skills that anybody can have within pre-hospital care. Whilst certain elements can be taught, the majority rely upon natural abilities and experience gained throughout our everyday lives.

Therefore, here are some simple guidelines regarding communicating with patients:

• Always use a calm approach (voice and body language): people under stress will often have a heightened state of anxiety with a raised voice and erratic, rushed movements. Talking to them in a calm and controlled manner will help alleviate any stress and allow you to gain control of the situation.

• Respect personal space: everybody’s personal space boundaries are different and there is no ideal distance. So be mindful not to initially ‘crowd’ a patient and if possible, kneel down so that you are speaking at eye level as this is deemed less threatening.

• Use non-verbal techniques: such as smiling, open body language and appropriate gestures.

• Always apply due respect to the cultures, values and beliefs of the patient.

• Try to pronounce names correctly: if unsure, ask the patient or relative. If the name is unknown then use sir or madam as appropriate.

• Try to avoid over familiarity with the patient and relatives.

• Introductions: introduce yourself, your role and explain your action.

• Try to use open questions: such as ‘How can I help?’ ‘Where does it hurt?’ ‘Can you describe the pain for me?’ Most successful questioning techniques rely upon a mixture of both open and closed (yes/no) questioning and will vary considerably between patients.

• Give patients time to answer: do not be tempted to finish sentences off for them. If a medical or other condition has an adverse effect upon the patient’s speech capabilities, then you can ask a relative or bystander but be mindful to always include the patient in your conversation and never talk over or ignore them.
Patient Communication (continued)

- Remember that initially patients may be anxious, frightened, confused or even aggressive, however good communication techniques can very often overcome these hurdles and afford you the trust to effectively assess and treat the patient.
- Never assume who people are in relation to a patient, always ask!
- Language or cultural barriers may hinder communication, so if possible use reliable relatives or bystanders to translate.
- Be aware that it may take longer for some patients to fully understand things, this is particularly applicable to those with learning difficulties, the elderly, the young or patients who have suffered a stroke etc.

"The single biggest problem in communication is the illusion that it has taken place."

George Bernard Shaw
Patient Consent

Sometimes patients appear to make decisions concerning their health, safety and welfare that may seem at direct odds with what others may consider as ‘sensible’, including relatives, bystanders and professionals helping them. However it must be borne in mind that in the majority of circumstances every person has a right to refuse treatment or reject offers of help and any unlawful enforcement against the patient’s wishes may be in direct contravention of the law.

Some points to remember

• A patient may refuse treatment at any time, even if you have previously commenced treatment/provided help

• All treatment/assessment procedures should be explained clearly so that the patient can make an informed choice

• Relatives may express a view but cannot directly give legal consent in most instances. If there are any issues surrounding this, then you must contact the EOC immediately

• It is permissible to act without consent for unconscious patients or those in cardiac arrest. However, again be mindful of the concerns/thoughts of relatives/bystanders and any increased risk providing treatment may cause if they deem it unnecessary or against their wishes

• Whilst relatives generally cannot legally refuse a responder delivering care, they may become aggressive if you do not stop when asked. In these circumstances, if you feel at risk, withdraw and inform the EOC

• Attempts to treat a conscious patient when consent is not given may lead to conflict and may even instigate a charge of physical assault
Consent and Children
The assessment and treatment of children is an incredibly complex area and often highly emotive. It should be remembered that at all times you should keep the interests and welfare of the child in mind, yet also respect the wishes of parents.

Once children reach the age of 16, they are presumed in law to be competent (as long as they fulfill the criteria below). In many respects they should be treated as adults and can give consent for their own medical treatment.

Children under 16 years of age are not deemed to be automatically legally competent to give consent unless they are able to fulfill the following criteria.

A person (adult or child) is deemed as competent when:

• They are able to understand and retain the information relating to the decision about their care, i.e. the type, reason and possible consequences of the proposed treatment, as well as the consequences of not having treatment.
• They are able to use this information to consider whether or not they should consent to the treatment offered.
• They are able to communicate their wishes.

If the child is deemed competent and wishes to receive treatment, then those with parental responsibility cannot over-ride them.

If a competent child is refusing treatment, those with parental responsibility can consent if the treatment is deemed to be in the child's interests.

SO WHO HAS PARENTAL RESPONSIBILITY?
Patient Consent – Children

Parental responsibility is classed as follows:

- A mother always has parental responsibility for her child.
- A father only has this responsibility if he is married to the mother when the child is born or has acquired legal responsibility for his child by:
  - Jointly registering the birth of the child with the mother (since December 2003)
  - A parental responsibility agreement with the mother
  - A parental responsibility order, made by a court
- The child's legally appointed guardian - appointed either by a court or by a parent with parental responsibility in the event of their own death.
- A person in whose favour a court has made a residence order concerning the child.
- A local authority designated in a care order in respect of the child (but not where the child is being looked after under section 20 of the Children Act, also known as being 'accommodated' or in 'voluntary care').
- A local authority or other authorised person who holds an emergency protection order in respect of the child.

If parental consent is required, yet they are unavailable, there are times when parents may devolve the responsibility of consent to emergency treatment to others - e.g. grandparents or child minders. Such consent does not need to be in writing and the healthcare professional does not need to consult the parents, unless there is cause to believe that their views would differ significantly. Where there is no specific agreement between parents and a third party in any given situation, the third party can give consent providing it can be justified as being in the best interests of the child. An example of this would be a teacher calling an ambulance for a child requiring urgent treatment after an accident at school.

Put simply, if there are any issues surrounding consent with a patient, regardless of age, then you must contact the EOC immediately for advice before proceeding further.
Patient Confidentiality

Patient confidentiality is treated very seriously within any field of healthcare and everybody involved in patient care has a duty under law to observe and respect that.

To remain both compliant and within the law, follow these simple rules:

- **Any** information provided to you as a responder is confidential and must be treated as such at all times.

- You must never disclose confidential information to others (i.e. relatives, neighbours, bystanders, the press etc). Whilst this may potentially raise some issues with concerned relatives/friends, the patient’s confidentiality must be respected and you may have to highlight this to the relative/friend.

- You may only hand over confidential information to the next person who will be directly responsible for the patient’s care (e.g. ambulance crew). Remain mindful of the presence of others when undertaking any handover.

- Any information documented on a report form should also be handed over as above.

- Schemes are not permitted to keep or share any confidential details, regardless of the circumstances, nor are you permitted to disclose confidential information to your own relatives, friends etc.

Confidentiality is a legal right and we all have a duty to respect that. How would you feel if your GP discussed your medical file with your neighbours?
Effective infection control procedures are vital in the provision of the safe and effective treatment and management of any patient to provide protection to both patient and carer. Just take a moment to consider if you would be happy to be treated by someone who has just been to the toilet yet failed to wash their hands after? The germs have to go somewhere!

Therefore a few simple rules should be followed:

• Keep cuts and grazes covered at all times.
• Maintain good personal hygiene at all times.
• Keep nails short and clean.
• Ensure that your hands are washed thoroughly after patient contact or if this is not possible, the use of an antibacterial hand rub.
• All clinical waste should be disposed of in a yellow clinical waste bag and passed to crew for disposal. **It must never be placed in domestic rubbish!**
• Consumables are for single patient use only and should not be re-used (these will be highlighted throughout your course)

![Image of clinical waste bags]
Using gloves
Latex free disposable gloves are one of the main infection control measures used when directly treating a patient, but should always be complimented by good hand cleansing techniques such as washing and anti-bacterial rubs.

When to Wear Gloves
- Most gloves used within emergency care simply act as a protective barrier and are not sterile; therefore all attempts must be made to keep them as clean as possible before patient contact.
- Never wear gloves to or from an emergency, particularly where you have to touch other objects including steering wheels, door handles/latches etc.
- Only put gloves on once you are at the patient’s side.
- If potential contact with blood, body fluids, secretions, excretions, the exception being perspiration.
- When in contact with patients under isolation precautions.
- If you are in contact with patients with obvious skin abrasions.
- If the patient is not socially clean.

The Use of Gloves
- Wearing gloves is not a substitute for hand hygiene
- Gloves should only be worn as single use items
- Gloves should be put on beside the patient
- Apply alcohol hand rub before putting on gloves (if possible,
- Change gloves between patients and between dirty and clean procedures on the same patient
- Hands must always be decontaminated after removal of gloves
Infection Control (continued)

- Gloves must be disposed of as clinical waste (yellow bag)
- Do not wash or use alcohol hand rub on gloves
- Gloves are not necessary for most clinical procedures
- Wear gloves for the minimum period possible, ideally for periods no greater than 20 minutes at a time
- Frequent use increases risk of sensitisation so appropriate use of gloves is recommended.

EFFECTIVE HAND WASHING

Technique is more important than the solution used. An effective hand washing technique involves 3 stages: Preparation, Washing & Rinsing and Drying. When hands are washed in a hasty manner certain areas tend to be missed. The diagram below highlights the areas of skin that are commonly missed during poor hand washing.
Infection Control (continued)

- Remove jewellery (wedding rings may be kept on if necessary).
- Preparation requires wetting your hands with water and then applying a liquid soap/solution.
- This should be followed by vigorous rubbing of hands for 10-15 seconds paying particular attention to tips of fingers, thumbs and between the fingers.
- Hands should be thoroughly rinsed and properly dried using paper towels.
- The wearing of gloves is never an alternative to good hand hygiene.

1. Rub palm to palm
2. Rub the backs of both hands
3. Rub palms again with fingers interlaced
4. Rub backs of interlaced fingers
5. Remember to wash both thumbs
6. Rub both palms with fingertips
7. Wash hands under running water using soap, rinse and dry thoroughly

This handwashing technique is based on a procedure described by G A J Aycliffe et al. J Clin Path. 1978; 31: 923
We would like to gratefully acknowledge IQ Pharmaceuticals UK for providing guide drawings.
Copyright CNA H G Wallace Ltd 1991
Vulnerable Adults and Children

During 2010 South Central Ambulance Service attended over 900 calls where a concern for welfare was raised surrounding a potentially vulnerable adult or child. Traditionally ambulance staff (including responders) are viewed with a high regard, a level of trust and often seen as ‘the good guys’ by many members of the public. This often allows us access to areas of people’s lives that they would otherwise keep hidden from others.

As a result this may lead us to witness things that we could deem worthy of highlighting to others due to varying concerns.

Responders are never sent to known cases of abuse and/or neglect; however your unique position as being the first to arrive at scene may place you into a situation whereby you experience something that may raise concern.

So what constitutes ‘abuse’?

• Physical: such as slapping, kicking, rough handling, neglect, shaking, throwing etc
• Emotional/Psychological: such as humiliation, harassment, intimidation, bullying etc
• Financial/Material: such as theft, fraud or misuse of a person’s money or property etc
• Neglect: such as withholding care and treatment or failing to meet basic everyday needs.
• Sexual: such as rape (male & female), indecency, sexual harassment, any form of sexual activity (contact or non contact) without informed consent
• Discrimination: such as victimisation, physically/verbally abusing someone, racism, ageism, sexism (gender and orientation), disability.
Where does abuse occur?
The short answer is literally anywhere. At home, nursing or residential care, hospitals, public places, school or work place are all potentially vulnerable places.

Who abuses?
Again this can be answered very simply, absolutely anyone. The abuser may be family, friends, neighbour/tenant, paid staff, volunteers, other service users or strangers.

SIGNS OF NON-ACCIDENTAL INJURY (NAI) IN CHILDREN

Children are not the only members of society at risk; however they are very commonly abused due to the ease of control, physical size and naivety. Therefore, when either treating a child or witnessing another, always be suspicious of the following potential indicators of NAI which may indicate possible abuse:

• Bruising to/around the soft parts of the ear: possibly from slapping?
• Black eye(s): possibly caused by direct trauma or a blow to the bridge of the nose?
• Suspicious patterns of bruising: possibly from finger marks or objects?
• Abnormal areas of bruising: particularly on the stomach, chest, back etc.
• Bruising at different stages of healing: possibly from repetitive abuse
• Torn frenulum (inside of the mid upper lip): possibly from a forced feeding bottle?
• Frozen awareness: does the child have a frozen look but follows your every move?
• Burn marks: possibly from irons, cookers etc
• Cigarette burns: maybe at various stages of healing
• Scalds with an inconsistent/unclear history
• Bite marks: anywhere on the body and possibly at various stages of healing
Vulnerable Adults and Children

Ears – especially pinch marks involving both sides of the ear
The “triangle of safety” (ears, side of face, and neck, top of shoulders): accidental injuries in this area are unusual
Inner aspects of arms
Back and side of trunk, except directly over the bony spine

Black eyes, especially if bilateral
Soft tissues of cheeks
Intra-oral injuries
Forearms when raised to protect self
Chest and abdomen
Any groin or genital injury
Inner aspects of thighs
Soles of feet

REMEMBER
Concerns are raised by:
• injuries to both sides of the body
• injuries to soft tissue
• injuries with particular patterns
• any injury that doesn’t fit the explanation
• delays in presentation
• untreated injuries
**Vulnerable Adults and Children**

**Actions to be taken in the event of raised suspicions**

If you have a cause for concern for *any* patient (regardless of age) that they may be subjected to abuse, neglect etc, you have a duty to report that as soon as possible.

To assist you with this, here are some guidelines:

- Never raise your concerns with anybody connected to the patient (family, friends, work colleagues etc) this also includes the patient themselves.

- Ask to speak to one of the ambulance crew, *in private*, as soon as is convenient. When speaking to crew members please remain mindful of open windows and doors of both properties and vehicles where sound may easily travel to the occupants inside.

- Should you be unable or forget to speak to the crew, then you must contact the EOC immediately and raise your concerns. All voice traffic both in and out of the EOC is recorded and stored and what you say may well act as crucial evidence later.

- Never discuss your concerns with any of your family members, friends etc. If you feel that you wish to talk to somebody, then contact the EOC who will arrange for support and assistance to be provided straight away.

- Be prepared that you may have to make a statement to either the ambulance service and/or the police about the incident. However, full support and guidance would be provided throughout these processes.

- Please be mindful that incidents of this nature are extremely rare (approximately 0.25% of calls) and will not be a regular occurrence in your role as a CFR.
Manual Handling

It should be made completely clear from the outset that responders are neither permitted nor expected to be directly involved in the manual handling/moving of patients, or operating patient handling equipment. Any injury that occurs as a result of moving/lifting patients will be entirely at the responder’s own risk.

However, in addition to carrying your own equipment, there will be times when you may either wish or be asked to help an ambulance crew carry equipment to or from a scene.

Back injuries are one the most common causes of back pain in adults within the UK, affecting approximately 8 out of 10 people at some point during their lives. We are all guilty of bad posture (driving, sitting etc) or poor lifting technique at times, regardless of how careful you feel that you may be.

Therefore, following a few simple rules can help in safeguarding yourself against injury whilst moving potentially heavy equipment

ASK YOURSELF ABOUT THE....

**TASK**
- Is it necessary?
- What is the task?
- How can I achieve it?

**LOAD**
- How heavy is it?
- What shape is it?
- How large is it?

**INDIVIDUAL**
- Can I do it?
- Am I properly dressed?

**ENVIRONMENT**
- Do I have space?
- Is my route clear?
- Can I see my path?
Basic Introduction to the Body

The human body is both complex and diverse with several distinct systems that work closely together to allow us to live our life in work, rest and play.

The body is made up of trillions and trillions of cells and medical scientists can not be more precise than this as the cells in the body are constantly changing.

To understand illness, we first need to understand the body in health.

For your role as a Community First Responder we will only require you to have a very basic knowledge of anatomy and physiology and a small insight is provided on the following pages.

Included are general introductions to:

- Skeletal system in health and illness
- Respiratory system in health and illness
- Circulatory system in health and illness
- Nervous system in health and illness

These sections are simply to provide some background knowledge and will be expanded upon throughout your course.
The Skeletal System

Functions of the Skeleton

- **Support** for the soft tissues of the body, giving shape and form. To provide a point of attachment for the skeletal muscles.
- **Protection** of the vital organs such as the brain, heart and lungs.
- **Movement** is facilitated by the bones and joints of the skeleton which act as levers to the muscles that are attached.
- **Mineral storage** in the bones which are distributed to other parts of the body when needed.
- **Blood cells** that are red and carry oxygen and some white cells that help fight infection are produced in the marrow of certain bones.

The skeleton is made up of 206 bones that vary in shape and form but one common feature is that they may fracture as a result of injury. Other injuries such as a dislocation may also occur if the joint is put under excessive force.

**Types of injury likely to cause fractures to bones are**

- **Direct force** which cause damage to that particular area or
- **Indirect force** when during a fall a person lands on an outstretched arm and dislocates/fractures the shoulder joint.

You will cover different types of injury to the skeletal system and their treatment in greater details throughout the induction course.
The Respiratory System

The Respiratory system has four principle functions:

- Extract oxygen from the atmosphere and transfer it to the bloodstream in the lungs
- Excrete water vapour, carbon dioxide and other waste gases
- Maintain the normal acid-based content of the blood
- Ventilation of the lungs.

All parts of the body consume oxygen, and produce carbon dioxide as a waste product. To cover this need, respiration takes place internally (at the cellular level) and externally (ventilation/breathing).

Ventilation involves the inhalation of atmospheric air which contains approximately 20-21% oxygen into the lungs via the nose and mouth through branching passageways into the right and left lungs, and the exhalation of carbon dioxide reversed through the same route comprising approximately 4-5% within exhaled air. The key function of the lungs is to bring air and blood into intimate contact within the alveolar air sacs so that oxygen can enter the blood and carbon dioxide may leave.

At rest, humans breathe at a rate of approximately 12 to 20 times per minute, bringing in approximately 500ml (1 pint) with each breath.

Exercise and certain diseases such as asthma, emphysema and bronchitis may result in a marked increase of breathing rate and effort. The respiratory system is also crucial in maintaining a normal blood acid balance (PH 7.35) and body temperature.
The human circulatory system basically resembles a simple closed plumbing network consisting of a pump (heart), tubes (arteries and veins) and fluid (blood that carries oxygen).

The heart is a hollow organ that lies between the lungs and is often compared in size with the owner’s fist. It has two upper chambers (atrium) that receive blood and two larger lower chambers (ventricles) with one responsible for pumping blood to the lungs the other to the rest of the body. This pumping action of the heart causes it to beat approx 60-100 times per minute or 100,000 times a day sending the blood through an average 60-70,000 miles of blood vessels.

The heart is made up of three distinct layers:

- An outer layer (pericardium) that prevents over distension of the heart with a special fluid that allows for smooth movement.
- A middle layer that consists of very specialised muscle tissue (myocardium) created out of cells that are able to function/pump automatically.
- An inner layer (endocardium) that has a very smooth lining which prevents local blood clotting.

The arteries carry oxygenated blood from the left side of the heart, under pressure, to the whole of the body, whilst the veins carry deoxygenated blood from all areas of the body back to the right side of the heart to be pumped back to the lungs for waste disposal and re-oxygenation.

Many problems can occur with the heart including:

- Heart attack
- Angina
- Conduction system failure
- Left Ventricular Failure
- Infection
- Injury
The Circulatory System (cont.)

**Electrical Conduction System of the Heart**

When we look at the circulatory system, we can see that the heart is divided into a pump (heart), tubes (blood vessels) and fluid (blood). However, we also need to understand how our heart harnesses the energy to become a self-regulating body component that effectively delivers life-giving oxygen to every cell, tissue and organ of our body.

The heart has a unique pathway that allows a wave of electrical activity to spread from the upper chambers of the heart through to the lower chambers and thus creating a wave of contraction within the heart muscle. This electricity is created through a complex movement of chemicals which are already present naturally within both the cells and the body. This contraction forces blood from the upper chambers through to the lower chambers and then to the lungs and the body as a whole.

The normal controlling part of the heart is the pacemaker and is best described as a group of specialised cells situated within the right upper chamber of the heart that in medicine is called the Sinoatrial (SA) node.

If working correctly and we were able to view this electrical activity on an electrocardiogram (ECG), it would show a rhythm that health care professionals recognise as normal sinus rhythm (NSR).

The heart rhythm can for many reasons vary from this natural course and may need medicine or medical procedures that are beyond the scope of this pre-learning text and your Induction course. However, there are life-threatening rhythms that will be recognised by an Automatic External Defibrillator (AED) that are used by CFR’s in the community.
The Nervous System

The adult brain is made up of approximately 100 thousand billion neurons (or brain cells) and is one of the largest and arguably most important organs of the human body.

A complex computer, our brain is the centre that:

- Stores information
- Controls emotion
- Manages our intellect

Our brain can also excite, be creative and direct our behaviour toward others.

The brain is made up of several key areas but the area we need to be aware of as a CFR is the autonomic (automatic) part of our brain stem.

Our brain and brain stem communicates with other parts of the body via electrical signal transmitted down the spinal column and into individual nerves into connective tissue.

Some of the important functions of our brainstem

- Regulates both the rate and force of our heart beat
- Regulation of the diameter of our blood vessels to govern our blood pressure
- Coughing
- Swallowing
- Sneezing
- Vomiting

The nervous system is an incredibly complex area and during your induction course, the tutor will guide you through the relevant features in health as well as illnesses that may affect the casualty including:

- Head Injuries
- Stroke
- Epilepsy/Seizures
- Febrile Convulsions
Assessing and Treating Illness and Injury

The following pages contain information relating to both medical and trauma related subjects that you may experience whilst undertaking your role as a Community First Responder (CFR) /Fire and Rescue Co-responder.

The supplied information has been deliberately designed to be succinct and concise to provide a background knowledge base in readiness for your forthcoming training. Further and more in-depth information on the major subjects will be issued to you and discussed during your induction course.

How these subjects are covered will be at the discretion of your tutor but may include:

- PowerPoint presentation
- Working from your Induction booklet
- Group and individual discussion
- Scenarios and the practical elements of your induction course
Heart Conditions

Introduction

The heart is a very complex organ, made up of many specialised structures designed to work in unison. The heart can suffer from a variety of problems with the most common being heart attack and angina. However, any patient presenting with a suspected cardiac condition can be safely treated in a similar way.

What is a Heart Attack?

A heart attack is also commonly referred to as a Myocardial infarction (MI) and is usually caused by a blood clot that stops blood flow within a heart (coronary) artery. ‘MI’ simply means that part of the heart muscle suddenly loses its blood supply and without prompt treatment this can lead to permanent damage to the affected part of the heart.

During an MI, a coronary artery or one of its smaller branches is suddenly blocked. The part of the heart muscle supplied by this artery loses its blood (and oxygen) supply and is at risk of permanent damage unless the blockage is quickly undone. (The word infarction means the death of tissue due to a blocked artery which stops blood from getting past).

What is angina?

Angina is a pain that comes from the heart and each year approximately 20,000 people within the UK develop angina for the first time. It is more common in people over the age of 50 years, although it can sometimes occur in younger people and is more common in men than women.

Angina is caused by narrowing of one or more of the coronary arteries leading to a reduced blood supply to a part (or parts) of your heart muscle. The blood supply may be enough when you are resting, however the heart muscle needs more blood and oxygen when it works harder (e.g. walking fast or climbing stairs) and the heart rate increases to deliver the extra blood.

If the extra blood that the heart needs during exertion cannot get past the narrowed coronary arteries, the heart 'complains' with pain, similar to cramp.

The narrowing of the arteries is normally caused by atheroma which can be described as fatty patches or plaques that develop within the inside lining of arteries, similar to water pipes that get furred up with scale.
Heart Conditions

Risk Factors for Heart Problems

- Smoking
- High blood pressure
- Excess weight/obesity
- High Cholesterol/poor diet
- Lack of exercise
- Diabetes
- Family history
- Certain ethnic groups

Signs and Symptoms

- Central chest pain (may be described as heavy or crushing)
- Pain in the back, left arm, face, neck or jaw (or a combination)
- Shortness of breath
- Symptoms may start either at rest or whilst active
- Pale, cold, clammy skin
- Grey/blue tinge to skin colour
- Nausea/vomiting
- Anxiety

How can we help the casualty?

- Provide reassurance
- Encourage and assist the patient to sit slightly reclined and loosen any tight clothing (neck/chest)
- Monitor the patient until further help arrives
Shock

What is Shock?
Shock is a life-threatening condition that occurs when vital organs do not get enough oxygen due to reduced blood circulation.

The most common cause of shock is severe blood loss, but it may also be caused by:

- Severe trauma including fractures and internal bleeding
- Allergic reaction
- Severe burns
- Heart conditions

Signs and Symptoms

- The skin may be cool to touch and pale or grey in colour
- Breathing may be quicker
- Pulse may be rapid and possibly weak
- Nausea and/or vomiting
- Feeling of faint or dizzy
- Confusion
- Unconsciousness

How can we help the casualty?

- Provide reassurance
- If possible, try to treat the cause (i.e. stem any bleeding and elevate the affected limb)
- Advise or assist them to loosen any tight clothing such as collars, ties or belts
- Keep the casualty warm by using a blanket or similar
- Monitor the casualty until further help arrives
- If at any time the patient becomes unconscious but continues to breathe normally, gently roll them onto their side (recovery position) ensuring that their head is tilted gently back
Severe Bleeding

Introduction
Blood conveys oxygen around the body from the heart via a series of tubes called blood vessels. These vessels are called arteries and they take blood that is rich in oxygen to every cell of the body and is then returned to the heart via other blood vessels called veins.

What is severe bleeding?
Severe bleeding can occur due to damage to an artery, vein or other smaller blood vessels and dependent upon the location, size, depth and severity, it can be both dramatic and distressing. Severe bleeding can rapidly become life threatening.

How can we help the casualty?
- Provide reassurance
- Examine the wound for any embedded object but do not attempt to remove it
- Try to stem the flow of blood coming out of the wound. Place something clean such as a towel, shirt or even the patient’s hand over the wound to help staunch the bleed (this will buy time and enable you to don your gloves and prepare a dressing)
- Try to minimise the effects of shock
- Help to prevent the risk of infection and be aware of cross-infection between you and the casualty
Burns and Scalds

What causes burns and scalds?
Burns and scalds may be caused by:

- Thermal – for example flames or hot surfaces (including scalds from hot water, steam and fats)
- Electrical
- Friction – rope or carpet burns etc
- Chemical – acids or alkalis etc
- Radiation – Sun/UV etc

How do we recognise that someone has received a burn or scald?

- History of the event from casualty or bystanders
- Redness and/or blistering
- Pain which can be extreme

How can we help the casualty?

Our number one priority must be our own safety and to avoid putting ourselves at risk

- Try to stop/remove the cause of the burning/scald
- Cool the burn/scald under tepid running water for at least 10 minutes (20 minutes if chemical)
- If tap water is not readily available use bottled water etc
- Try to alleviate the pain (this is often naturally achieved during the cooling of the burn/scald)
- Once cool, cover wound with clingfilm lengthways over the area avoid wrapping it tightly around the limb
- Minimise the risk of infection
- If possible, remove anything that will constrict such as jewellery etc
- If it is a limb injury, try to raise it above the level of the casualty’s heart
- Treat for possible shock
Fractures and Dislocations

What is a fracture?

Sometimes, excess pressure is applied to a bone which results in the breaking of the bone, this is called a fracture. The cause may either come from direct force (directly onto the bone) or indirect force (where the force is transmitted through one or more bones, injuring another i.e. falling onto an outstretched hand and fracturing a collar bone).

Fractures are a very common injury and most people suffer at least one during their lifetime. Children’s bones are relatively more flexible and less likely to break and falls or other accidents that may not cause harm in a child can easily cause complete fractures in older adults. Older adults also generally suffer from fractures more than children because their bones are comparatively brittle.

The skin overlying a fracture may be intact (closed fracture) or open and exposing the bone (open/compound fracture) which can be particularly dangerous due to the high risk of infection. Bones can fracture in several different ways with the most common being simple (the fracture occur along one line), avulsion (where a fragment of bone breaks off) or comminuted (multiple bone fragments).

What is a dislocation?

A dislocation is a separation of two bones where they meet at a joint. (Joints are areas where two bones come together). A dislocated bone is no longer in its normal position, which may result in damage to ligaments, nerves, and blood vessels.

Dislocations are usually caused by a sudden impact to the joint following a blow, fall, or other trauma and can be hard to distinguish from a fracture. Dislocations may also have an associated fracture and these can be very dangerous to the long term health and viability of the affected limb (such as the ankle and foot).
Fractures and Dislocations (cont.)

Signs and Symptoms of a fracture or dislocation

- Swelling
- Loss of power
- Irregularity
- Pain
- Deformity
- Unnatural Movement
- Crepitus (where the bone ends grate together, do not actively look for this!)
- Tenderness
- Bruising

How can we help the casualty?

- Provide reassurance
- You aim is to avoid moving casualty unless absolutely necessary as this will increase pain and may exacerbate the damage
- Encourage and assist the casualty to support the affected area
- Control any bleeding if present
- Keep the casualty warm by using a blanket or similar
Fainting

What is Fainting?
Fainting can be described as a brief loss of consciousness and is a common disorder that may affect people of all ages.

Some of the common causes are:

- Anxiety
- Emotional upset
- Stress
- Missing meals
- Dehydration
- Standing up too quickly
- Standing up for long periods of time
- Existing medical conditions such as Diabetes or Low Blood Pressure
- Side effects of medication

Signs and Symptoms
Just before someone actually faints they may exhibit or experience one or more of the following signs and symptoms:

- Nausea
- Dizziness
- Excessive sweating
- Rapid heart beat
- Blurred vision

How can we help the casualty?

- Provide reassurance
- If they are not already on the floor advise/assist them to do so
- Advise or assist them to loosen any tight clothing such as collars, ties or belts
- If possibility elevate their feet just above hip level by placing an item under their feet/legs

Fainting should be classed as a medical emergency until proven otherwise. The ambulance crew will evaluate the casualty’s medical history along with clinical indicators and base their treatment accordingly.
Seizures

What is a seizure?
A seizure may be described as the result of a sudden burst of excess/random electrical activity within the brain. This causes the brain's messages to become temporarily halted or mixed up. The type of seizure a person has is dependant upon the area of the brain where this activity occurs.

Possible causes
- Epilepsy
- Diabetic emergencies
- Head/brain injury
- Alcohol withdrawal
- Poisoning
- Stroke
- Hyper/hypothermia

Recognition
- History of seizures/other relevant history
- Loss of consciousness (may be transient)
- Reduced level of response
- Muscle twitching/rigidity/shaking
- Incontinence
- Breath holding
- ‘Glazed’ appearance
- Abnormal/inappropriate behaviour
- ‘Aura’ (smell, taste, sensation)

How can we help the casualty?
- Provide reassurance
- Make the area safe to reduce risk of injury
- Time the seizure (where possible)
- Monitor the casualty whilst awaiting help
- If unconscious but breathing normally, gently roll them onto their side (recovery position) ensuring that their head is tilted gently back

Do NOT restrain the patient
Do NOT allow anyone to force the mouth open or force objects into it
Febrile Convulsions / Seizures

Febrile seizures are a relatively common childhood condition, referring to a child having a seizure when they have a high temperature most usually as a result of an infection. Although febrile seizures may be very frightening, most are harmless and do not pose a direct threat to a child's health.

Most children have what is known as a tonic clonic seizure. During a tonic clonic seizure, the child's body becomes stiff, they lose consciousness and their arms and legs twitch. Some children may also wet themselves.

Febrile seizures are quite common with an estimated 1 in 20 children having at least one febrile seizure at some point. Most febrile seizures occur between the ages of six months and three years with the average age being 18 months.

The actual cause is unknown, although the condition appears to run in some (but not all) families. Around 1 in 4 children who are affected by febrile seizures will have a family history of the condition; however in half of all cases, there are no obvious causes or risk factors.

Many parents worry that if their child will develop epilepsy when they get older. While it is true that children who have a history of febrile seizures may have an increased risk of developing epilepsy, it should be stressed that the risk increase is still quite small.

How can we help the casualty?

Treat in the same way as an adult seizure (described previously)

In addition:

- Suggest that the parents remove most of the child’s clothing (e.g. to baby grow/vest & nappy level), but do not allow the child to become hypothermic!
Stroke

What is a Stroke?
A stroke can be described as a brain attack and may occur as a result of either a blockage or bleed within one or more of the blood vessels that supply the brain with oxygenated blood. When brain cells do not receive sufficient oxygen they will start to shut down and die.

Signs and Symptoms

- Weakness
- Numbness and paralysis to one side of the body (face, arms and/or legs)
- Difficult in speaking and swallowing
- Headache
- Confusion
- Vomiting
- Blurred vision

The F.A.S.T. Test

Using the simple acronym of ‘FAST’ can help us to recognise if a stroke has occurred:

- Facial Weakness – Can the person smile? Has their mouth or eye drooped?
- Arms – Ask them to try to raise both arms above their head
- Speech – Can the casualty speak clearly and understand what you say?
- Time – It is time for us to take action to help the casualty

How can we help the casualty?

- Provide reassurance
- If the casualty is conscious encourage and assist them to sit with their head and shoulders gently raised and their legs flat
- Monitor the casualty until further help arrives
- If unconscious but breathing normally, gently roll them onto their side (recovery position) ensuring that their head is tilted gently back
Diabetes

What is Diabetes?

Diabetes is a common life-long health condition affecting approximately 2.8 million people within the UK and an estimated 850,000 people are believed to have the condition, but are presently unaware.

It is a condition where your pancreas either does not produce any or enough insulin to help glucose enter your body’s cells (Type 1), or the insulin that is produced does not work properly (Type 2).

There are two common types of diabetic emergency

**Hypoglycaemia (Low blood sugar)**
- The most common diabetic emergency
- Rapid onset (minutes)
- Fast, shallow breathing
- Slow, bounding pulse
- Pale and sweaty
- Irritable/confused/aggressive behaviour
- Inability to concentrate
- Confusion, dizziness & headache
- Hunger
- Seizure
- Unconsciousness

**Hyperglycaemia (High blood sugar)**
- A much rarer emergency call
- Gradual onset (hours to days)
- Slow, deep breathing
- Rapid pulse
- Flushed, dry skin
- Tiredness, lethargy, drowsiness
- Blurred vision
- Excessive thirst, hunger or urination
- Smell of acetone/pear drops on the breath
- Seizure

**How can we help the casualty?**

- Provide reassurance
- If conscious: Encourage the patient to eat or drink something with a high sugar content if they are able
- If unconscious: and breathing normally, gently roll them onto their side (recovery position) ensuring that their head is tilted gently back
- Monitor the casualty until help arrives
Hypothermia

What is Hypothermia?

Hypothermia is defined as a core body temperature below 35°C. This drop in temperature may be rapid as in immersion in near-freezing water, or slow as in prolonged exposure within a temperate environment.

Who is at risk?

- Very old or very young
- Chronically ill, especially with cardiovascular disease
- Malnourished
- Exhausted
- Intoxicated with alcohol or drugs
- Mental impairment, e.g. Alzheimer's disease
- Underlying medical conditions, e.g. stroke, severe arthritis, Parkinson's disease, spinal cord injuries, burns

Signs of Hypothermia

- Shivering
- Slurred speech
- Abnormally slow rate of breathing
- Lethargy and fatigue.
- Depressed level of consciousness (the most common feature)
- Skin is cold to touch and appears grey/blue in appearance.
- The patient’s pulse and respiratory rates may be depressed and/or variable

How can we help the casualty?

- Provide reassurance
- If possible, prevent further heat loss by removing the casualty from the cold environment and replacing any wet, cold clothing with warm, dry clothing/blankets
- Do not allow the patient to smoke, eat or drink alcohol
Pre-Learning Quiz

Please use these questions to check your understanding and progress with the pre-learning booklet.

Do not worry if you cannot remember all the answers, you are free to read the relevant sections again to answer the questions.

Q1. What must you consider whilst responding to an emergency incident?
   (Hint: You must adhere to all road traffic road laws)
   What else must you also consider?

Q2. As a CFR you must make every effort to keep safe. Give three examples of how this can be achieved?

   1. 
   2. 
   3. 

Q3. As a CFR you may experience something that might affect you personally when attending an incident. Whom may you consider seeking support from?
Q4. When you need to find out information from your patient, list three possible communication skills can you use?

1. 

2. 

3. 

Q5. Give 3 examples of what must be present in both adults and children for you to judge they are competent to make decisions?

1. 

2. 

3. 

Q6. Who may legally be classed as having parental responsibility?

Q7. If at any time there are any issues regarding consent for assessment or treatment for any patient, regardless of age, who must you contact?
Q8. As a CFR we must respect patient confidentiality at all times and follow a few simple rules. Provide three people to whom it may not be appropriate to disclose confidential details to:

1.

2.

3.

Q9. To whom may you safely handover patient information to?

Q10. As a CFR you are a vital link in ‘keeping it clean’. What simple rules must you adhere to?

Q11. What does T.I.L.E. help you remember?
Q12. The skeleton has several key functions. What are they?

Q13. The skeleton is made up of how many bones?

   A) 220
   B) 240
   C) 206
   D) 300

Q14. What two causes of injury are likely to fracture a bone?

   1.
   2.

Q15. The respiratory system has four principle functions. What are they?

   1.
   2.
   3.
   4.
Q16. What is the approximate percentage of oxygen within atmospheric air?

A) 40%,
B) 32%,
C) 25-30%
D) 20-21%

Q17. At rest, what is the approximate breathing rate for an adult?

A) 20-30 per minute
B) 12-20 per minute
C) 27-35 per minute
D) 40-42 per minute

Q18. What factors may lead to an increase in our breathing rate?

Q19. How many chambers does the heart have, and what are their medical names?

Q20. The middle layer of our heart is called the myocardium. What is it made up of?
Glossary of Terms

A brief selection of standard terms whose meanings are useful to know:

**Acute (of disease):** Severe, rapidly developing, or of a sudden onset.

**Ambulance Technician:** Experienced ambulance crew member capable of delivering a wide range of drugs and treatments to patients.

**Angina:** Condition of gripping chest pain associated with disease and the narrowing of the arteries of the heart which can be described as cramping of the heart muscle.

**Asphyxia:** Suffocation by smothering or any condition that prevents oxygen being taken up by the blood.

**Aspirator:** A suction device used in the removal of fluids from the airway and other cavities.

**Asthma:** Tightening or restriction of the lower small airways accompanied by a sense of suffocation or tightness of the chest.

**Cardiac:** Relating to the heart.

**Casualty:** Any victim of an accident or sudden illness.

**Catheter:** A tube designed to be passed into a body cavity.

**Chronic (of disease):** Persistent and lasting disease or medical condition, or one that has developed slowly.

**Communication assistance device:** A portable device which may provide a communication-challenged person with a means of communication. (i.e. an enhanced or artificial voice, script on a monitor screen).

**Community Nurse:** A nurse who specialises in care for people within their own home or local health centres.

**Coronary Thrombus:** Blockage of one or more of the arteries that supply blood to the cardiac muscle usually caused by blood clots and/or fatty tissue.

**Cyanosis:** A dusky bluish tint to the skin due to a lack of oxygen in the blood.

**Diabetes Mellitus:** Disease caused by either insulin deficiency or uptake problems.

**Dyspnoea:** Difficult or laboured breathing.
**Emergency Care Assistant:** Ambulance crew member usually working alongside a more experienced colleague in the delivery of emergency care.

**Emergency Care Practitioner:** Senior and highly skilled ambulance crew member capable of delivering advanced medical skills and treatments above and beyond that of a Paramedic.

**Emergency Operations Centre (EOC):** Where 999 calls are received and ambulance resources despatched/managed from.

**Emphysema:** A chronic and debilitating condition affecting the very small airways within the lungs, the primary cause being smoking.

**Epilepsy:** Convulsive seizures caused by a disorder of the normal functioning of the brain.

**Fibrillation:** Uncoordinated contraction of muscle fibres and cells within the heart.

**Hyperglycaemia:** High levels of glucose in the blood.

**Hypoglycaemia:** Low levels of glucose in the blood.

**Hypoxia:** Low levels of oxygen within the blood and tissues of the body.

**Incident:** Any accident, occurrence or other unforeseen event requiring an ambulance response.

**Pacemaker:** An apparatus for artificially controlling the rhythm and rate of the heart.

**Paramedic:** Senior and highly skilled ambulance crew member capable of administering a large range of drugs and medical skills.

**Personal protective equipment (PPE):** Specialised equipment provided for your safety such as hi-visibility jacket, gloves etc

**Pleurisy:** Inflammation of the covering of the lungs.

**Pneumonia:** Infection of the lung tissue.

**Pulmonary:** Relating to the lungs.

**Response times:** The time lapse between notification of an emergency and the arrival of an ambulance response.

**Tachycardia:** A fast heart rate, normally >100 beats per minute.

**Vaccination:** Immunisation by giving a vaccine.

**Vaccine:** Substance created from the germs of an infectious disease used to treat that disease (vaccine may be either active or inactive).