

January 2021 – CHT Zoom awareness sessions notes

Welcome! ... and thank you for joining our Zoom awareness session on your defibrillator, and basic life support. These pages will accompany the Zoom session, and allow you to both be prepared for the session, and make full use of the limited time available, and also serve to allow you to both take notes and review the areas covered.

The aim of these sessions is to make you feel more confident. Not to turn you all into paramedics. We will cover areas such as:

- Who are CHT?
- Legalities
- How the heart works
- How to recognise a Cardiac Arrest
- What is 'fibrillation' and how a 'de-fibrillator' works
- How to do chest compressions
- How to use your defibrillator
- Recovery position
- Handing over to the paramedics
- What to do afterwards.

...and allow you to ask questions.

Good Zoom etiquette

1. Please be prepared for the session and arrive on time.
2. Start your entry into the Zoom room about 5 minutes before the start. This way you can get to know the features and also explore the Zoom room. You may have to be allowed to enter – a bit like knocking on someone's door and waiting for them to open the door. Please be patient. You will be admitted!
3. Your video will automatically be enabled when you enter, but your sound will be muted. You can unmute to speak by using your space bar on your keyboard.
4. If you need to ask a question, either raise your hand, or use the hand raising feature in Zoom. Alternatively, put a message on the 'chat room whiteboard' and we will come back to this at the end.
5. Any disruptive people will be 'Zoomed out' – please respect that everyone has a right to be heard – no question or comment is stupid. If it is important to one person, there will be others who share the same comment or question.
6. Enjoy – get involved – participate! There are no tests.



For your session, please bring along a strong pillow, or two toilet rolls, taped together, for practicing CPR. Zoom sessions are Covid secure !

Who are CHT?

The Community Heartbeat Trust is a national medical charity whose aims are to help and support communities in the correct provision of defibrillators, but in a sustainable, resilient and governance led manner. Defibrillators (also known as AEDs) are medical devices that help and support a rescue for a patient in Cardiac Arrest. They achieve this by applying a current of electricity across the heart to stop the heart and allow it to reconfigure automatically. Death from Cardiac Arrest if untreated is about 97% of cases. With the correct and rapid treatment, survival to hospital can in theory be raised to around the 70% mark, but this assumes rapid action, good CPR (chest compressions) and also the timely use of a defibrillator. The heart degrades by around *20% per minute* after a Cardiac Arrest, and so the faster help can be given the better the outcome. The process is known as the ‘**Chain of Survival**’. You can influence stages 1 to 4. The faster, the better!



CHT also ensures that communities obtain the correct defibrillators equipment, equipment that is designed for the task and conforms to the various legislative requirements, such as disability laws. We also review and ensure the storage cabinets meet the right requirements for the need, and in this case, this means storage that will not cause condensation, is heated with the right type of heater, conforms to health and safety, plus electrical safety requirements, and meets disability requirements. Suitable cabinets are branded as meeting the ‘ShockBox’ standard.

All CHT projects are undertaken with the WebNos Governance system as standard, and CHT takes care of all communication with ambulance services regarding registrations, etc.

CHT were the originators of the use of telephone kiosks for defibrillator use and now have around 1000 sites using kiosks. We are the partner organisation to BT and the only approved installer from BT (despite what some organisations claim). All kiosk installations are registered onto the WebNos Governance system so BT can monitor electricity usage, and the local ambulance service are aware of the location and status.

All CHT projects are supported by DefibShield anti-theft service, and also post rescue counselling. They are also supported by a range of add on services suitable for the location. Typically, these include the VETS service, which is a Volunteer Emergency Telephone System helping communities address the lone rescuer and spread out community. Many ambulance services set a limit to activate a community defibrillator which means most locations will not have their defibrillator covering more than a small area of the community. The VETS service allows for additional volunteers in the community to help come to the rescue. VETS can also be used for other services such as neighbourhood watch and care for the elderly.

CHT is an advisor to NHS England and also NHS Wales, and a founder member of the Save a Life Cymru (SaLC) programme. To date, we have helped over 6000 communities.

Always call 999 Ambulance in an emergency.

“I am very grateful to CHT for the help they give me with our community defibrillator project. Martin and all the staff helped me every step of the way and really put themselves out to get the defibrillator and cabinet ordered and delivered in time to have a ‘grand opening’ to coincide with switching on the Christmas lights. Thank you team, I could not have done it without you.”

CHT is a charity, and does not make profits for shareholders or similar. All excess funds are used to support the charitable objects, and CHT donates defibrillators to needy causes, such as homeless centres and children's homes. Your work with CHT supports other needy causes.

Background information

Clearing the myths - What myths or misinformation is there surrounding a defibrillator?

You do not need training – incorrect. The guidance states that training is *advisory*, but that anyone who is not trained should not be prevented from using a defibrillator. Defibrillators should also never be marked 'trained users only'. This does not mean training is *not required*. You will still require training on doing good CPR, the recovery position, the process, post rescue strategy, and recommissioning. Your public liability insurances will generally require proof that training has been reasonably offered.

All defibrillators are the same – no they are not. All cars are not the same, but they all have 4 wheels and an engine. All defibrillators will give a shock when required and IF their sensitivity and protocols are set correctly. However, the shock may vary in style, shape, power, duration and ability of the device to adapt to different scenarios. The defibrillator also generally has some *audio* instructions, but again these will vary depending upon model, and most modern devices also have visual display units to cater with regulations and disabilities. Generally, older devices have less informative instructions and generally only audio, whereas modern devices have more comprehensive instructions, tailored to the end user, and *visualisation*. You should always consider who is going to use this device. If public access, then you have no idea, and so should cater for all instances. Be aware of statutory requirements, such as disability laws.

We have children, therefore need a device that can be used on children – misunderstanding as to what constitutes a child? A child in defibrillator terms is under 25kg in weight, or typically in the UK, 7 and under in age (may vary according to ethnicity and body size). ALL defibrillators can be used on 'children'. Some have switches that can be used if no paediatric electrodes are available. Some have switches with adult/paediatric electrodes. Children are not adults and have different physiology and algorithms. Thus generally, in a public access situation, most ambulance services do not advise having switches or other paediatric elements, as this causes misunderstandings and distress in a rescue, and potentially incorrect use of the equipment, with the resultant issue later on with the coroner. SCA in the under 7 is very rare, typically about once every 3000 years in an average community. Unless you have a child at risk, and are prepared to train your community in paediatric SCA, then there is no need to have this as a consideration.

Defibrillators look after themselves – Defibrillators are mechanical devices and so should be checked regularly to ensure they are in a working order. Depending upon the device, as they all do this differently, the defibrillator will conduct a self-check to ensure that it has no errors *in its electronics* preventing it working correctly. If an error is found, it will indicate this according to its design method. A human still needs to see if the checks are showing a good working order or a fault. Some modern devices will transmit an error code, but these are expensive and use up the battery significantly, assuming that the feature can be enacted to begin with (cellular coverage, WiFi limited). Most defibrillators do not yet cover the patency of the electrodes and so the electrodes should be visually checked regularly, and resupplies ordered *before* the expiry date. In addition, as many are stored in cabinets, these too need to be regularly checked for bot access and safety reasons. You should check the equipment in line what the manufactures recommendations. This is usually daily or weekly. Do not under any circumstances go beyond a month between checks, as this opens up a significant liability, and may invalidate any insurances you have. All checks should be reported in a good governance system such as **WebNos**, along with any other information relating to your defibrillator site, such as training records, investigations, resupply information, and also registers your AED with the ambulance service.



Why do I need good signage? – Your defibrillator is a medical device, and only effective if it can be found quickly in an emergency. Many defibrillator cabinets used in the public domain do not have clear and unambiguous instructions on, or may fail disability or regulatory information. You should have at least 1 x 3D sign high above the location so that it can be clearly seen from at least 50m away. This means a clear and easy to understand sign, large enough to be seen and understood at 50m. This should be the **ILCOR** international defibrillator signage only, and not one of the many different signage types in use in the UK, that are causing confusion. Additional signage should be placed within a 200m radius of the defibrillator indicating the direction and ideally distance to the defibrillator. In addition, regular notices in community publications should be broadcast to ensure everyone knows the location. Assume a complete stranger needs to find the defibrillator quickly. Any signage or instructions on the defibrillator cabinet must comply with disability requirements, and also be accurate and truthful, and not misleading. For converted kiosks, note that if listed, the ‘telephone’ signage may have to remain, but you still need to make it very clear that this is no longer a telephone, as this would be misrepresentation under Health and Safety regulations.



Throughout the world the signage used for identifying a defibrillator is a **heart with a lightening flash** through (visuals left). There are different interpretations of this, in red and green, but the general principal is established. In the EU, and in South America, the standard is the **ILCOR** recommended signage of the white heart on green background, with the lightening flash and cross. This is recognised by over 96% of the UK population as representing a defibrillator, and places such as airports and railway stations, where there are international travellers, or tourists, it is essential these sites are instantly recognised by everyone.

In recent years, the UK has been plagued with 13 different defibrillator signage styles, with the result confusion is occurring, and the risk that in an emergency, the locations will not be recognised. CHT policy is always to use the international **ILCOR** defibrillator signage (above left), which is ISO 7071 compliant, supported by the European Resuscitation Council, and compliant to the Health and Safety (safety signs and signals) regulations, 1996. New guidance on signage comes into force in 2021, which CHT already adheres to.

The plethora of defibrillator signs used in the UK is causing confusion



RC(UK)

BHF

ILCOR International sign



Why do I need a heated cabinet – Most defibrillators are only certified for storage at above freezing point. This is because the electrodes and batteries degrade below freezing. Thus, as you will be liable for the correct functioning of the device, you have to mitigate risk. You should store the device above freezing, and this means in the UK in most locations a heated cabinet. Please be aware, not all heated cabinet are the same! There are cabinets that have been shown to set fire to contents. There are also others that are mains powered yet do not meet electrical safety regulations. Metal cabinets have been shown to have condensation issues and this may damage your defibrillator and prevent it working in an emergency. All cabinets should be IP55+. CHT normally use low voltage class 2 cabinets for safety, and where possible double skinned or thermally balanced. Signage on the cabinets is also an issue. Many cabinets have incorrect or misleading instruction sets, or fail disability guidance.

Some cabinets are locked, and require a keycode to access. Others are unlocked. On the 999 call the ambulance service will advise the nearest available defibrillator and how to gain access.

So, let's begin!



Let's address the legal issues

- Can I be sued?
 - No
- You are protected under three elements of law...
- Calling 999 – NHS takes clinical liability
- SARAH Act 2015
- Laws over being sued
 - Litigant would have to prove you made the situation worse than its natural outcome which is death!



Notes :

Calling 999

- Everyone knows how to call 999....but only 5% have ever done this
- 999 is a service run by BT for the UK government EMS
- Operator will ask you which service
 - Fire : police : ambulance : (coast guard) : (mountain rescue)
- Ask for 'Ambulance'
- The ambulance operator will ask you only 2 questions:
 - Is the patient breathing? Is the patient conscious?
 - If negative to either, they will ask you to start 'chest compressions' within 60s of your call being taken.
- Ambulance automatically dispatched to your location

Calling 999

- Once chest compressions underway, Ambulance EOC operator will ask:
 - "Are you on your own or is there someone else with you?"
- If on your own, they will instruct you to continue doing chest compressions until help arrives or the patient recovers consciousness.
- If someone is with you, they will be instructed to go and collect a defibrillator from the nearest *active* and *available* location (if within the *activation radius*)
- If locked location, they will be instructed how to gain access (eg access code).

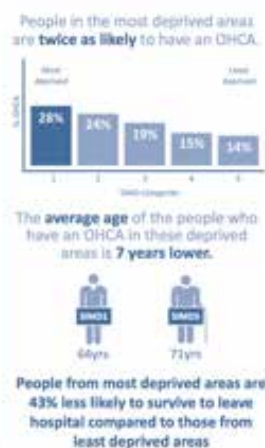
Notes :

How would you recognise a Cardiac Arrest?

- No breathing or irregular breathing
- Colour (caused by no blood flow)
 - Pale
 - loss of colour
 - Blue/grey pallor
- Unresponsive (lack of oxygen to brain)
- 92 causes of a Cardiac Arrest
 - Heart attack - Choking - Electrocutation - Asphyxia
 - How many can you name?

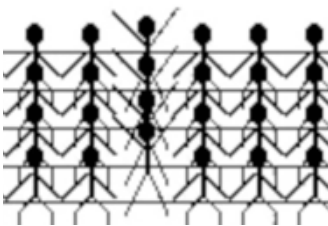


www.gov.scot/Resource/0052/00523287.pdf



Causes of SCA/OHCA:

- Heart Attack
- Choking
- Electrocutation
- Asphyxia
- Drowning
- Carbon Monoxide
- Severe Asthma
- COVID 19




HEART ATTACK?	CARDIAC ARREST?
CRUSHING CHEST PAIN SHORTNESS OF BREATH SWEATING CAN BE SUDDEN, BUT ALSO CAN BUILD OVER MINUTES TO HOURS. IS CAUSED BY A BLOCK IN THE CORONARY ARTERIES, USUALLY A BLOOD CLOT IF NOT ALLERGIC HAVE THE VICTIM CHEW AN ASPIRIN IF THE PERSON HAS AN OXYGEN TANK TURN IT ON AND TURN IT UP. TRY TO KEEP THE PERSON CALM UNTIL HELP ARRIVES	THE VICTIM STOPS BREATHING AND CANNOT RESPOND VICTIM BECOMES UNCONSCIOUS ALMOST IMMEDIATELY CAUSED BY AN ELECTRICAL MALFUNCTION THE HEART STOPS BEATING OR QUIVERS LIKE A JELLY BEGIN CHEST COMPRESSIONS AS SOON AS POSSIBLE IF YOU ARE ON YOUR OWN CONTINUE UNTIL THE AMBULANCE ARRIVES 999 CALL HANDLER WILL DIRECT YOU TO THE NEAREST AVAILABLE COMMUNITY DEFIB IF SOMEONE IS WITH YOU TO COLLECT

Understanding Chest Compressions

- One hand over another; elbows straight & locked
- Press down chest 2 x per second (120 times per minute)
- Depth 5-6cm on an adult / 1/3 chest depth (small frame)
- Allow a full recoil of the chest between compressions
- Because of Covid, place a light cloth over the patients face
- Do not give breaths
- Use a pillow or toilet rolls to practice at home
 - You cannot harm the patient
 - Don't worry if you hear a 'crack'....just carry on...



Understanding Chest Compressions

Continue without breaks until...

1. Patient recovers (unlikely in Cardiac Arrest, but may happen if *respiratory* arrest)
 2. You are **too tired** to continue (try taking a 15s rest after every 200 compressions)
 3. **Someone or something** tells you to stop
 - Eg another rescuer
 - The defibrillator commands you.
- The person bringing the defibrillator is in charge of switching it on and following the commands to make it work
- **DO NOT STOP** chest compressions (until 1,2 or 3 above applies)

Notes:

Using your defibrillator

- Your defibrillator is....



Using your defibrillator



Notes:

How would we know if a successful rescue?

- | | |
|---------------------------------------|-------|
| • Is the patient breathing? | ✓ |
| • Is there movement? | ✓ |
| • Is colour returning to face? | ✓ |
| • Is the patient becoming responsive? | maybe |
- If **no** – continue Chest Compressions - Defibrillator will continue to monitor and may advise another shock.
 - If **yes** – place into ‘recovery position’



Recovery position

- If the patient shows signs of recovery, place them in the **recovery position** ('sleeping' position)
 - Assuming the patient is on their back:
 - Place patients opposite hand against their cheek
 - Raise furthest knee
 - Pull towards you, using raised knee and arm to assist you
- Make sure airway is clear



Notes:

After the rescue

- Handover to the ambulance crew
 - Tel them what has happened
 - How long
 - Name and age of patient if known.
- Return the defibrillator to the cabinet where you found it
 - Someone will recommission this and make it rescue ready again.
- De-stress
 - Talk through with someone
 - Recognise patient confidentiality
- Counseling is available if required



Defibrillators save lives...but only as part of the 'Chain of Life'

Notes:



Resources for further learning

Life long learning

- Videos:
 - <https://vimeo.com/444871640> CPR and Covid (RCUK)
 - <https://www.youtube.com/watch?v=i4V-KYmtmFk> (NARS)
 - <https://www.youtube.com/watch?v=nZ33U2GfEB0&t=1s> (CHT)
 - <https://www.youtube.com/watch?v=ozzZVQQTvo4> (CHSAS)
- Lifesaver interactive learning programme (RCUK)
 - www.lifesaver.org.uk
- American Heart Association tutorials



Thank you !

Leading the way in Community defibrillation

The Community Heartbeat Trust Charity

0330 1243 067

www.communityheartbeat.org.uk

Always use the correct
Defibrillator signage



This image shows a blank sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.



www.communityheartbeat.org.uk
www.nddb.uk
www.minutesmatter.org.uk

0845 86 27739
enquiries@communityheartbeat.org.uk

IF SOMEONE COLLAPSES FOLLOW THESE INSTRUCTIONS

**D**

DANGER ENSURE THE SCENE IS SAFE

FOR YOURSELF AND OTHERS. IF IT IS NOT SAFE OR YOU ARE UNCERTAIN CALL 999 AND WAIT FOR HELP TO ARRIVE

**R**

RESPONSE CHECK THE CASUALTY NEEDS HELP

CHECK RESPONSE BY **TALK AND TOUCH**.

SPEAK TO THE CASUALTY IN BOTH EARS, TAP COLLAR BONES. DO NOT SHAKE THEM!

**S**

SHOUT SHOUT FOR HELP

IF THE CASUALTY DOES NOT RESPOND, SHOUT FOR HELP.

DO NOT LEAVE THEM AT THIS STAGE. **DIAL 999 NOW!**

**A**

AIRWAY ENSURE AIRWAY IS OPEN AND CLEAR

OPEN THE AIRWAY BY LIFTING THE CASUALTY'S CHIN AND TILTING THEIR HEAD BACK. DO NOT PUT YOUR FINGERS IN THE CASUALTY'S MOUTH, YOU MAY PUSH AN OBSTRUCTION FURTHER DOWN.

**B**

BREATHING LOOK, LISTEN & FEEL FOR NORMAL BREATHING

KEEP THE HEAD TILTED BACK AND LISTEN FOR BREATHING & LOOK TO SEE IF THE CHEST IS MOVING FOR AT LEAST 10 SECONDS. IF THE CASUALTY IS NOT BREATHING NORMALLY OR YOU HAVE ANY DOUBT, **CALL 999!**

**C**

COMPRESSIONS NOT BREATHING NORMALLY? START COMPRESSIONS!

PLACE YOUR HANDS IN CENTRE OF THE CASUALTY'S CHEST AND PRESS DOWN HARD. JUST DO COMPRESSIONS. YOU CAN DO BREATHS IF YOU FEEL CONFIDENT - 2 BREATHS FOR EVERY 30 COMPRESSIONS - PUSH TWICE PER SECOND

**D**

DEFIBRILLATION GET SOMEONE TO FETCH A DEFIBRILLATOR

IF YOU ARE ALONE DO NOT LEAVE THE PATIENT, DO CHEST COMPRESSIONS AND WAIT FOR HELP TO ARRIVE, IF SOMEONE IS AVAILABLE SEND THEM TO GET YOUR NEAREST COMMUNITY DEFIBRILLATOR



0845 86 27739

Comheartbeat

www.communityheartbeat.org.uk

Registered Charity
No. 1132824



SEE HOW EASY IT IS TO USE AN AED

