

## Module 6

# Cardiac Arrest Part 2: CPR and Automated External Defibrillation (AED)



### Learning Outcomes

Pupils will:

- learn how to use the DRSABCD mnemonic to help them remember the steps to follow in an emergency;
- learn how to perform chest compressions and rescue breaths, and the ratio of compressions to breaths;
- learn what a defibrillator does and how it does it;
- learn the different abbreviations for a defibrillator; and
- learn how to apply and use a defibrillator and consider key factors when applying defibrillator pads and reasons why these are important (the 7Ps).



### Resources

- **Cameron's Day** clip and/or **The Library** clip
- **Skills Cards: 6a How to Give Rescue Breaths** and **6b How to Carry Out CPR**
- **Activity Cards: 6a Get the Rate, 6b Rescue breathing, 6c Emergency Action** and **6d Act It Out**
- **Everything You Need to Know About Defibrillators** clip



### Teaching Notes

- Show **Cameron's Day** or **Library** clip from the previous module again.
- Remind pupils what has happened to the person being rescued – his heart has stopped pumping blood around his body and he is in cardiac arrest.
- Recap Module 2, including:
  - checking for danger;
  - checking for a response;
  - shouting for help;
  - opening the airway;
  - checking for normal breathing; and
  - chest compressions.
- Explain rescue breaths to your pupils: that they need to transfer the air from their body into the casualty's lungs so that they get oxygen. Then the chest compressions will be pushing oxygenated blood around the body.
- Make clear that CPR is 30 chest compressions followed by two rescue breaths and continue to repeat.
- The decision to give rescue breaths lies with the rescuer. Should they choose not to do this, they should perform continuous chest compressions. Discuss with class different scenarios when they may decide to give / not give rescue breaths.
- Demonstrate rescue breaths using **The Four Stage** teaching approach.
- Remember rescue breaths are not like blowing up a balloon, where you take a big breath. The rescuer should take a normal breath and blow into the casualty's mouth or via a face shield or pocket mask until they see the chest rise. Perform no more than two breaths for every 30 compressions.



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### Rescue Breaths Demonstration

- Open the airway using the head tilt and chin lift covered in **Module 2**.
- Pinch the casualty's nose closed.
- Allow the casualty's mouth to open, but keep their chin lifted.
- Take a normal breath then place your mouth around the casualty's mouth, making sure no air can escape.
- Blow into the casualty's mouth for about one second and watch their chest rise and fall.
- Ask the class to practise rescue breaths with the manikins.
- Tell your pupils that they should not do more than two rescue breaths before going back to chest compressions. If the rescuer does not see the chest rise during these attempts their attention should focus on chest compressions to maintain circulation. Remember to always tilt the head back when giving rescue breaths.
- Demonstrate the complete sequence from checking for danger to chest compressions and rescue breaths.
- If the breaths being given do not raise the chest, there are three factors to consider:
  - **B**lockage: is something blocking the airway? It may not be possible to remove a blockage if it is not visible or cannot be reached.
  - **L**eakage: is the nose pinched and a tight enough seal around the casualty's mouth so that air cannot escape?
  - **T**ilt: is the head tilted back sufficiently?



### Full CPR Demonstration

- Check for danger.
- Shout for help.
- Open the airway.
- Check for normal breathing.
- If the casualty is not breathing normally, call 999 or 112 or ask another bystander to call for you.
- Kneel at the casualty's side.
- Rest the heel of your hand in the centre of the casualty's chest.
- Put the heel of your other hand on top of the first hand.
- Interlock your fingers. If you cannot interlock your fingers, lock the thumb of the upper hand around the wrist of your lower hand.
- Position yourself just over the casualty's chest, with your arms straight.
- Push down hard; aim to compress the sternum (chest bone) by 5 cm to 6 cm.
- After each compression, release all the pressure but keep your hands in place.
- Repeat around 100-120 times a minute.
- Give 30 chest compressions.
- Share the information on **Skills Card: 6b How to Carry Out CPR**. Divide your pupils into groups and ask them to take turns practising on their manikins.
- Tell your pupils that they should continue CPR until:
  - **H**elp arrives (another person can help you);
  - **E**xhaustion sets in (the rescuer cannot continue);
  - **A**mbulance arrives (medical professionals say thank you and take over);
  - **R**esponse occurs (the casualty makes meaningful movement, for example tries to push your hand away from their chest); and
  - **D**efibrillator instructs (do not touch the patient).

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- Remember the acronym **HEARD**.
- Tell pupils that it is okay for several people to take turns to perform CPR. They can swap every couple of minutes, but it is important not to leave a gap when they swap over.

### DEFIBRILLATOR AWARENESS



- A defibrillator (sometimes called an AED – Automated External Defibrillator – or PAD – Public Access Defibrillator) is a machine that can help someone who is having a cardiac arrest. It gives them a controlled electrical shock that will stop their heart and then restart it again.
- Many schools and other community buildings such as supermarkets and train stations have defibrillators. They are very easy to use and can save someone's life if they are in cardiac arrest.
- Make sure your pupils know what a defibrillator is and where to find one in an emergency.
- Tell your pupils that when they call 999 or 112, the ambulance service EMD will tell them where the closest emergency-ready defibrillator is. If it is in a locked cabinet, they will give them the access code. It is important that when the ambulance crew arrive the community defibrillator is returned to the cabinet or building it was taken from. The guardian of the defibrillator will be informed by the ambulance service that their device has been deployed, if they directed a rescuer to retrieve it.
- The ambulance crew may remove the pads of the community defibrillator and apply the pads of their defibrillator instead, so it is important to continue CPR until they do that.
- Here are some 'P's to consider when applying the defibrillator pads to the chest:
  - **Pretty hairy** – use a razor from the Rescue Ready kit to remove excess hair so the pads stick to the skin;
  - **Pacemaker** – small metal box that is usually located under the skin on the left upper chest. The AED pad is usually placed on the right upper chest, so should not interfere with the metal of the pacemaker;
  - **Pendant** – no need to remove but just ensure the pad is not placed on top of any jewellery;
  - **Perspiration** – remove with a paper towel;
  - **Playtex** – bra should be cut at the centre so that the left-hand pad can be applied to the side of chest under left armpit;
  - **Piercings** – do not need to be removed, but be aware of their location when placing the pads; and
  - **Patches** – only remove and dry the area if the patch is where a pad needs to be placed.
- Defibrillators should have a Rescue Ready kit containing:
  - a razor;
  - tuff cut scissors;
  - disposable gloves;
  - paper towel; and
  - face shield or pocket mask.

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### Extension Ideas and Cross-Curricular Links

- **Learning for Life and Work (Personal Development), Science and Technology (Biology)**
  - Ask pupils to research and present on the role of the lungs and how breathing supports the body.
- **Language and Literacy, The Arts (Drama)**
  - Use drama and role play to explore when and where a person might have a cardiac arrest. Use this activity to reinforce the sequence of events they need to remember.
- **Learning for Life and Work (Personal Development) Science and Technology (Biology)**
  - Ask your pupils to carry out rescue breaths on a balloon to show how lungs inflate and deflate in the chest.
- **Learning for Life and Work (Personal Development, Citizenship) Environment and Society (Geography)**
  - Ask your pupils to map all the defibrillators in their school or area. This will increase their familiarity with them and help them to locate one in an emergency.
- **Learning for Life and Work (Personal Development) Numeracy**
  - Ask your pupils to go from the classroom to the school defibrillator, timing how long it takes to get there and get back.
- **Learning for Life and Work (Personal Development, Citizenship) Numeracy, Language and Literacy**
  - If your school does not have a defibrillator, encourage your pupils to come up with ideas about how to raise funds to buy one. These could include running a fundraising event or approaching local businesses for sponsorship.
- **Learning for Life and Work, (Personal Development, Citizenship) Language and Literacy**
  - Hold a class debate on the pros and cons of having defibrillators within the school grounds or outside, but close to the school grounds. Encourage them to consider factors such as accessibility, security, cost, installation or liability.
- **Learning for Life and Work, (Personal Development), Language and Literacy, Using ICT**
  - Encourage pupils to research cases of cardiac arrest. These can be news stories relating to famous cases, such as Christian Eriksen, or stories of people who live more locally. Ask them to retell the stories, paying particular attention to the role CPR and AED played in saving a life.
- **Learning for Life and Work (Personal Development, Citizenship), Language and Literacy, Numeracy**
  - Discuss with your pupils the ideal locations for AEDs and where they are most likely to be needed. Ask them to research which of the locations they have mentioned have AEDS available. Encourage them to comment on where AEDS have been placed at these locations and their accessibility. Pupils could present data showing the results of their research in the form of a graph, database or chart.

