

Advanced Resuscitation Techniques Certificate



HLTFA404A Apply advanced resuscitation techniques

PUAEME003C Administer oxygen
in an emergency situation

PUAOPE010B Operate a semi automatic defibrillator in an emergency)



AUSTRALIAN LIFESAVING
ACADEMY

VER: 1.0 130709

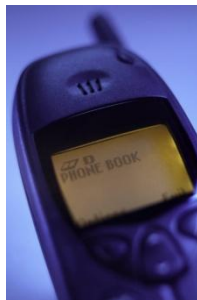
Housekeeping



**Course
Timings
& Breaks**



Facilities



**Phones/
Pagers**

Emergency Evacuation



Exits



**Assembly
Point**

- **Language, Literacy & Numeracy.**
- **Incident/Injury notification.**
- **Prerequisites.**
- **Appeals Process.**
- **Enrolment form.**

Course Information

Why Upgrade?

- 🚩 New industry competency standards
- 🚩 Align SLISA first aid and resuscitation training with industry best practice

Topic 1 – Oxygen Gap Review

Learning outcomes

On completion of this topic candidates will be refreshed in:

- 🚩 chain of survival
- 🚩 principles of oxygen use during resuscitation.

Brainstorm

- 🚑 The chain of survival and how resuscitation equipment supports it
- 🚑 First aid issues relating to a multicultural society
- 🚑 Shock
- 🚑 Ambulance response times to your club

Brainstorm

- 🚩 Post traumatic stress
- 🚩 Material Safety Data Sheets – where can I find them in my Surf Club and what information in them may be useful
- 🚩 Safe working environments for using oxygen and defibrillation equipment

Assessment



Assessment Task 1: Written Questions

Complete questions 1 - 7 in your assessment portfolio now. (Participants completing the Suction only upgrade should also complete question 8)

Topic 2 - Suction

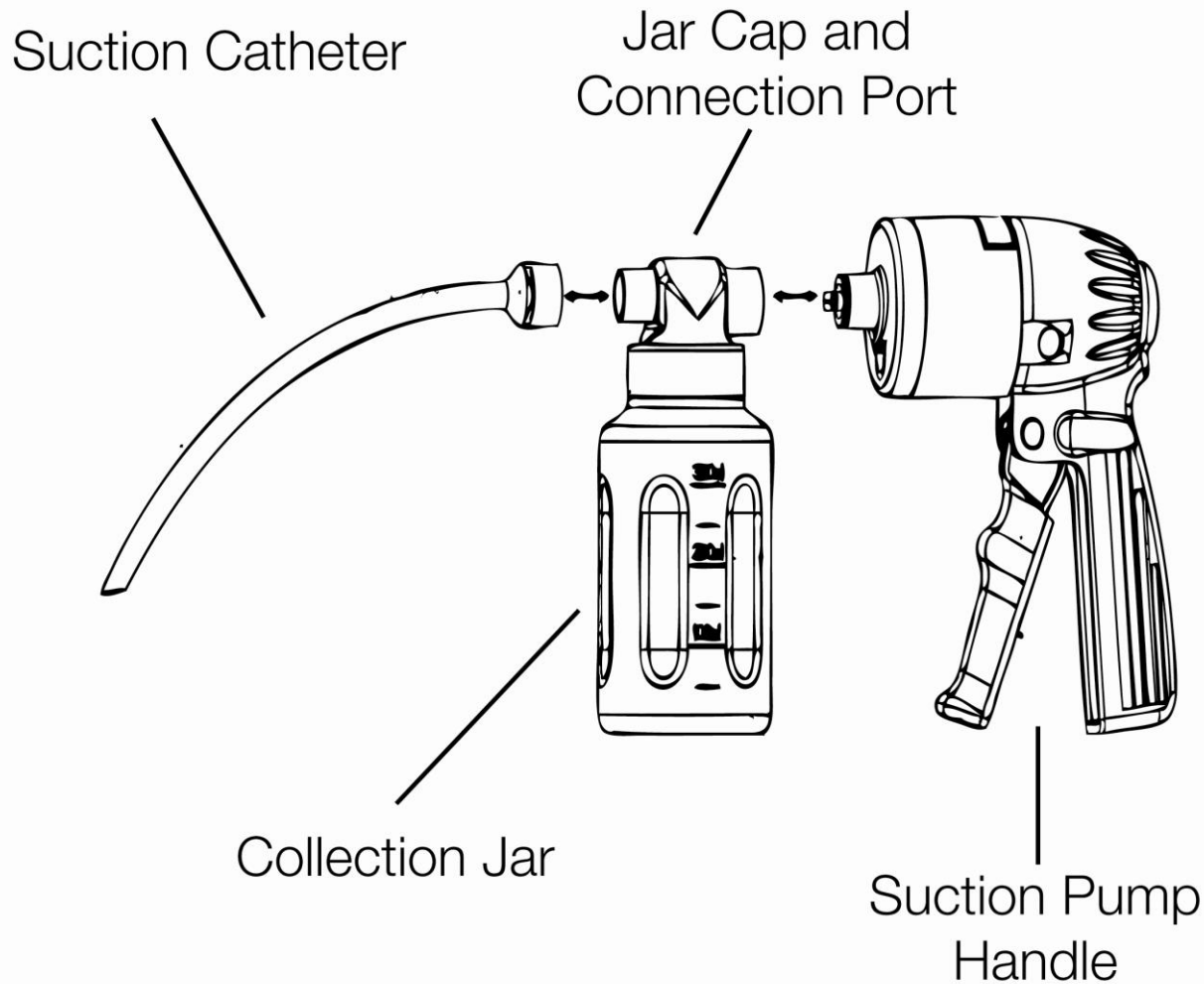
Learning outcomes

- 🚩 Pre-operational checks of suction devices
- 🚩 Administering suction
- 🚩 Post-operation maintenance of suction devices






Use Of Suction



Manual Suction Units



Failure of suction apparatus.

-  Oxygen supply exhausted (for oxygen powered units).
-  Suction tubing blocked.
-  Bottle full or cracked.
-  Seal missing or perished.
-  Not turned on.

Activity



Activity (Individual) 2.1: Suction equipment

Look at the suction equipment your club/service has available for use or the equipment you have been provided to train with. Identify the following components:

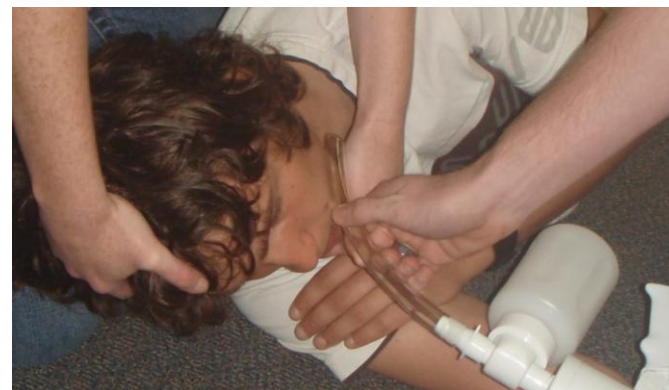
- Suction catheter
- Collection jar
- Jar cap and connection port
- Suction device
- Vacuum port

If you cannot identify all of the components check with your trainer. Your device may not have these exact components but will have something that performs the same function

Test the function of your suction device by performing the checks described in your learner guide

Suction Techniques

- ❏ Roll casualty on their side.
- ❏ Measure length of insertion on catheter
- ❏ Turn suction unit on (if battery or oxygen).
- ❏ Insert suction catheter inside bottom cheek.
- ❏ Use suction for 15 seconds only (five seconds for electric or oxygen powered) as extended use will deprive casualty of oxygen.
- ❏ Repeat procedure as necessary.



Measuring for lips to corner of the jaw



Suctioning – inserting no further than measured (top picture)

Activity



Activity (Group) 2.2: Administering suction

In pairs or groups of three, practice assembling your suction equipment and sizing the insertion distance on your partner. If an appropriate manikin is available practice performing suction.

NOTE: To ensure infection free training, do not place the suction catheter in your own mouth or that of your partner(s).

Assessment



Assessment Task 2: Peer Assessment - Suction

Ask peer to assess you as test and use the suction device to provide clear an airway



Assessment Task 1: Written Questions

Complete questions 9 - 11 in your assessment portfolio now.

Participants completing the suction only upgrade should complete their task 3 now






Assessment Task 3: Proficiency Scenario – Using Oxygen, suction and defibrillation during resuscitation

Your assessor will set a resuscitation scenario for your proficiency.

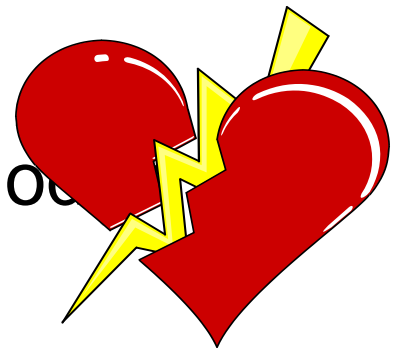
Topic 3 – Defibrillation

Learning outcomes

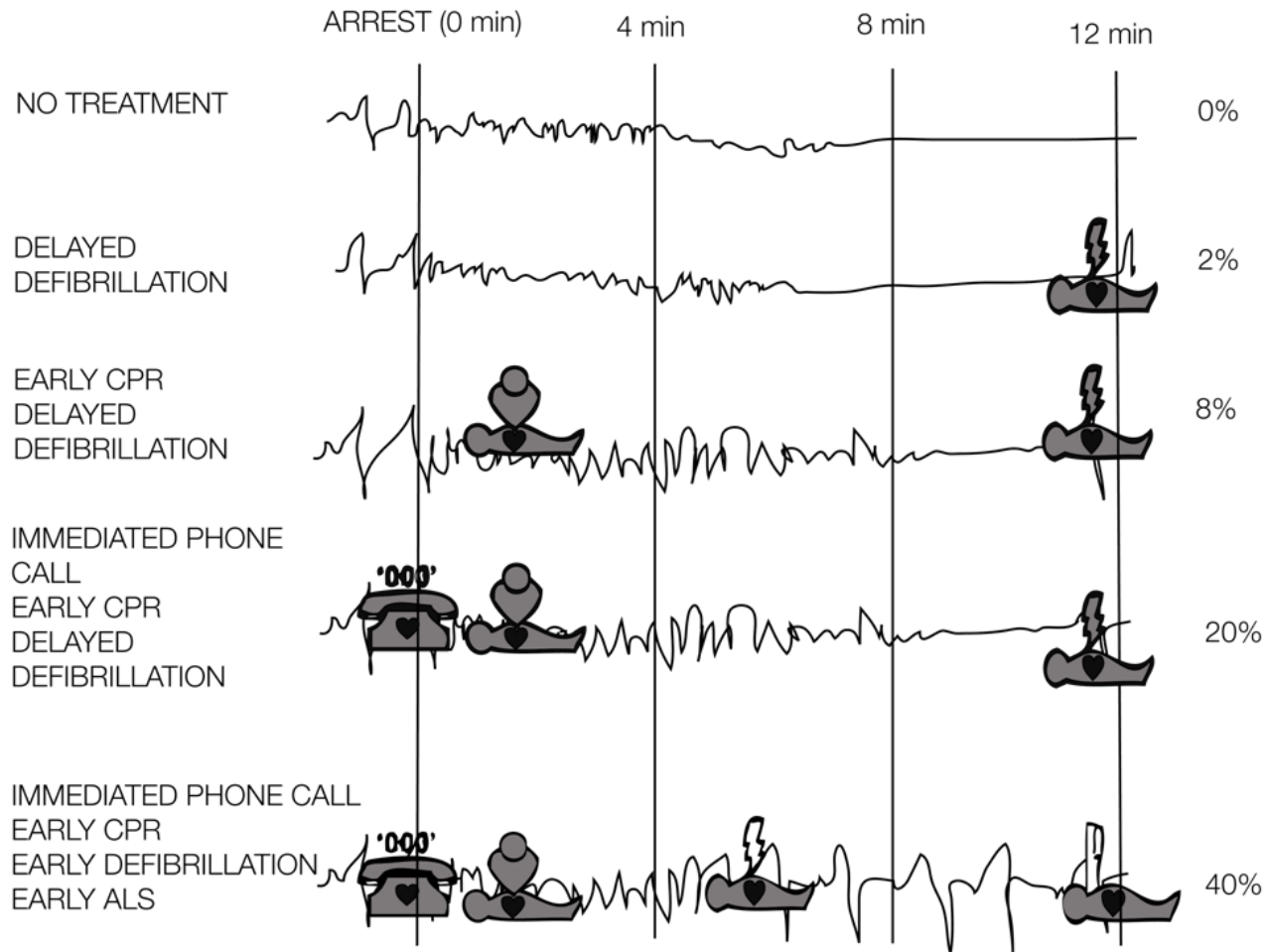
-  Check defibrillation equipment
-  Attach and operate a defibrillator
-  Recover and restore defibrillation equipment

What is defibrillation ?

- Defibrillation involves delivering an electric shock to revert the heart to its normal rhythm
- Heart attack / Cardiac arrest is a common cause of VF
 - The heart ceases to function effectively
 - Can cause permanent damage or death
- Defibrillation is the most effective method to reverse VF



Importance of defibrillation



Circulation within the heart

➤  **Right Atrium -Receives Blood from Body Pumped into:**



 **Right Ventricle -Pumps Blood to the Lungs**

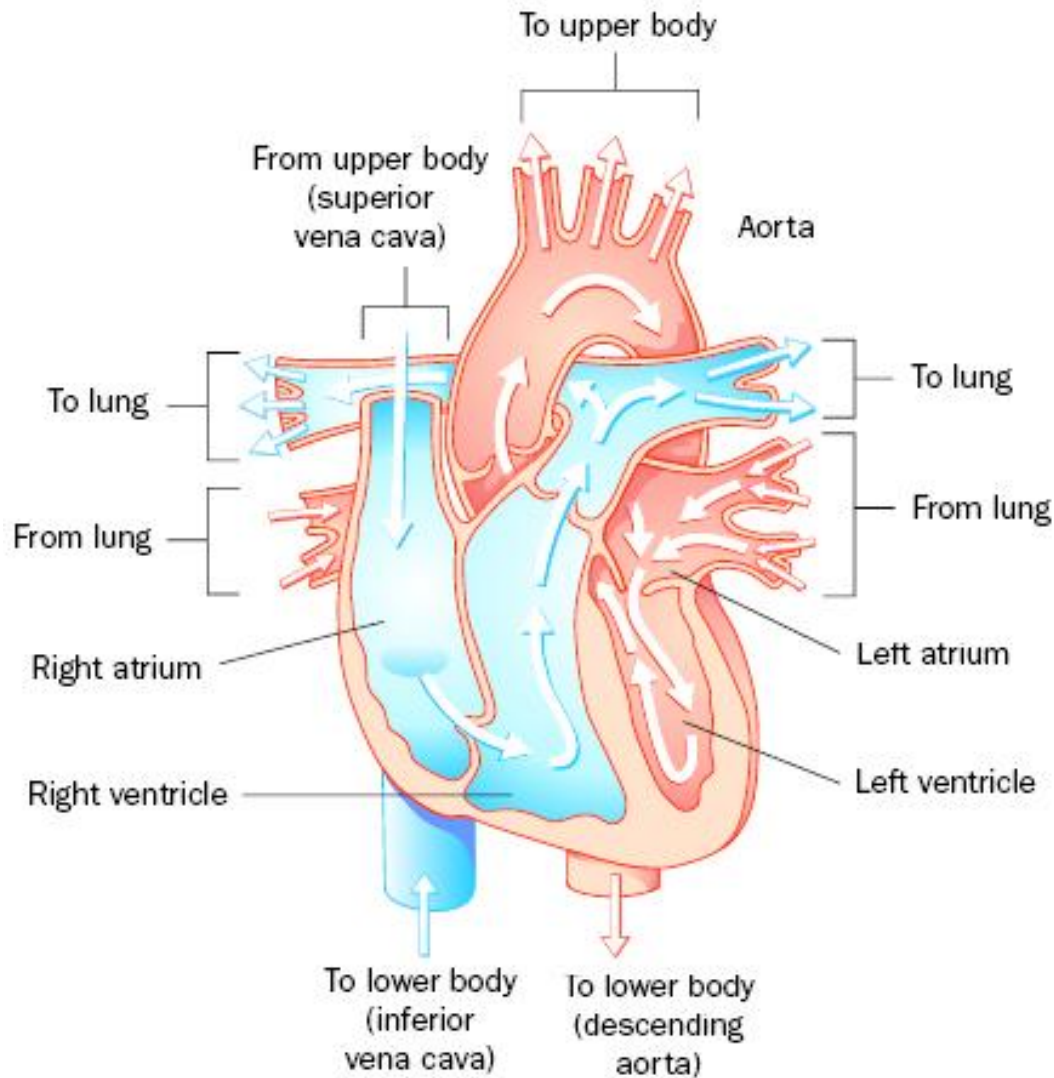


 **Left Atrium -Receives Blood from Lungs Pumped into:**



Left Ventricle -Pumps Blood to the Body

Circulation



Actions of the heart

🚩 Mechanical action:

🚩 The pumping of the heart

🚩 Electrical action:

🚩 Controls the rhythmic beat of the heart

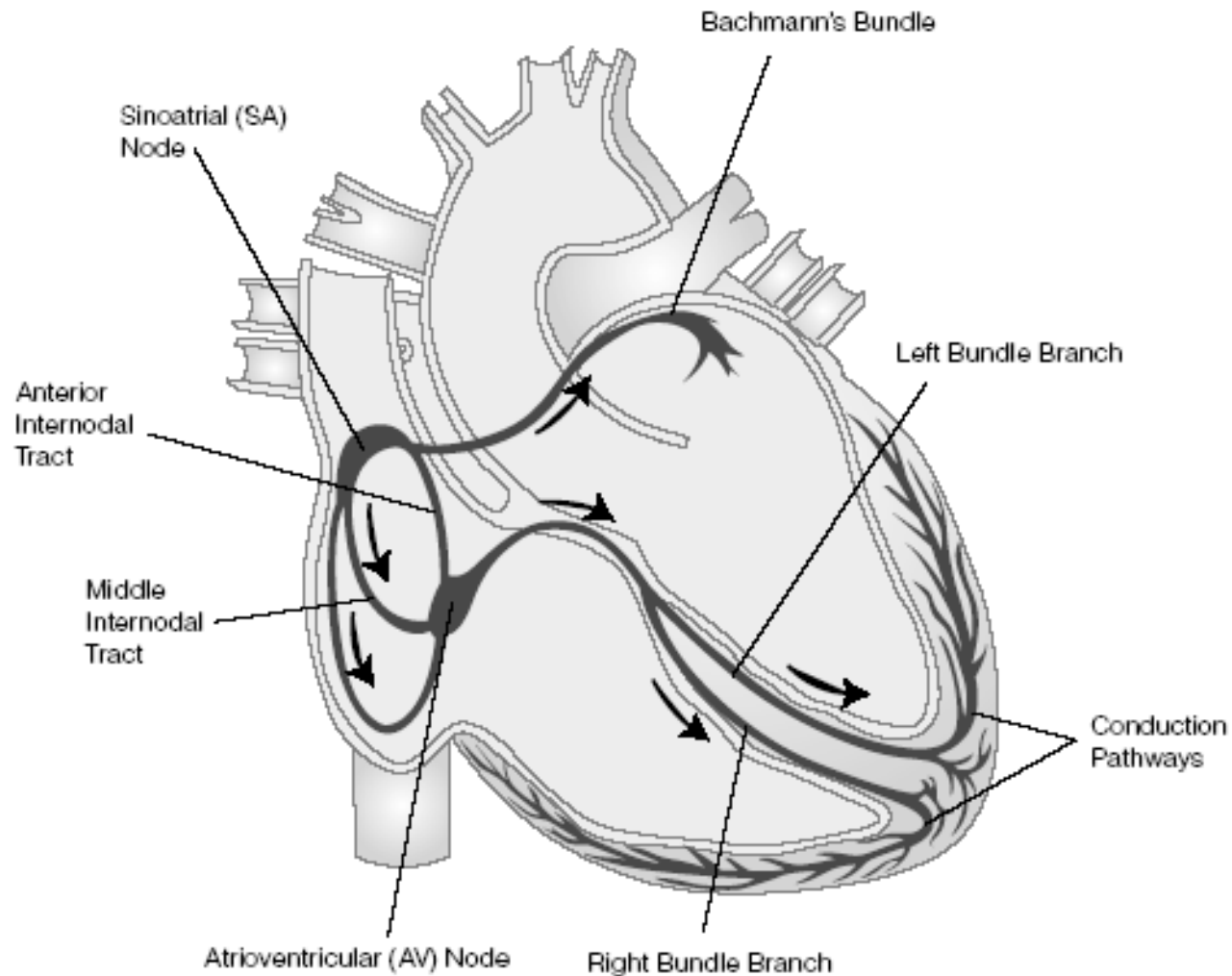
The Electrocardiogram.



🚩 The electrical impulse passing through the heart muscle can be mapped on a graph called an electrocardiogram (ECG)

Heart

Electrical action



The Electrical Action of the Heart

The normal pathway of electrical impulse through the heart is:

- 🚩 **SA** (Sinoatrial) Node –pacemaker
- 🚩 **AV** (Atrioventricular) Node–Electrical gateway between atria and ventricles
- 🚩 Right and Left Bundles/Purkinjie fibres–Distribution network of electrical impulse to both ventricles

Normal Heart Rates:

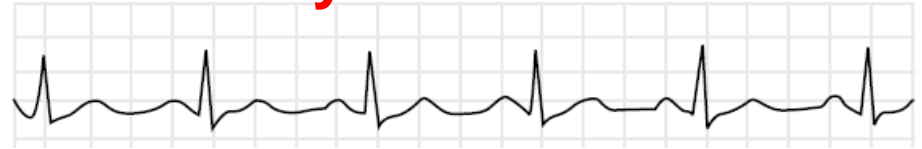
- 🚩 Infants/newborn 100-160 beats/min
- 🚩 Children 70-120 beats/min
- 🚩 Adults 60-100 beats/min

Electrocardiogram (ECG)

Cardiac Rhythm & Arrhythmias

Non shockable rhythms

Sinus rhythm
(normal heartbeat)

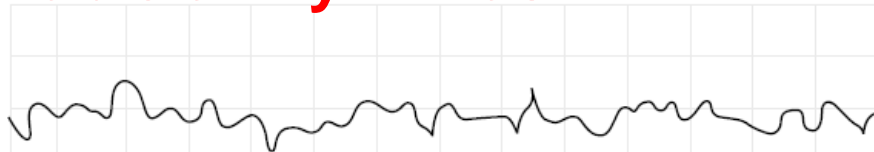


Asystole
(No heart activity)

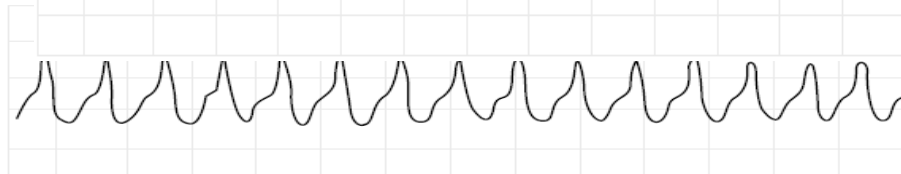


Shockable arrhythmias

Ventricular fibrillation
(Irregular muscle spasm)



Ventricular tachycardia
(quickenning pulse)



What is an AED ?

Automatic external defibrillators (AED's) are:

- 🚩 Portable devices
- 🚩 Able to recognise shockable rhythms in a casualty in cardiac arrest
- 🚩 Able to deliver an electrical shock to attempt to revert the heart back to its normal rhythm



SLSA Policy :
Only to be used on casualties
over 8 years or 40kg

Examples of defibrillators (AEDs)



Defibrillator components




Towel/ Chamois




Safety precautions

A safe working environment must be created before defibrillation can occur. The three danger areas are:

Contact





-  No person to be in direct or indirect contact with the casualty when shock is delivered “I’m clear, your clear”

Conduction

-  No conductive items near or on the casualty, including:
 -  Fluids, metal, body fluids on the casualty’s chest (sweat, blood, etc)
 -  Ensure you are clear of the incoming tide in the beach environment

safety precautions continued...

Explosion

-  Oxygen equipment, minimum 1m away
-  No combustible gasses/vapors
-  No naked flames
-  No flammable substances on clothes

Equipment checks

Pre patrol checks:

- 🚩 Run self test (as per organisational policy)
- 🚩 Defib pads in date and sufficient number (min 2 recommended)
- 🚩 All additional equipment is included and serviceable

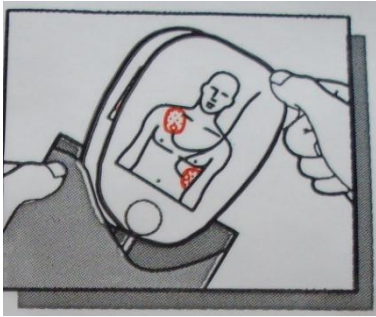
Major faults:

- 🚩 A major fault is anything that cannot be repaired through basic maintenance, or Defibrillator does not pass self test
- 🚩 All major faults should be logged in the patrol log and reported to the club/service First Aid Officer

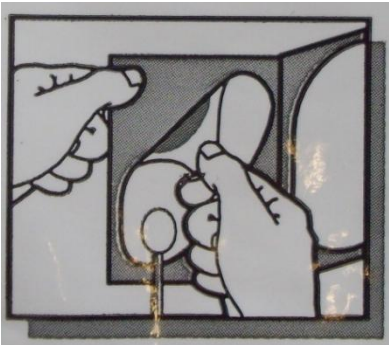
Prepare the casualty

- 🚩 Expose the casualty's chest
- 🚩 Trim chest hair if excessive
- 🚩 Dry skin if necessary
- 🚩 Remove jewellery
- 🚩 Ensure the casualty is not lying in water or on metal grates etc

Pad placement



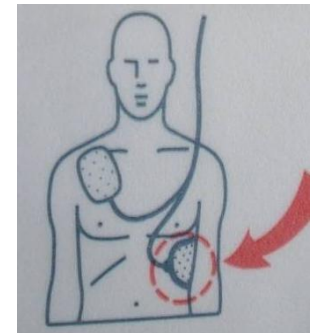
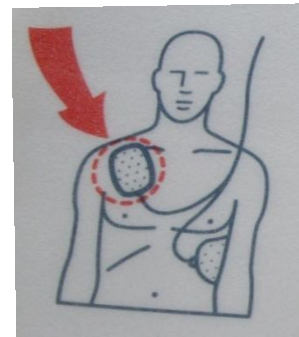
Remove Pads
from foil packs



Peel pads
from backing

Position pads as shown

- Use rolling motion
- No air bubbles



Note:

Do not remove pads after a casualty's pulse has returned

Do not place pads over medication patches

Ensure pads are at least 10cm away from implanted pacemakers

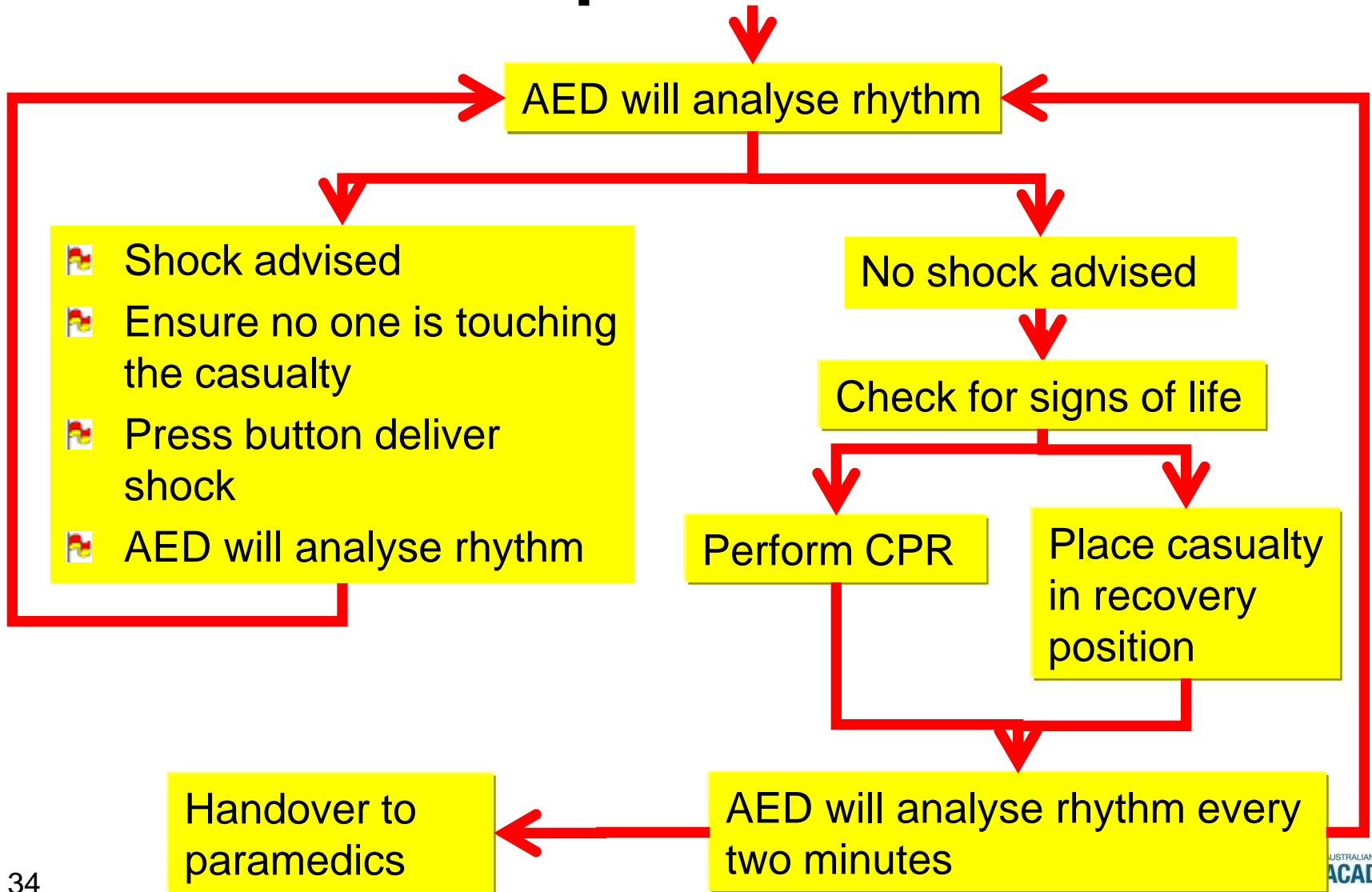
Defibrillation process

1. DRABC
2. Take control of the resuscitation (if in a team situation)
3. Check AED
4. Turn on AED
5. Prepare casualty's chest
6. Apply pads
7. AED will analyse rhythm - direct first aiders and bystanders not to touch the casualty

Continued on next slide



Defibrillation process continued...



Post defibrillation casualty care

If the defibrillation has not been successful and when the standard protocol has been exhausted:

- 🚩 Leave the pads on the casualty
- 🚩 Continue CPR until relieved or exhausted
- 🚩 Care for the family and friends of the casualty

If the defibrillation has been successful:

- 🚩 Leave the pads on the casualty
- 🚩 Check for breathing, if not breathing continue CPR
- 🚩 If breathing check response:
 - 🚩 No response- Lateral position
 - 🚩 Casualty is responsive- make comfortable

Post defibrillation Equipment maintenance

- After use the defibrillator should be disassembled, cleaned, disinfected as necessary, reassembled and tested as per manufacturers instructions
- Single use items such as electrode pads, gloves should be disposed of and replaced
- All other equipment should be cleaned, disinfected and replaced in the kit



Defibrillation Simulator/trainer

- Will not deliver shock, simulation only
- Realistic operation
- Actual voice prompts
- Used for initial training, re-qualification and refresher training



Activity



Activity (Group) 3.1: Applying an AED

In groups of three, practice performing two-operator CPR with the third person arriving and applying the AED. Rotate the roles until each person in the group has performed the role of AED operator.

Use the check list in your Learner Guide on page 59

Each participant should also apply the defibrillator and perform CPR as a single operator.

Assessment



Assessment Task 1: Written Questions

Complete questions 37 - 45 in your assessment portfolio now.



Assessment



Assessment Tasks 1 and 2

You should have completed assessment tasks 1 and 2 throughout your training, if any are not completed do them now.

Assessment Task 3: Scenario - Defibrillation

Complete the resuscitation scenario as directed by your assessor in teams of three.

Assessment Task 4: Proficiency Scenario – Oxygen and suction use during resuscitation

Your assessor will set you a resuscitation scenario for oxygen and suction use.