COMMONWEALTH DROWNING PREVENTION

CPR FOR LOW RESOURCE SETTINGS

A programme of The Royal Life Saving Society
www.rlsscommonwealth.org

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Contents

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Purpose

The RLSS is committed to extending reach with educational resources to help save lives of those in low or limited resources settings. Community CPR programs have been shown to save lives, and this booklet and related resources, are being made available to help those who could not otherwise afford materials to assist with the learning of these critical lifesaving skills.

The Royal Life Saving Society

The Royal Life Saving Society (RLSS), established in 1891 is a charity registered in the UK with the Charity Commission (number 306094) and is governed by Royal Charter. The RLSS has a presence in more than half of the Commonwealth countries under the patronage of HM King Charles III and presidency of HRH Prince Michael of Kent GCVO.

We take a drowning prevention leadership role in more than 30 Commonwealth countries in which we have a presence. Our accreditation with the Commonwealth Secretariat, as an Accredited Civil Society Organisation, gives us access to Commonwealth networks and helps us as we work together with various other organisations across different sectors to support communities in developing lifesaving education initiatives and drowning prevention programmes.

On behalf of and in support of our members we advocate for drowning prevention at an inter-governmental level, build the capacity of our member organisations and the drowning prevention and lifesaving sector and provide a collaborative network and opportunities for sharing and development.

Drowning

The WHO Global Status Report on Drowning Prevention (2024)[1] identifies that globally, there were an estimated 300 000 drowning deaths in 2021 – this is equivalent to more than 30 people losing their lives to drowning every hour of every day. Almost half of these fatalities are under the age of 29, and one quarter are under the age of five. Nearly all these deaths are preventable, and yet drowning prevention remains a neglected public health issue.

Drowning predominantly impacts children and young people. Children aged under 5 years account for the largest single share of drowning deaths (24%), with a further 19% of deaths among children aged 5–14 years, and 14% among young people aged 15–29 years. Globally, drowning is the fourth leading cause of death for children aged 1–4 years and the third leading cause of death for children aged 5–14 years.

Drowning disproportionately affects the poor and marginalized. The vast majority of drowning deaths (92%) occur in low- and middle-income countries, where drowning death rates are 3.2 times higher than those in high-income countries.

Safe rescue and resuscitation by trained bystanders are a drowning victim's best chance for survival[1].

Prevention is essential, because when someone starts to drown, the outcome is often fatal. Survival usually depends on the speed of rescue from the water and how quickly proper resuscitation can take place. So basic swimming, lifesaving and CPR education, skills and leadership can make a real difference to communities around the world.

The RLSS aims to develop community-based drowning prevention strategies and lifesaving education programmes, and to advise Governments, NGOs and individuals on the development of water skills to help reduce the terrible toll of death by drowning around the world.

[1] WHO Global Status Report on Drowning Prevention - https://www.who.int/teams/social-determinants-of-health/safety-and-mobility/global-report-on-drowning-prevention

1. Introduction

1.1 What is Cardiopulmonary Resuscitation (CPR)?

Resuscitation is trying to stop someone dying by using simple techniques to help them breath and circulate their blood.

If resuscitation is required, it should be started immediately to maximise the person's chance of survival.

Cardiopulmonary resuscitation (CPR) is the technique of chest compressions combined with rescue breathing. The purpose of CPR is to try to keep enough oxygen going to the brain to keep it alive until specialised treatment is available.

1.2 Chain of Survival

The "chain of survival" is a series of actions that, when done correctly, give the casualty the best chance of survival. Like any chain, the chain of survival is only as strong as its weakest link. The four links in the chain of survival are early recognition and call for help, early CPR, early defibrillation, and post resuscitative care. The following image is from the European Resuscitation Council Guidelines for Resuscitation 2015.

EARLY RECOGNITION:	EARLY CARDIOPULMONARY RESUSCITATION (CPR):	EARLY DEFIBRILLATION:	POST RESUSCITATION CARE:
Call for help and alert the emergency services (particularly an ambulance) as soon as possible in order to get professional help on its way.	Those who are present when a casualty has a cardiac arrest (heart stops beating) should start CPR as soon as possible.	This is a technique of applying a controlled electric shock across the chest to re-start the heart. **NOTE:** Defibrillators may only be available in hospitals in some low and middle-income countries.	This includes various medical and paramedical procedures such as injecting drugs into a vein or using specialised artificial ventilation equipment.

Adapted from the RLSSUK Life Support Manual

1.3 CPR Guidelines

Some countries and regions of the world promote guidelines on CPR and Basic Life Support (BLS). The guidelines are based on the International Liaison Committee on Resuscitation (ILCOR) 2015 Consensus on Science and Treatment Recommendations (CoSTR) for Basic Life Support (BLS). For example, the European Resuscitation Council Guidelines for Resuscitation 2015 provide specific instructions for how resuscitation should be practiced and take into account ease of teaching and learning, as well as the science.

1.4 Resuscitation Training Equipment

The ideal resuscitation training equipment for this programme is the Laerdal Mini-Anne Plus (10) manikin and classroom kit.

The Laerdal Mini Anne Plus kit contains reusable manikins and a hygienic inflation pump bag. The manikins include a compression feedback feature designed to encourage community groups and school children to practice and perfect their technique.

The Laerdal Mini Anne Plus (10) kit is designed for community groups and school CPR training programmes with:

- Quality – a durable, reusable individual manikin for each student
- Feedback – adjustable clicker settings give compression feedback for new learners
- Simplicity – designed for quick and easy set up between classes.

The standard kit includes 10 manikins, 10 kneel mats, 10 pump bags, 1 carry bag, 2 mesh bags, 10 face masks, 50 manikin wipes and 50 airways.

Care, Maintenance, and Cleaning of Mini-Anne

Keep the manikin clean and in a hygienic condition.

- Before you use the Mini Anne, clean the face and the mouth cavity using an anti-bacterial wipe or Virkon disinfectant and tissues.
- Sanitize the face after every use. For information on cleaning Mini Anne faces, refer to the instructions on the paper bag containing the faces.
- Clean all skins regularly using warm soapy water or Laerdal manikin wipes.

1.5 Managing the Risk of Cross Infection

- avoiding contacting blood / bodily fluids
- use personnel protective equipment (PPE)
- being vigilant for sharp objects
- regularly wash your hands
- maintain your immunisations
- seek further medical advice if exposed

1.6 Potential Barriers to Performing CPR

Cardiopulmonary resuscitation (CPR) is a vital skill recognized worldwide for its potential for the saving of a life. However, different cultural beliefs, religions, community attitudes and sensitivities across the world can influence how CPR is taught, performed, and accepted.

Organisations that offer CPR education and training should ensure their trainers understand the potential challenges that cultural and religious attitudes are common in the areas in which the training will be delivered, while promoting these barriers should not get in the way of helping saving lives.

2. Key Steps in Resuscitation

The ***DRSABCD*** action plan as outlined in this section is used to assess if a patient has a life-threatening condition and requires resuscitation.

D	**Dangers**	**Check for hazards to yourself**
R	**Response**	**Check for response – talk to them, touch them**
S	**Shout / Send for help**	**Shout loudly for help, and send someone to call an ambulance.**
A	**Airway**	**Open the airway**
B	**Breathing**	**Look, listen & feel for breathing**
C	**CPR**	**Commence CPR - Give 30 chest compressions, followed by 2 breaths**
D	**Defibrillation**	**If one is available, use an Automated External Defibrillator**

***NOTE:** Basic information on the Automated External Defibrillator (AED) is provided in section 2.7. However, the use and practice in the use of AED is outside the scope of this programme as in most targeted countries AEDs are only available in some hospital settings.*

2.1 Dangers

- Priorities when checking dangers:
    - Yourself
    - Bystanders
    - Casualty
- Check for dangers- E.g. water, fire, electricity, traffic, chemicals.
- Use all your senses:
    - smell
    - sight
    - touch
    - hearing
- Remove the dangers if possible. If not possible, remove the casualty from the danger.

2.2 Response

- Gently shake the casualty's shoulders and ask loudly "Are you OK?"
- If they respond, **and** they are not in danger, leave them in the position you found them.
- Try to find out what is wrong with them and get help if needed.
- Reassess the casualty regularly.

2.3 Shout / Send for Help

If possible, ask a helper to call the emergency services, otherwise call them yourself. If possible, stay with the casualty when you make the call. Put your phone on **speaker mode** to make it easy to hear the operator.

Key information that you will need to give to the emergency services telephone operator:

- Position – your location, they need to know exactly where you are to find you quickly.
- Problem – what has happened to the casualty? It is important that you say if they are breathing or not.

Remember: Never hang-up the telephone until the operator tells you to.

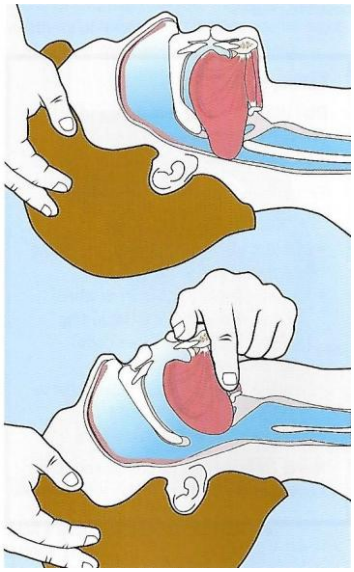
2.4 Airway

If necessary, turn the casualty onto their back.

Place your hand on the forehead and gently tilt the head back.

The chin is held up by the rescuers' thumb and fingers to open the mouth and airway.

The following image demonstrates how the Head Tilt and Jaw Lift open the airway.



2.5 Breathing

In the first few minutes after the heart stopping (cardiac arrest), a casualty may be barely breathing or taking infrequent noisy shallow gasps. Do not confuse this with normal breathing.

Keeping the airway open, look, listen and feel for normal breathing for no more than 10 seconds:

- LOOK for chest movement
- LISTEN at the casualty's mouth for breath sounds
- FEEL for air on your cheek

A casualty who is breathing but unconscious should be placed in recovery position as shown.

If you have any doubt if they are breathing normally, act as if they are not breathing normally, and prepare to start CPR.

If the casualty is unconscious, unresponsive and not breathing commence CPR – see section 2.6.

2.6 CPR – Cardiopulmonary Resuscitation

2.6.1 Chest Compressions

- CPR should be performed on a firm surface whenever possible.
- Kneel by the side of the casualty
- Place the heel of one hand in the centre of the casualty's chest. This is the lower half of the casualty's sternum (breastbone).
- Place the heel of your other hand on top the first hand.
- Interlock the fingers of your hands.
- Make sure you don't apply pressure over the casualty's ribs.
- Keep your arms straight.

- Position yourself vertically above the casualty's chest and press down on the sternum approximately 5cm – 6cm.

After each compression, release all the pressure on the chest, without taking your hands off the chest.

Repeat at a rate of 100 – 120 per minute.

After 30 compressions, do 2 rescue breaths.

2.6.2 Rescue Breathing

- Seal the casualty's nose using fingers or cheek seal.
- Allow the mouth to open and keep doing the chin lift.
- Take a normal breath and place your lips around the casualty's mouth, making sure you have a good seal.
- Blow steadily into the mouth while watching for the chest to rise. Take about 1 second to do this. This is a rescue breath.
- Maintaining the head tilt and chin lift, take your mouth away from the casualty's mouth and watch for the chest to fall as air comes out.
- Take another normal breath and blow into the casualty's mouth once again.
- Do not delay chest compressions by more than 10 seconds to do this.

2.6.3 Use of Trained Bystanders

CPR is hard work.

Other trained people can help by swapping with the first rescuer.

Changing who is doing CPR every 2 minutes is a good way to keep the quality of CPR high.

Image courtesy of Dr Shayne Baker OAM

***NOTE:** The following table shows a summary of the CPR procedures*

	Adults	Children	Infants (under 1)
CPR Overview	30 compressions: 2 breaths		
Chest Compressions	5 – 6 cm	1/3 depth of the chest	
Compression Location	Visual: Centre of the chest (lower half of sternum / breastbone)		
Compression Technique	2 hands	1 or 2 hands	2 fingers
Head Tilt	Full		Neutral head position
Breath Size	Until you see a rise of the chest		

2.7 Defibrillation (where available)

Defibrillation is the process of stopping an abnormal, potentially lethal heart rhythm using an electric shock delivered via an Automatic External Defibrillator (AED). This may allow the normal heartbeat to restart.

AED location sign

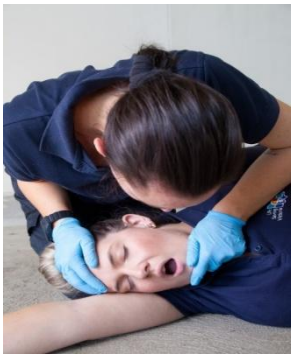
Laerdal Heartstart AED

Generally, once an AED is turned on it will:

Provide verbal prompts for the rescuer to follow

- Instruct how to place the electrode pads onto the casualty
- Analyse the casualty's cardiac rhythm
- Advise the rescuer and others to stand clear of the casualty
- Advise the rescuer to shock if required
- Deliver a shock when activated by the rescuer
- Advise the rescuer to commence CPR if no cardiac activity is detected.

2.8 Vomiting / Regurgitation



If patient vomits / regurgitates during CPR roll them onto their side (recovery position), clear the airway and check breathing

Following vomit or regurgitation:

- if no signs of life place patient on back and continue CPR
- if signs of life roll patient into recovery position

2.9 Stopping CPR

Once started, the rescuer should continue CPR for a maximum of 30 minutes or until:

- the casualty responds and begins breathing normally
- it is impossible to continue (e.g. exhaustion / dangerous)
- a health care professional arrives and takes over

2.10 CPR Settings

Everyone should expect to conduct CPR at anytime and anywhere.

When CPR training is being organized the Trainer should not necessarily expect to find a classroom setting but conducting CPR training in any available space including on the beach as show below.

Images courtesy of Dr Shayne Baker OAM

3. A Resuscitation Training Course

3.1 Introduction and Purpose

This course describes the skills and knowledge required to perform cardiopulmonary resuscitation (CPR) to restore breathing and circulation in an unconscious casualty with absent or abnormal breathing due to a drowning-related incident.

3.2 Competency Description

As a result of learning these skills, participants will be able to provide CPR for Adult, Child, and Infant casualties and deal with complications.

3.3 Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
Elements define the essential outcomes.	*Performance criteria specify the level of performance needed to demonstrate achievement of the element.*
1. Respond to an emergency situation	1.1 Recognise an emergency situation 1.2 Identify, assess and minimise immediate hazards to health and safety of self and others 1.3 Assess the casualty and recognise the need for CPR 1.4 Seek help from emergency services
2. Perform CPR procedures	2.1 Perform cardiopulmonary resuscitation. 2.2 Display respectful behaviour towards casualty
3. Communicate details of the incident	3.1 Accurately convey incident details to emergency services 3.2 Maintain confidentiality of records and information in line with statutory and/or organisational policies
4. Resuscitation training equipment	4.1 How to use, clean and store the resuscitation equipment.

3.4 Recording

The Trainers (Instructors) and participants in CPR courses should have their details recorded in appropriate format; hard copy, soft copy but preferably both.

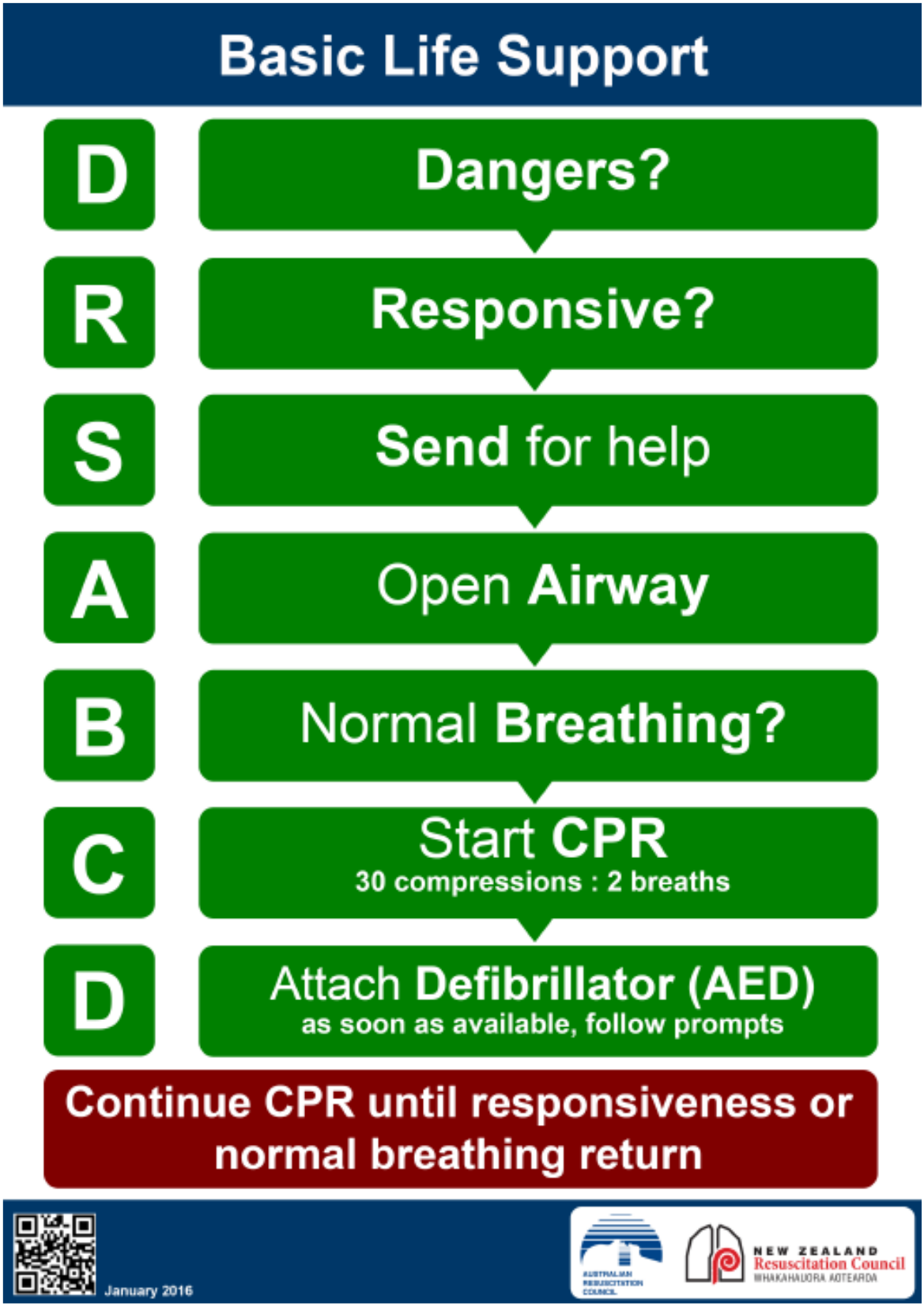
Candidate Assessment Form – There should be one form completed for every person taking part in a CPR course. This form should be retained as a permanent record of the person taking part for possible future reference. These details can be retained for potential follow-up in 12 months for a refresher course.

Resuscitation Course Assessment Form – This form is designed for 4 candidates however multiple forms can be used where courses are held for more candidates at the one time.

NOTE: These Forms are available in separate Word Files

Appendix 1. CPR Chart

The following chart is an **example** of a Poster that can be developed and displayed in classrooms, near swimming pools and other areas as a reminder on the key steps of resuscitation. This particular version is from the Australian Resuscitation Council. Web site link at https://resus.org.au/guidelines/flowcharts-3/



Acknowledgements

The Society extends its sincere appreciation to Laerdal Medical for their generous donation of Mini-Anne Classroom Kits that has made possible this important programme.

In addition, the Society extends its appreciation to the following organisations.

- **Australian Resuscitation Council**
- **European Resuscitation Council** and their Guidelines for Resuscitation 2015 Section 2. Adult basic life support and automated external defibrillation. Resuscitation 95 (2015) 81-99. http://dx.doi.org/10.1016/j.resuscitation.2015.07.015
- **RLSS United Kingdom** for use of technical information and images.
- **RLSS Australia** for use of training materials and images
- **Life Saving Victoria, Australia** for use of training materials and images

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Registered Charity No. 306094