This policy defines and describes Cardiopulmonary Resuscitation (CPR) and how this intervention is to be managed in the adult, paediatric, and neonatal populations as described by the West Coast District Health Board’s (WCDHB) procedures and New Zealand Resuscitation Council (NZRC) guidelines. This policy also describes associated resuscitation processes and equipment, as well as the resuscitation education and training required of WCDHB staff.

### Associated documents

- Adapted from CDHB’s Volume A: Cardiopulmonary Resuscitation (0415, Version 4.0)
- Adult patient observation charts (Incorporating the Modified Early Warning Score (MEWS) procedure) (CHC-PN-0129, Version 2.0)
- Clinical Emergency Record
- Emergency Trolley Guideline (Version 1.0)
- Immediate care of relatives following patient death/serious incident procedure (WCDHB-PN-0074)
- ISBAR Communication tool for health professionals
- Neonatal Emergency Assistance flowchart for Buller and Grey Base Hospitals
- NZRC Newborn Life Support algorithm
- Personal debrief/Peer support procedure (CHC-PG-0004, Version 8)
- Resuscitation Committee Terms of Reference
- Resuscitation status and advanced directive form
- WCDHB Adult in-Hospital Resuscitation algorithm
- WCDHB Advanced Paediatric Guidelines algorithm
- WCDHB Essential CPR Competency Checklist
Overview

Introduction
Cardiopulmonary Resuscitation (CPR) is recognised to be a potentially life-saving intervention. CPR is to be initiated for all patients, visitors, or staff experiencing cardiac or respiratory arrest, except in those circumstances outlined in the ‘Exceptions’ section below.

Purpose
The purpose of this policy is to:

- Outline the procedure for CPR in a variety of settings
- Describe emergency processes relating to clinical emergencies
- Ensure that the management of cardiac and respiratory arrest within WCDHB service areas is consistent with current NZRC management guidelines
- Identify responsibility for checking and maintaining clinical emergency equipment
- Describe the minimum level of resuscitation training required for all WCDHB staff

Application
This policy applies to all staff and all emergency equipment within the WCDHB.

Exceptions
Cardiopulmonary Resuscitation (CPR) is to be performed on all patients in cardiac arrest unless:

- The patient has a documented Not For Resuscitation (NFR) order on the yellow WCDHB Resuscitation status and advance directive form
- The patient has signs of irreversible death (i.e. rigor mortis)
- The health practitioner has deemed that CPR is not clinically indicated or appropriate, as “the provision of CPR without consent where it is not in the best interests of the patient may incur liability”.

1 http://www.hdc.org.nz/education/presentations/nz-resuscitation-council-consultation-meeting
Definitions: For the purposes of this procedure:

**Cardiopulmonary Resuscitation (CPR)**
Cardiopulmonary Resuscitation (CPR) refers to the resuscitation procedures applied to a person in cardiac or respiratory arrest as described by the WCDHB resuscitation algorithms. These algorithms illustrate the recommended management and are based on New Zealand Resuscitation Council (NZRC) guidelines. Resuscitation procedures are used to prevent imminent death and may include, but are not limited to: the application of CPR, administration of emergency medications, and/or emergency defibrillation.

**Clinical Emergencies**
Clinical emergencies refer to situations where sudden, unexpected deterioration in a person's physical condition occurs. These emergencies pose an immediate threat to a person's life and/or long-term health and well-being, and require staff to take urgent action. Examples include situations where resuscitation procedures are required. These may include:

- Any patient who experiences a cardiac or respiratory arrest
- Any patient who suddenly develops a condition that causes: deterioration in their vital signs and/or level of consciousness, and/or increases their respective Early Warning Score (EWS), and/or requires immediate resuscitation measures to be taken.

**Emergency Defibrillation**
Emergency defibrillation using either the Automated External Defibrillation (AED) or manual mode refers to the defibrillation of a patient in ventricular fibrillation or pulseless ventricular tachycardia as described by the NZRC management guidelines.

**Emergency Trolley**
The emergency trolley, or ‘crash cart’, refers to a portable trolley used to quickly transport equipment and medications to the site of an arrest and/or clinical emergency.

**Modified Early Warning Score (MEWS) and System**
The Modified Early Warning System refers broadly to the WCDHB version of the adult (MEWS), obstetric (MEOWS), and paediatric (PEWS) rapid response tools, which are used to assess the severity of a patient’s physical condition and promote the early recognition and management of clinical deterioration.

**PRIME Medical Kit**
A PRIME medical kit refers to a standardised pack that is used by appropriately trained GPs and Rural Nurse Specialists in rural and remote areas. PRIME stands for Primary response in Medical Emergencies and is the name of a national programme, which is administered by the St. John ambulance service.
1. **Cardiopulmonary Resuscitation (CPR) procedure**

   In general, the procedure for CPR involves the following steps, which are based on the NZRC’s Chain of Survival (NZRC, 2012):

   - Immediate recognition of cardiopulmonary arrest
   - Activate local and advanced assistance and obtain emergency equipment - including a defibrillator
   - Immediate commencement of CPR and defibrillation when able
   - Advanced care

   These steps and associated procedures are discussed further in points 1.1 to 1.5 of this policy.

1.1. **Immediate recognition of cardiopulmonary arrest**

   - All collapsed persons are to be assessed and managed using the appropriate resuscitation algorithm.
   - In the hospital context, **adults** (ages 8 and above) are to be assessed and managed using the WCDHB In-hospital Resuscitation algorithm (See Appendix I), while **paediatric** patients (ages 0 to 8) are to be assessed and managed using the WCDHB Advanced Paediatric algorithm (See Appendix II).
   - In the community setting where no advanced equipment is immediately available (i.e. District Nursing, community Allied Health), adults and paediatric patients are to be managed using the NZRC’s Basic Life Support algorithm, which is to be tailored to the collapsed person’s age group (See the NZRC website).
   - **Neonates** (newborns) are to be assessed and managed using the NZRC Neonatal Life Support algorithm (See the NZRC website).
   - It is recognised that alternate management algorithms may be used, depending on the practice environment. For example, nurses working in the community and/or in rural and remote areas will be guided by the above guidelines and PRIME procedures, as well as by the equipment and personnel available.

1.2. **Activate local and advanced assistance and obtain emergency equipment**

   - Activation of assistance will vary depending on the area in which the collapsed person is located.
   - Area-specific emergency processes are outlined under policy statement 2, which is entitled ‘Emergency Processes’.
   - As part of activating assistance, emergency equipment (i.e. an emergency trolley) that is inclusive of a defibrillator and appropriate airway
management equipment is to be obtained. For outlying hospital buildings and in the community setting, this will require calling 111 for an ambulance. In the hospital setting, the orderlies will obtain an emergency trolley for areas that do not have direct access to a trolley.

- Locations of emergency equipment are described under policy statement 2, which is entitled ‘Emergency Processes’.
- Please note that the use of mouth-to-mouth is discouraged in favour of the prompt retrieval and use of this equipment.

1.3. Immediate commencement of CPR and defibrillation when able

Once assistance has been summoned, CPR is to be commenced immediately as per the age-appropriate management algorithm (See point 1.1). When a defibrillator is available, its use will be considered a priority in adult arrest and will be conducted in accordance with the WCDHB management algorithm and this policy.

1.4. Advanced care

Advanced care procedures are to be implemented according to the priorities identified in the management algorithms, which are age specific and are referred to in point 1.1 of this procedure.

1.5. Document any treatments and actions

All treatments and actions are to be documented on the Clinical Emergency Record, as well as in the patient’s clinical notes, which may be electronic. Additional documentation may be required in the community setting. Please also see point 2.9 of this policy.

1.6. Procedure for cardiac arrests or clinical emergencies involving outpatients, visitors, or staff

- For arrests or clinical emergencies involving outpatients, visitors, or staff, follow the above procedure as appropriate.
- If necessary, following resuscitation or medical assessment the person should be transferred to the Emergency Department and formally admitted to an appropriate department.
- This above transfer is to occur in consultation with: St. John, the admitting consultant(s), the manager of the department(s) concerned, and/or the Duty Nurse Manager as appropriate.
2. Emergency Processes

Emergency processes across the WCDHB vary and are dependent on the location and personnel available. This section will outline the processes for the Buller, Grey, and South Westland regions, and will discuss the expectations of resuscitation teams. Additional processes such as documentation and transfer are also discussed.

2.1. Buller

- **Buller Hospital.** Clinical emergencies that occur within Buller Hospital are to be managed during and after hours by activating local and specialist help. Local assistance is summoned by a verbal shout and by pressing the call bell three times (if available). Specialist help is obtained by the Foote Ward/Accident and Emergency (A&E) nursing staff using the speed-dial button entitled ‘Hot potato’, which accesses the on-call medical officer. Additional support may be accessed by manually phoning additional members of staff. Emergency equipment in the form of an emergency trolley and defibrillator is available in the A&E, while a neonatal resuscitaire is available in Kawatiri. Neonatal emergencies are to be managed by following the Neonatal Emergency Assistance Flowchart for Buller Hospital.

- **Reefton Hospital.** Clinical emergencies that occur within Reefton Hospital are to be managed during and after hours by activating local and specialist help. Local assistance is summoned by a verbal shout and by pressing the call bell three times (if available). Specialist help is obtained by the senior nurse on duty using an emergency cell phone. This cell phone has pre-programmed numbers for accessing the on-call Rural Nurse Specialist. Medical advice can be accessed via telephone from the Grey Base Hospital A&E. Emergency equipment is available in A&E.

- **Buller community.** Clinical emergencies in general practice and in the community are to be managed as per local protocol. Emergency equipment is available in the: Karamea Health Centre, Ngakawau Health Centre, and Buller Medical Centre. In addition to this equipment, Rural Nurse Specialists also have access to a PRIME medical kit.

2.2. Grey

- **Grey Base Hospital.** Clinical emergencies that occur within A&E, the Critical Care Unit (CCU), and Operating Theatre/Recovery at Grey Base Hospital are to be managed during and after hours by pressing the red emergency button. Activation of this button will summon local help via an audible and distinct alarm, and will inform the telephonist of a cardiopulmonary arrest. The telephonist will then press a pre-programmed button, which activates further assistance (via a pager system) that is appropriate to that department, and will manually phone the appropriate on-call specialists. Exceptions to this process are Operating Theatre/Recovery during normal working hours, as well as neonatal resuscitations, where appropriate staff will already be present. Emergency equipment is available within each of these areas.
Clinical emergencies that occur within the general wards of Grey Base Hospital (AT&R, Barclay, McBrearty, Morice, and Parfitt) are to be managed during and after hours by pressing the red emergency button and by calling 777. Activation of the emergency button in these areas will only summon local assistance via an audible alarm. A 777 call will enable direct access to the telephonist via a designated telephone. Once the telephonist has answered, the person calling is to state:

- Their name and designation,
- The location they are calling from,
- The nature of the emergency,
- What assistance is required, and

**Stay on the phone**

The telephonist may need to ask the caller further questions, and will then press a pre-programmed button, which activates further assistance (via a pager system) that is appropriate to that department, and will manually phone on-call specialists, if appropriate. Emergency equipment is available within each of these areas.

Neonatal emergencies are to be managed by following the Neonatal Emergency Assistance Flowchart for Grey Base Hospital. Neonatal emergencies that occur outside of McBrearty Ward and the Operating Theatres require the resuscitaire to be obtained from Theatre 3.

Clinical emergencies that occur within the hospital, but outside of the above departments are to be managed by verbally activating local assistance and by phoning 777 using the nearest telephone and communicating the information listed above. Emergency equipment in the form of a trolley, complete with a defibrillator and other portable equipment, is to be obtained from the nearest department. Please note that while an AED and airway management equipment are available on the lower ground floor (physiotherapy gym), an emergency trolley that is appropriate to the collapsed person’s age still needs to be obtained.

Clinical emergencies that occur outside of the hospital (i.e. the hospital car park and outlying buildings) are to be managed by verbally activating local assistance and by phoning 111 for an ambulance. For emergencies occurring in the car park, a defibrillator and emergency equipment pack can be obtained from A&E while awaiting an ambulance. This equipment is to be accompanied by a health professional. If available, an A&E medical officer may be able to attend.

**Greymouth community.** Clinical emergencies in general practice and in the community are to be managed as per local protocol. Emergency equipment is available within each general practice as well as with the Rural Nurse Specialists in Moana.
2.3. South Westland

- Clinical emergencies in general practice and in the community are to be managed as per local protocol. Emergency equipment is available at the: Hari Hari Health Centre, Whataroa clinic, Franz Josef clinic, Fox Glacier clinic, and Haast. Equipment located in these clinics is supplemented by the Rural Nurse Specialists’ PRIME medical kits.

2.4. Outlying buildings

All outlying buildings on any WCDHB hospital site are required to call 111 for an ambulance.

2.5. The clinical emergency team: Membership

No service area within the WCDHB has access to a formal emergency response team. This section refers to the emergency team as the group of specialists that are called to a clinical emergency, which will vary depending on the practice setting. The clinical emergency team within Grey Base Hospital may consist of the following:

- Allied Health
- Ambulance staff
- Anaesthetist
- Anaesthetic technician
- Duty Nurse Manager
- Medical Consultant
- Midwife
- Neonatal specialist (may be via telephone or videoconference)
- Non-clinical bystander
- Nursing staff and students
- Orderlies
- Orthopaedic specialist
- Paediatric specialist (may be via videoconference)
- Resuscitation Service Leader (when available)
- RMOs/SHOs on duty
- Rural Registrar
- Surgical Consultant
The clinical emergency team in Buller and Reefton Hospitals and the community setting may consist of the following:

- Allied Health
- Ambulance staff
- Medical officer
- Non-clinical bystander
- Nursing staff
- Orderlies
- Rural Nurse Specialist

2.6. The clinical emergency team: Activation

- The clinical emergency/resuscitation team, or specialist assistance, is to be activated using the process(s) outlined in points 2.1 to 2.4.
- Within the hospital setting, specialist assistance should be activated within 30 seconds of the initial call for help\(^2\).
- On-call specialists should be available onsite within three minutes of the initial request for assistance\(^3\).
- The criteria for summoning specialists via an emergency call are described in the Adult patient observation charts (Incorporating the Modified Early Warning Score (MEWS) procedure.

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2.7. The clinical emergency team: Leadership

- Effective leadership is vital during cardiopulmonary resuscitation (CPR).
- In general, the team leader will be a senior member of the team who has the appropriate knowledge and experience to lead. It is recognised that leadership may change as more personnel become available.
- Where possible, the team leader should take a ‘hands-off’ role.
- The role of the team leader is to:
  - Ensure the safety of the team.
  - Provide appropriate delegation of roles to team members. Delegation must include ensuring that other inpatients and/or people continue to receive appropriate treatment and care, and a member of the team must be allocated to support any family who may choose to witness the resuscitation.
  - Communicate with other members of staff, including any retrieval staff, regarding the arrest. Communication regarding the arrest is to be undertaken using the ISBAR communication tool.
  - End the resuscitation attempt in consultation with other members of the team, when clinically indicated.
  - Ensure that the Clinical Emergency Record is completed and signed by a medical officer (where present).
  - Ensure that any defusing occurs as close to the time of the event as possible. If required, a formal de-brief may be organised via the Resuscitation Service Leader. Formal de-briefs should occur within 72 hours of the event, as indicated in the Personal de-brief/Peer support procedure.

The WCDHB supports family witnessed-CPR, as research has demonstrated that family who observe resuscitation of their loved ones are less likely to suffer from post-traumatic stress disorder, anxiety, and depression\(^4\). Furthermore, the presence of family members during CPR does not compromise resuscitation team performance, nor is it associated with medico-legal implications.


2.8. The clinical emergency team: Roles

In general, the roles in a clinical emergency include the following:

- Chest compressions
- Airway management
- Defibrillation
- IV cannulation
- Medication administration
- Leadership
- Family support
- Documentation
- Advanced care (i.e. pacing, CVL insertion, post-resuscitation cares, preparing for transfer)

2.9. Simultaneous emergencies

In the instance of simultaneous emergencies, the team leader is expected to delegate an appropriate group of people and/or equipment to attend the concurrent emergency.

2.10. Documentation of arrests and clinical emergencies

- All arrests and clinical emergencies are to be documented on the Clinical Emergency Record and in the patient’s clinical notes, which may be electronic. Additional documentation may be required in the community setting.
- The original copy of the Clinical Emergency Record must be included in the patient’s notes.
- A copy of the Clinical Emergency Record is to be sent to the Resuscitation Service Leader for data collection. This is the responsibility of the nursing staff present.

2.11. Transfer of patients following successful resuscitation

- Immediately following the Return of Spontaneous Circulation (ROSC), most patients will remain clinically unstable and will require transfer in order to receive advanced care. Depending on the location and the nature of the arrest, this may require transfer to the nearest hospital, Critical Care Unit, and/or tertiary centre. The destination may depend on the person’s previous health state, the severity of the presenting illness, and/or the underlying diagnosis.6

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Appropriate coordination of the transfer is vital to ensuring optimal care. This includes communication with retrieval and other receiving staff, and must include a decision regarding the most appropriate mode of transport.

It is essential that thorough communication regarding the patient’s condition and impending transfer is conducted. This is the responsibility of the team leader. The team leader should not leave the patient until this has occurred, unless this task has been delegated to an appropriate colleague. Communication regarding the resuscitated person and the impending transfer should be communicated using the ISBAR communication tool.

Within the hospital setting, it is a nursing responsibility to coordinate inter-hospital transfers. This must be done in conjunction with the Team Leader, specialist staff, senior nursing staff (i.e. the CNM and/or DNM), the retrieval team, and the receiving staff.

The patient’s condition should be stabilised as far as possible before transfer; however, this should not delay necessary advanced care.

The appropriate personnel and equipment is to be available for transfer so that no aspect of patient care is compromised.

It is a nursing responsibility to ensure that the next of kin are informed of the details of the impending transfer. This may require a referral to a social worker. Family may not be able to travel with the patient.

3. Emergency defibrillation

3.1. Indication

Emergency defibrillation in either AED or manual mode is indicated in patients who have experienced a cardiac arrest and are in a ventricular fibrillation or pulseless ventricular tachycardia rhythm. Defibrillation is administered by approved staff who have been trained in advanced life support and the NZRC management guidelines.

3.2. AED Defibrillation

AED defibrillation is performed by staff who have received AED training as part of their WCDHB Essential CPR mandatory training.

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3.3. Manual Defibrillation

Manual defibrillation may be performed by:

- Medical staff trained to NZRC Level 7
- Registered Nurses trained to NZRC Level 6 who work in:
  - Grey Base Hospital’s Critical Care Unit
  - Grey Base Hospital’s Emergency Department
  - Grey Base Hospital’s Operating Theatre/Recovery
  - Rural/remote practice (Rural Nurse Specialists)

3.4. Defibrillator models

The WCDHB has three different defibrillator models, which have been standardised among areas where the clinical need is similar. The type of model therefore depends on the location in which the defibrillator is likely to be used. The three different models are the:

- **Lifepak 20.** This defibrillator is located in all acute areas within hospital settings and in the Franz Josef Clinic. The Lifepak 20 can run in either AED or manual mode. Lifepak 20s that are defaulted to run in the AED mode have a door, which conceals the buttons required for manual mode. Lifepak 20s that do not have a door are defaulted to be run in manual mode; however AED mode is still readily available. **AED mode on these defibrillators is not to be used in children under the age of 8 years**, as manual mode is available, which allows the joules to be reduced appropriately. When in AED mode (for adults) the defibrillator will deliver 200 Joules for the first shock, and will automatically increase the Joules to 360 for subsequent shocks.

- **Lifepak 1000.** This defibrillator is located in less acute hospital settings, general practice, and in other community settings. The Lifepak 1000 only runs in AED mode. **This defibrillator can be used in children under the age of 8 years if the small pink and yellow pads are available.** These pads are specific to this machine and are able to reduce the joules delivered to the child. When the paediatric pads are attached to the machine, the AED will deliver the first shock at 50 Joules and will automatically increase to 90 Joules for subsequent shocks. When adult pads are used, the machine will deliver 200 Joules for the first shock, and will automatically increase the Joules to 360 for subsequent shocks.
- **Lifepak 15.** This defibrillator is located within rural/remote service areas of the WCDHB. The Lifepak 15 can be operated in either AED or manual mode. **AED mode on these defibrillators is not to be used in children under the age of 8 years,** as manual mode is available, which allows the joules to be reduced appropriately. When in AED mode (for adults) the defibrillator will deliver 200 Joules for the first shock, and will automatically increase the Joules to 360 for subsequent shocks.

### 3.5. Defibrillation safety

Safety measures must be taken in all modes of defibrillation. It is the responsibility of the person operating the defibrillator to be loud and clear with their instructions.

### 4. Emergency Equipment

#### 4.1. Storage of emergency equipment

Clinical emergency equipment is to be stored in a manner that allows uninterrupted accessibility by any member of staff, as well as charging of electronic equipment (i.e. defibrillators, portable suction). Emergency equipment should also be kept clean and free from dust.

#### 4.2. Checking procedure

- The clinical emergency trolley, including the defibrillator, is to be checked **at least** daily by a variety of staff from the associated department(s). Failure to perform daily checks has been associated with poor familiarity and promotes the existence of damaged, non-functional equipment. In general, nursing staff are responsible for checking the trolley; however medical staff are also encouraged to be familiar with the emergency equipment within their area.

- Daily checking applies to emergency trolleys and defibrillators located within the hospital setting and in general practice where multiple practitioners are co-located. Emergency trolleys and defibrillators located in sole-practitioner environments are required to be checked at least weekly. Any drawers secured by tamper tags must be opened and checked at least weekly. Unsecured parts of the trolley must still be checked at least daily.

- PRIME medical kits are to be checked as per local policy.

- If an emergency trolley is located between departments, each department has a responsibility for checking the equipment.

- In areas where both a paediatric and adult emergency trolley exist, both trolleys are to be checked at least daily in accordance with this procedure.

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- Where lockable emergency trolleys exist, all drawers must be secured by tamper tags when the trolley is not in use. If the tag is broken (either in an emergency or due to theft) the contents of the drawers must be checked and the drawers re-secured. In cases of theft, the incident must be reported to the person in charge (i.e. CNM, Duty Nurse Manager, and/or practice manager) and an incident report completed within 24 hours of the event.

- Standardised checklists, where available, are to be used when conducting checks. These checklists are not to be photocopied, and instead are to be obtained directly from the Resuscitation Service Leader or WCDHB intranet to ensure the most up-to-date version is in use.

- To perform the check, staff are required to lay their hands on the item to be checked, observe for functionality and expiry, and then tick the appropriate column if the item meets these criteria. All equipment should be in date to ensure functionality in an emergency.10 Where appropriate, the tamper tag number is to be documented on the checklist, and the person performing the check must date and sign the form.

- Any missing, expired, or malfunctioning equipment is to be addressed immediately by the person responsible for conducting the check. These observations are to be documented, as well as any actions taken. This documentation must be attached to the clipboard containing the checklist.

- Any malfunctioning equipment is to be reported to the person in charge, and if appropriate – the Resuscitation Service Leader and/or Clinical Engineer.

- Spare equipment is to be available within the department. In Grey Base Hospital, spare drugs are available via the Duty Nurse Managers’ access to the locked emergency drug cupboard.

- Spare emergency equipment is also located at Stores in Greymouth.

- The equipment located on the emergency trolley is determined by the WCDHB Resuscitation Committee. No additional items are to be added or removed from the trolleys without consultation from the committee. Queries/concerns regarding the available equipment may be directed to the Resuscitation Service Leader.

- All WCDHB staff have a professional obligation to be familiar with the location of emergency equipment in their area.

- Checking of emergency equipment is supervised by the manager of the department. It is the responsibility of the managers to ensure that their staff are aware of and comply with this checking procedure.

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4.3. Emergency medications

- It is a nursing responsibility to ensure that drugs used in an arrest are double-checked and administered under the direction of a medical officer.
- It is a nursing responsibility to ensure that all calculations in an arrest are double-checked.
- Medications used in an arrest or clinical emergency are to be documented on the Clinical Emergency Record and, where appropriate, on the patient's medication chart.
- It is a nursing responsibility to restock drugs as required. In Grey Base Hospital, spare drugs are available via the Duty Nurse Managers’ access to the locked emergency drug cupboard.

4.4. Maintenance and procurement of emergency equipment

- The contents of emergency trolleys and any supplementary emergency equipment are reviewed as required by the Resuscitation Committee, with input from specialist staff.
- All equipment is to be checked and maintained as per point 4.2 of this policy.
- Clinical Engineering staff are to perform verification checks of all electrical equipment according to manufacturers’ requirements.
- The Resuscitation Service Leader and Resuscitation Committee are to be consulted prior to the purchase of significant resuscitation items, including defibrillators and emergency trolleys. This consultation is necessary in order to ensure organisation-wide consistency and delivery of appropriate education and training.
- In general, emergency equipment is to be procured and charged to the respective department. It is essential that the correct emergency equipment is procured in order to ensure standardisation is maintained. If there is any uncertainty regarding procurement, please contact the Resuscitation Service Leader for product advice and Stores for the correct iPROC codes.
- Re-useable equipment should be cleaned or sterilised as per manufacturer guidelines.
- The Resuscitation Service Leader coordinates annual audits of emergency equipment within the WCDHB.
5. Education & Training

5.1. Prevention

- All staff should be trained to recognise patients who are at risk of deteriorating. Training in the use of the Modified Early Warning Score system is not a responsibility of the resuscitation service; however, it is recognised that this is an integral part of preventing cardiopulmonary arrest and other clinical emergencies. Please refer to the Adult patient observation charts (Incorporating the Modified Early Warning Score (MEWS)) procedure for further information.

5.2. WCDHB Essential CPR (mandatory training, Level 4)

- All staff are required to maintain CPR competency by completing regular updates and competency assessments. Updates and assessments are performed by an approved WCDHB Essential CPR instructor using the WCDHB Essential CPR Competency Checklist.

- CPR refreshers cover basic life support for adults, children, and infants, as well as choking and AED defibrillation. Training and assessment is based on the NZRC management guidelines.

- Clinical staff. All clinical staff must attend a CPR refresher annually in order to meet mandatory training requirements. Exceptions to this are staff who have completed an NZRC CORE resuscitation course within the previous six months.

- Non-clinical staff. All non-clinical staff must attend a CPR refresher every two years in order to meet mandatory training requirements.

- All staff who have recently been appointed must complete a CPR refresher within three months of commencing employment.

- Staff who have returned to work following a leave of absence (i.e. parental leave) need to complete a refresher upon returning to work.

5.3. WCDHB Essential CPR Instructors

- Essential CPR instructors are trained and certified in a programme that is approved and coordinated by the Resuscitation Service Leader. This training has been adapted from the CDHB programme.

- CPR instructors are volunteers and may be any regulated health professional.

- CPR instructors re-certify annually by attending a CPR instructor’s update course.

- Excluding Allied Health Instructors, all Essential CPR trainers are required to maintain a minimum Level 5 NZRC certificate.

- CPR instructors are required to fulfil additional requirements, which are outlined as part of their training programme.
5.4. NZRC CORE (Certificate of Resuscitation and Emergency Care)

The NZRC CORE resuscitation course is comprised of four ‘rescuer levels’. These levels relate to the management guidelines, which vary according to the skills and experience of the rescuer. The level at which staff are trained is determined by their scope of practice and their practice environment. Re-certification is required every three years.

- **Level 4.** The Level 4 certificate is more advanced than the WCDHB Essential CPR certificate. Staff who train at this level include health professionals and support staff who may be exposed to resuscitation events and are required to initiate CPR. In general, WCDHB staff trained at this level are new graduate nurses. These rescuers should have an understanding of the principles of defibrillation and advanced airway procedures so that they may be of assistance.

- **Level 5.** The Level 5 certificate is for health professionals who may be asked to independently manage and supervise resuscitation situations where little and/or immediate assistance is available from higher level rescuers. In general, WCDHB staff trained at this level are senior Enrolled or Registered Nursing staff working in general practice or general hospital wards.

- **Level 6.** The Level 6 certificate is for health professionals in specialist units where resuscitation may be an expected event. The NZRC recommends that rescuers in these areas need to be knowledgeable about more advanced procedures, such as leadership, manual defibrillation, intravenous cannulation, and administration of medications. In general, WCDHB staff that are required to be trained at this level are Rural Nurse Specialists as well as Registered Nursing staff working in emergency departments, critical care/intensive care units, and operating theatre and/or recovery.

- **Level 7.** The Level 7 certificate is for medical officers. This level equates to the level of knowledge expected of doctors who are not specialists in the field of resuscitation or emergency care. Rescuers at this level should possess a theoretical understanding and practical ability in Level 6 skills, as well as understand the conditions that predispose an individual to cardiac arrest. Rescuers at this level should also be knowledgeable of the best practice management for these conditions.

5.5. CORE Instructors

- CORE instructors are trained and certified in a programme that is approved and coordinated by the NZRC.

- CORE instructors are nominated by the local course director as per NZRC guidelines.

- CORE instructors re-certify by teaching on a minimum of three CORE courses each year, and by attending two instructor workshops in a four-year period (as per NZRC guidelines).
5.6. PRIME (Primary Response in Medical Emergencies)
Rural Nurse Specialists working in remote areas are required to maintain competency in PRIME training. Re-certification is required every two years and is administered by St. John.

5.7. Neonatal education and training
Midwives and nurses working with the maternity population are required to maintain competency in NZRC Neonatal Life Support as well as Adult resuscitation. Re-certification is required annually.

5.8. Training records
- Records for WCDHB Essential CPR and NZRC CORE resuscitation certification are maintained by Learning and Development.
- The Resuscitation Service Leader also maintains a record of NZRC competencies, CORE Instructor competencies, and Essential CPR Instructor competencies to aid in planning training and education.
- Following Essential CPR competency assessment, Essential CPR Instructors forward the names, date, and competency type to Learning and Development.
- Following NZRC CORE resuscitation courses, appropriate details are forwarded by the Resuscitation Service Leader to Learning and Development.
- It is the responsibility of the individual staff member to maintain their own training record as part of their professional portfolio.

6. WCDHB Resuscitation Committee

6.1. Scope and Accountability
The WCDHB Resuscitation Committee provides advice and strategic direction on all resuscitation training and practices for all WCDHB staff, including the ongoing development of resuscitation policy, procedures, equipment, and resources. The committee is accountable to the General Manager at Grey Base Hospital, Greymouth. For detailed information regarding the committee, please refer to the WCDHB Resuscitation Committee’s Terms of Reference.

6.2. Meetings
The Resuscitation Committee meets at least four times throughout the year (about every three months).

6.3. Membership
Membership is set out in the committee’s Terms of Reference and generally consists of senior medical staff and nurses involved with resuscitation, while additional groups are consulted as required.
**Responsibilities**

**CORE Instructors**  
CORE instructors are responsible for maintaining their instructor status as per NZRC requirements. CORE instructors are responsible for serving as resuscitation resources within their clinical area(s).

**Department Managers**  
Department managers (i.e. Clinical Nurse Managers) have a responsibility to ensure that all staff are aware of and comply with all aspects of this policy. Managers must recognise the training needs of their staff and support them to access appropriate resuscitation training as outlined by this policy. This support includes supporting volunteer Essential CPR instructors to deliver training as required.

**Essential CPR Instructors**  
Essential CPR instructors are responsible for maintaining their instructor status as per WCDHB requirements. Essential CPR instructors are responsible for serving as resuscitation resources within their department(s).

**Individual staff**  
Individual staff are responsible for ensuring that they comply with this policy and that they attend regular training as required for their scope of practice and department.

**Resuscitation Committee**  
The Resuscitation Committee is responsible for providing advice and strategic direction regarding resuscitation policies and procedures, equipment and other resources, education and training, and compliance with best practice throughout the WCDHB.

**Resuscitation Service Leader**  
The Resuscitation Service Leader is responsible for working closely with the Resuscitation Committee and for fulfilling the requirements outlined in the Resuscitation Service Leader position description.

**The WCDHB**  
The WCDHB has a responsibility to provide an effective resuscitation service and emergency processes, which include appropriate education and training. A suitable infrastructure is required to continue support in resuscitation activities.
References


Appendix I: WCDHB Adult In-Hospital Resuscitation

Adult In-Hospital Resuscitation

Check for Danger

Check for Responsiveness

Send for help

Open Airway

Check for Normal Breathing

Call Clinical Emergency Team

Start CPR

30 Chest Compressions / 2 Ventilations

Attach Defibrillator / AED

Assess Rhythm

Shockable

Shock x 1 (200J initial and then 360J subsequently)

CPR for 2 minutes

Return of Spontaneous Circulation?

Non Shockable

CPR for 2 minutes

Post Resuscitation Care

During CPR

- Airway adjuncts (LMA/ETT)
- Oxygen
- Waveform capnography
- IV/IO access
- Plan actions before interrupting compressions (e.g. charge manual defibrillator)
- Non-Shockable
  - Adrenaline 1mg after 2nd shock (then every 2nd cycle)
  - Amiodarone 300 mg after 3rd shock
- Shockable
  - Adrenaline 1mg immediately (then every 2nd cycle)

Consider & Correct

Hypoxia
Hypovolaemia
Hyper / hypokalaemia (metabolic disorders)
Hyper / hypothermia
Tension pneumothorax
Tamponade
Toxicity
Thromboembolus

Post Resuscitation Care

Re-evaluate ABCDE
12 lead ECG
Treat precipitating cause
Re-evaluate oxygenation and ventilation
Temperature control (cool)
Advanced Paediatric Guidelines

Start CPR

Attach defibrillator/monitor

Assess Rhythm

Shockable
VF/pulseless VT

Shock
(4J/kg)

Adrenaline 10 mcg/kg
After 2nd shock
(then every 2nd loop)
Amiodarone 5mg/kg
After 3rd shock

CPR
for 2 minutes

Non-shockable
PEA/asystole

Adrenaline 10mcg/kg
(immediately then
every 2nd loop)

CPR
for 2 minutes

During CPR
Airway adjuncts (LMA/ETT)
Oxygen
Waveform capnography
IV/IO access
Plan actions before
Interrupting
compressions (e.g. charge
manual defibrillator to 4 J/kg)

Consider and correct
Hypoxia
Hypovolemia
Hyper/hypokalaemia/
metabolic disorders
Hypothermia/hyperthermia
Tension pneumothorax
Tamponade
Toxins
Thrombosis
(pulmonary/coronary)

Return of spontaneous
circulation?

Post-resuscitation care
Re-evaluate ABCDE
12 lead ECG
Treat precipitating causes
Re-evaluate oxygenation and
ventilation
Temperature control (cool)

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