

EMERGENCY EQUIPMENT - CHECKING AND MAINTENANCE

This LOP is developed to guide clinical practice at the Royal Hospital for Women. Individual patient circumstances may mean that practice diverges from this LOP.

1. AIM

- Emergency equipment is maintained in a functional state and is ready to use in an emergency situation

2. PATIENT

- Nil

3. STAFF

- Registered nurses and midwives

4. EQUIPMENT

- **The Zoll® (manual) defibrillator R Series locations:**
Operating Theatre, Acute Care Centre (ACC)
- **The Zoll® Automated External Defibrillator (AED) PRO locations:**
Oxford ward, Macquarie ward, Gynaecology outpatients, Birth Unit, and Admissions Desk located on Level 0
- **The Zoll® AED 3 location:**
Acute Care Centre
 - **Adult Cardiac Arrest Equipment Checklist**
Emergency trolley contents plus, portable oxygen and suction, Zoll® AED or Zoll® R Series, wall oxygen and suction
 - **Neonatal Resuscitation Equipment Checklist:**
Emergency trolley contents plus, resuscitators, portable oxygen, and suction in all maternity areas; Additionally, Neopuff® Infant Resuscitators in Newborn Care Centre (NCC), Antenatal ward and clinic, plus Birthing Services

5. CLINICAL PRACTICE

- Check all emergency equipment daily when clinical area is open. This must be performed by a member of staff, allocated by in-charge/team leader.
- Replace any used equipment immediately following an emergency event. This is to be done by a member of staff, allocated by in-charge/team leader to ensure appropriate equipment is always available.
- Ensure any faulty, expired, or missing equipment is reported to unit manager or After-Hours Nurse Manager (AHNM) and rectified immediately

Checking Oxygen Equipment

- Check that an oxygen flowmeter, regulator, and key are attached to the cylinder
- Open the oxygen cylinder valve with key to check that it is greater than half full and not leaking (If not, cylinder must be replaced immediately with a full one). When replacing the oxygen cylinder, first remove the Twin-O-Vac® unit (suction system) to ensure that a proper seal is achieved when replaced
- Check oxygen flow by turning the flowmeter on (15 Litre flowmeter recommended)
- Ensure that there is at least one meter of oxygen tubing attached to the oxygen flowmeter

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Checking Neopuff®

- Ensure that the gas supply line (green in colour) is connected from the gas flowmeter to the Neopuff®
- Ensure that a clean corrugated circuit is connected to the Neopuff®
- Ensure that clean neonatal masks are on top of the resuscitation bed for use (size 0/1 for term and size 00 for a preterm neonate or neonate <2.5 kg)
- Check that the maximum pressure relief valve is set at factory setting of 40cm H₂O. If not, open cover and turn the maximum pressure relief knob until 40 cm H₂O is reached
- Check Peak Inspiratory Pressure (PIP) is set at 25cm H₂O and Positive End Expiratory Pressure (PEEP) at 5cm H₂O for a term neonate. For a preterm neonate, change setting to PIP of 20cm H₂O and PEEP of 5cm H₂O

Checking Suction Equipment

- Ensure the collection canister is correctly secured to the unit head
- Ensure that there is one meter of suction tubing attached to the outlet
- Turn suction on and place fingertip over the end of the suction tubing to check there is adequate suction pressure i.e. should be sufficient to adhere the fingertip to the tubing. Only low suction is required for neonatal resuscitation and should be < 100mmHg
- Ensure suction catheters sizes 8, 10 and 12 are available for neonatal use
- Check that when you have completed above checks, the flowmeter is turned off, and the valve is closed using the key to prevent oxygen leakage. Turn the flowmeter on to expel remaining oxygen and then turn off.

Checking Wall Oxygen and Suction

- Check oxygen flow by turning meter on
- Check the suction by placing fingertip over the end of the suction tubing i.e. should be sufficient to adhere the fingertip to the tubing. Only low suction is required for neonatal resuscitation and should be < 100mmHg
- Check correct collection canister assembly and connections
- Check each outlet has adequate oxygen and suction tubing for use in an emergency
- Ensure appropriate suction catheters, yanker suckers and oxygen masks are available incase required

Checking Resuscitator Bag Valve Mask (BVM) units - Adult and Neonatal

- Check that the outer plastic bag on the BVM is sealed. This product is single use.
- Check there is green tubing connected to the wall oxygen flowmeter and to gas blenders (in Newborn Care Centre) ready for use

EMERGENCY EQUIPMENT - CHECKING AND MAINTENANCE cont'd

Checking Automated External Defibrillators

Zoll® AED

- Check green tick visible on the device, indicating that the battery is ready (Zoll AED 3 & PRO have a three-year lithium battery)
- Troubleshoot problems according to the table below:

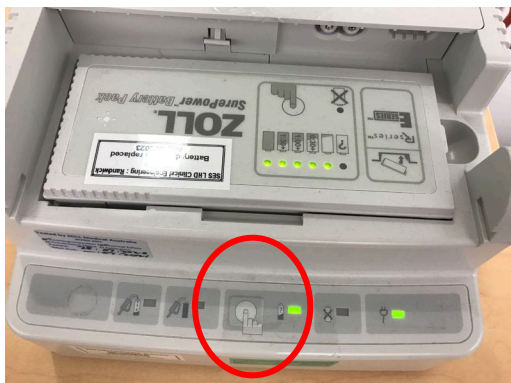
<u>Battery Condition</u>	<u>Indications</u>	<u>Correction</u>
Low energy detected during power-on self-test	Message: <i>CHANGE BATTERY</i>	Replace battery pack
Low energy or other self-test failure while the unit is powered off (standby)	Ready indicator shows a red "X". Unit beeps once every minute for 30 minutes	Replace battery pack. Check or replace pre-connected electrodes. If the red "X" remains, contact Zoll Technical Service
Low energy detected while the unit is powered on	Message: <i>CHANGE BATTERY</i>	Replace battery pack as soon as possible
Dead battery	Ready indicator shows a red "X"	Replace battery pack. If the red "X" remains, contact Zoll Technical Service

Zoll® (manual) defibrillator R Series

- Turn off mains power
- Check all leads for tangles
- Check paper (ensuring enough and properly loaded)
- Remove multifunction cable from defibrillator pads
- Attach connector into side connection point
- Turn switch to "DEFIB"
- Reduce energy to **30 Joules**
- Press Charge and wait until indicator light appears
- Press shock button
- Check and sign printout
- Connect defib pads to cable
- Turn back on at mains power
- Turn machine off

Test Zoll® (manual) defibrillator R Series Battery

- Change battery on first day of each month
- Check battery charger is working by pressing button indicated below



EMERGENCY EQUIPMENT - CHECKING AND MAINTENANCE cont'd

Checking Intubation equipment (Adult and Neonatal)

- **Check laryngoscope:** Turn laryngoscope on by either raising blade and locking into position or twisting the grey base of non-adjustable laryngoscopes (globe should illuminate)
- Ensure the globe is tightly screwed into the laryngoscope blade. Laryngoscopes and blades with green markings are fiber-optic and do not require globes

Checking Drugs and fluids

- Check the expiry dates of all fluids and drugs. Drugs can be safely used until the end of the month of expiry (replacements should be obtained before the expiry date)

6. DOCUMENTATION

- Adult Cardiac Arrest Equipment Checklist
- Neonatal Resuscitation Trolley Checklist

7. EDUCATIONAL NOTES

Variance management

- Where equipment is identified as not being functional, the appropriate department is contacted to arrange immediate repair and replacement. Where immediate repairs cannot be attended, replacement equipment is provided to ensure that emergency equipment is available and ready for use in an emergency. Nursing/Midwifery Unit Managers must be notified immediately if this occurs

General guidelines

- Check the emergency trolley equipment according to the adult cardiac arrest equipment checklist/neonatal resuscitation equipment checklist. Equipment which is missing, not functional or expired must be replaced or repaired immediately. Wall oxygen and suction should be checked to ensure that it is functional. Where problems are identified with oxygen and suction equipment they must be reported and rectified as soon as possible
- The oxygen cylinder and key from the emergency trolley should never be removed from the trolley for any reason.

Location of replacement expired or used items:

- **ACC:**
Disposable Pocket masks
- **For Neonate:**
 - **NCC**
Endotracheal tubes
Intubating Stylets
Saturation probes for oximeter
 - **Birth Unit**
Saturation probes for oximeter
Resuscitate tubing
Bacterial Filters
 - **Operating Theatre**
Endotracheal tubes
Intubating Stylets

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- **O₂ Cylinders**
Replacement cylinders can be obtained from Porter Station on extension 26784 between 0800-1600 hours or Page 44000 after hours and requesting same
- **Defibrillators**
If problems are experienced with AEDs or manual defibrillators contact biomedical engineering during business hours. After hours, notify the After-Hours Nurse Manager. Each ward is responsible for ordering their supply of AED pads
- **Defibrillation PADS AED PRO**
For spare and replacement pads, the ward who is responsible for the AED is required to order more from I-procurement Zoll Medical, 84248700, Code 8900080001
- **Medications**
Medications can be used safely until the end of the month however replacements should be sought before this date. Medications can be replaced by Pharmacy within hours or Emergency Drug Cupboard after hours
- **Fluids**
Fluids can be replaced by ward stock. If the ward does not stock the required fluids replacement may be sought from the ACC or Operating Theatres

8. RELATED POLICIES / PROCEDURES / CLINICAL PRACTICE LOP

- Neonatal resuscitation at Delivery
- Clinical Emergency Response System (CERS) – Management of the deteriorating patient
- Deteriorating Patient – Clinical Emergency Response System for the Management of Adult and Maternity inpatients SESLHDPR/283
- Maternal collapse

9. RISK RATING

- Extreme

10. NATIONAL STANDARD

- Governance for safety and quality in Health Service Organisation – Standard 1
- Recognising and Responding to Acute Deterioration – Standard 8

11. REFERENCES

1. Checking and Maintaining Emergency Trolley Equipment (CBR) Prince of Wales Hospital policy. 2016
2. Australian and New Zealand Council of Resuscitation (ANZCOR) Guidelines: Section 13 – Neonatal Guidelines. June 2017. <https://resus.org.au/guidelines/>

REVISION & APPROVAL HISTORY

Reviewed and endorsed Maternity Services LOPs 1/6/21
Approved Quality & Patient Care Committee 4/2/16
Reviewed and endorsed Maternity Services LOPs group November 2015
Approved Quality Council 16/10/06
Endorsed Neonatal Clinical Committee 11/7/06
Endorsed Nursing & Midwifery Clinical Practice Group 20/10/05

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