



Choosing a defibrillator for general practice



Your guide to defibrillators

WHY

Why have a defibrillator in your practice ?

- The survival rate from cardiac arrest without defibrillation is 5-10%. The survival rate with good CPR and early defibrillation in Adults is up to 75%.
- Access to a defibrillator to meet the “gold standard” for early defibrillation, should be within 3 minutes of the arrest. As Ambulance response times are around 8 minutes, even in metropolitan areas, waiting will not result in optimal outcomes.
- Whilst a defibrillator (AED) is not currently a requirement for accreditation, the RACGP recognises the significant improvement in patient outcome they represent.
- Patients expect that a general practice has the necessary equipment should an emergency arise. It is disappointing that AEDs are more prevalent, (at present) in sports and social clubs than in general practices.
- An AED can be operated by both clinical and non-clinical staff and is cheap insurance should staff suffer a cardiac arrest. Nowadays there are no rhythms to diagnose (if you choose) and voice prompts tell the operator what to do next.
- The price of defibrillators continues to fall, with an entry level machine for around \$2K, whilst the quality and features continue to improve. Defibrillators can be claimable under the Small Business Tax Write-off. The initial cost can also be shared with other businesses in proximity to the practice e.g. Pharmacy, radiology service.

“Automated external defibrillator (AED) There is evidence, both internationally and in Australia, to suggest that immediate defibrillation significantly improves the chance of survival after cardiac arrest. Although cardiac arrest in the general practice setting is a rare event, the difference in outcomes between early defibrillation (within 8 to 9 minutes) and later defibrillation is very significant (10% increase in mortality for each minute from the time of the arrest). Practices may choose to purchase an automated external defibrillator in view of the significant improvement in patient outcomes achieved by early defibrillation.”

WHAT

What type of defibrillators are available ?

There are many choices available in the defibrillator market. Times have changed since the old days of one or two companies dominating the market with a limited selection of defibrillators that were manufactured for hospitals rather than primary care. Here are some tips for deciding on the type of defibrillator that is right for you:

- An Automated External Defibrillator (AED) comes in two basic configurations, Automatic and Semi-Automatic. Automatic defibrillators tell the operator and rescuers it is about to shock, however if you don't hear this message i.e. noisy environment or inattention it shocks anyway. A Semi-Automatic defibrillator provides an additional safety step in that someone has to push the shock button when prompted i.e. visual check everyone is clear of the patient.
- An ECG screen is available on some AEDs, however to provide a diagnostic quality trace you have to spend at least twice the average cost of a basic defibrillator. These days, AEDs will accurately diagnose shockable rhythms (VF coarse to fine—present in 99% of arrests and VT above around 150 bpm—present in only 1% of arrests).
- Some AEDs are fitted with an ECG screen and a manual over-ride button for clinicians to make a decision about shock delivery. As AEDs are already equipped to recognise the most common presenting rhythms (VF 99%) it is doubtful that this feature will ever be utilised in primary care.
- AEDs are not designed to be used on a patient under 12 months of age. In defibrillation terms an Adult is defined as > 8 years and a Child is defined as >1 year ≤ 8 years.
- AEDs are not fitted with a joule selection function. The protocols are pre-loaded on the machine and they use attenuation through an impedance algorithm to deliver the optimal joule setting for the patient connected.
- All AEDs have automated internal monitoring, that checks the machine and displays any faults. As long as the pads are "in date" there is no other maintenance necessary.

HOW

How to tell the difference between units

All defibrillators will defibrillate, however there are several things to look for when comparing defibrillators (AEDs) and making a decision:

- **Warranty** - Most AEDs have an expected service life of around 5 years so the warranty should meet or exceed this.
- **Battery Life** - battery life can range between models and manufactures from around 2 years up to 7 years
- **Cost of Consumables** - specialised battery packs can cost from \$90.00 to \$280.00 . Replacement adult pads range from \$90.00 to \$150.00, while paediatric pads are more expensive with costs ranging from \$92.00 to around \$200.00. All pads have a maximum 2.5 year shelf life. One brand (Heartsine) will replace the battery and pads if used on a patient in the first 4 years of ownership.
- **Safety Features** - special features that may be fitted include vibration sensors that will prevent shock delivery if the patient is being moved e.g. CPR; electrical interference sensors to detect proximity to power sources that may cause errors with machine rhythm diagnosis; constant monitoring to detect and prevent shocks if the patient reverts into a non-shockable rhythm before the operator presses the shock button.
- **CPR Feedback** - as good compressions are crucial in resuscitation, AEDs have a range of measures that can help maintain this. The simplest feedback measure is a metronome. Some defibrillators have patented compression feedback systems that work either an accelerometer or an algorithm that detects impedance changes.

WHERE

Where can I go for AEDs and information

Medics for Life can provide you with expert advice on defibrillators from their Paramedic and Primary Care experience., free site inspections, free installation and free training for your staff. Price match guarantee. Authorised Distributor for Defibtech, Heartsine and Zoll

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