



## AUTOMATED EXTERNAL DEFIBRILLATOR (AED) POLICY AND PROCEDURE

The aim of this document is to provide information and support to staff assisting in a cardiac arrest event on the College campus.

### **Background Information:**

*Cardiac Arrest:* a condition where a person's heart has stopped/or is in a 'fibrillation' (ineffective quivering movement). This can be caused by a primary heart condition or a secondary event e.g. drowning, suffocation, poisoning, electrocution etc. In either case, immediate emergency CPR and AED management is to be commenced for any chance of survival.

*Cardio Pulmonary Resuscitation (CPR):* An emergency life supporting technique used when a person has sustained a cardiac arrest. It involves 30 chest compressions alternated with 2 rescue breaths. When delivered effectively this can maintain minimal circulation until an AED is used to deliver cardiac electrical shocks and/or emergency services take over care.

*Automated External Defibrillator (AED):* This equipment delivers an electrical shock across the heart muscle in an attempt to 'defibrillate' and return the heart to a 'normal' effective rhythm.

The key to an increased chance of survival after a cardiac arrest event is:

1. Early recognition i.e. not responding and not breathing
2. Early commencement of effective CPR
3. Early attachment of an AED
4. Early access to Emergencies Services

The scientific evidence to support early defibrillation is overwhelming; the delay from collapse to delivery of the first shock is the single most important determinant of survival. If defibrillation is delivered promptly, survival rates of 75% have been reported. The chances of successful defibrillation decline at a rate of about 10% with each minute of delay; CPR support will help to maintain a shockable rhythm but is not a definitive treatment.

### **Equipment Location and Specifications**

Our campus houses two AEDs in designated Defibrillator wall cabinets. One is located in the corridor, between the Medical Room and Staff Common Room (1), the other is located in the PE office in the Sports Hall (2).

- (1) **Philips HeartStart OnSite Defibrillator M5066A.** It is powered by a lithium battery with a 4 year shelf life (installed but unused). The battery when new can deliver 200 shocks or 4 hours of operating time at 25°C (We expect a shorter performance time due to higher environmental temperatures in Malaysia). It uses Adult SMART Pads Cartridge M5071A and Infant/Child SMART Pads Cartridge 5072A. The Adult SMART Pads Cartridge is installed in the machine and ready for use. The Infant/Child SMART Pads Cartridge (used for under 25kg body weight) is stored in the **trauma kit** located in the Medical Room in the grey cupboard behind the **Trauma Kit Sign** to the left. The electrode pads are not reusable. The HeartStart automatically performs a self-test for readiness every day. The green flashing light indicates the defibrillator is ready for use. An owner's manual with detailed operation details is located in the Medical Room.
  
- (2) **HeartSine® Samaritan® PAD 350P Defibrillator.** The SAM 350P uses combined battery (lithium) and electrode packs called Pad-Pak. The Pad-Pak battery has a 4 year shelf life (installed but unused). When new the electrode Pad-Pak can deliver 60 shocks or 6 hours of continuous monitoring. The adult Pad-Pak is a grey colour and installed in the machine ready for use. The Paediatric Pad-Pak is a pink colour and stored in the HeartSine carry case (at the back). The Pad-Pak is not reusable. The HeartSine® Samaritan® PAD 350P automatically performs a self-test for readiness every day. The green flashing light indicates the defibrillator is ready for use. A photocopied owner's manual with detailed operation details is located in the HeartSine carry case. The original is in the Medical Room.

### **Maintenance and Supply**

- (1) Philips HeartStart OnSite - The current service and stockist of replaceable accessories is Setia Hospimart. Contact David Lye 019-2135102. Email: [setiahospimart@yahoo.com](mailto:setiahospimart@yahoo.com)  
Battery expiry: September 2023 (if unused)  
Adult SMART pads expiry: August 2021  
Infant/Child pads expiry: August 2021
  
- (2) HeartSine® Samaritan® PAD 350P – The current service and stockist of replaceable accessories is ProMed Marketing Sdn Bhd. Tel: 03-58917275 Email: [firstaid@promed.com.my](mailto:firstaid@promed.com.my)  
Adult Pad-Pak expiry: January 2022  
Paediatric Pad-Pak expiry: February 2022

### **Staff training**

All staff are offered Basic First Aid and CPR AED training. Currently 70 staff hold a certificate with American Safety Health Institute (ASHI). ASHI is affiliated with America Heart Association (AHA). Staff currently holding ASHI certificates have been trained with the HeartStart OnSite Defibrillator. Training sessions will be provided for new staff joining August 2019.

### **Staff Responsibility**

- College nurses will check Medical Room emergency equipment daily including trauma kit, HeartStart AED and O2 cylinder;
- PE staff will be check PE office emergency equipment daily including first aid box, HeartSine AED, O2 cylinder, spinal board and accessories;
- College nurses will check both the AED in the PE office and the one in the main block in front of the Medical Room on a daily basis to ensure the “Blinking Light” indicates that the AED’s battery is working.

### **Instructions for AED Use**

Both the HeartStart and the HeartSine defibrillators give full voice guidance (in English language) when the machines are turned on. Both have a **green ON/OFF button**.

In general the sequence of actions for the HeartStart and the HeartSine are as follows:

- AEDs are used on a person who is found to be unconscious and not breathing normally;
- **MAKE SURE EMERGENCY SERVICES HAVE BEEN CALLED;**
- Administer effective CPR until the AED is brought to the scene and is available for use;
- If you are alone, stop CPR and switch on the AED and follow voice prompts;
- If you are not alone continue CPR until the AED electrode pads have been securely attached to the bare chest wall and voice prompts you to “do not touch the patient-analysing”;
- Remove any metal from the chest area (jewellery and bras);
- Use razor and wet and dry wipe accessories to remove thick chest hair on right upper chest and left lower chest the same areas as is indicated for the placement of the pads;
- HeartStart electrode pads are removed by lifting the green ‘PULL’ handle removing the hard cover from the pads cartridge. Pull the tab at the top of the tabs cartridge to pull off the seal and take out pads. Peel electrode pads from either side of the yellow liner and press the sticky side of the pads firmly on the chest wall as indicated by the picture on each pad;
- HeartSine electrode pads are removed by pulling the green tab to remove the pads cartridge from underneath the AED. Pads are applied the same as with HeartStart AED;
- If the casualty is below 25kgs (approx. 8 years old) the pads cartridge in both the HeartStart and HeartSine AED are changed to Infant/Child SMART pads and Paediatric Pad-Pak respectively;
- Once AED pads are in place and voice prompts start the first aider will follow the AED instructions;
- Between analysis of heart rhythm with or without ‘delivery of shock’ the AEDs will count down two (2) minutes while the first aider/s continue effective CPR. CPR is only paused when the AED indicates that it is analysing and or delivering a shock. CPR recommences when voice prompts;
- Rescuer fatigue can be limited when there is more than one first aider able to take turns to deliver CPR;
- The cycle of CPR, analysis with or without delivery of shock continues until emergency services take over care or the casualty recovers;
- The pads are **NEVER REMOVED** even if casualty has recovered and waiting for emergency services;
- The recovered casualty is constantly monitored for conscious level, kept comfortable and reassured.

**After an event**

- Replacement equipment and supplies are restocked in a timely manner
- If an AED is not in use due to servicing or incomplete equipment staff should be alerted both by signage and email
- The College Healthcare Co-ordinator will organise a debriefing with relevant staff
- The College will offer emotional support to relevant students and staff through the College Counselling Service

This document is to be reviewed yearly and/or after an event where the AED has been used.