

September 26, 2001

AUTOMATIC EXTERNAL DEFIBRILLATORS (AEDs)

1. **PURPOSE:** This Veterans Health Administration (VHA) Directive provides policy to advance the care of cardiac arrest victims and ensure that VHA has appropriate emergency response capability including access to emergency resuscitation equipment.

2. **BACKGROUND:** Every year about 300,000 Americans die of sudden cardiac death (SCD). While some of the victims have known coronary artery disease (CAD) or a heart attack prodrome, about 1/3 actually have no warning and no related medical history.

a. For the past 40 years, it has been known that carefully applied electrical shocks can restore a normal cardiac rhythm to a victim of cardiac arrest. To be effective, such a shock or defibrillation ideally must be applied within three to four minutes of the cessation of normal heartbeats. The efficacy of defibrillation is directly tied to how quickly it is administered. The sooner the AED is utilized the more likely it is that it will be effective and that a patient will have a normal heart beat restored and fully recover. As the length of time between the onset of sudden cardiac arrest and defibrillation increases, the less the chance of restoration of heart beat and full recovery. In general, for every minute that passes between the event and defibrillation, the probability of survival decreases by 7 to 10 percent.

b. The Department of Veterans Affairs (VA) plans to stay abreast of this trend towards the distribution AEDs so that they can promptly be used, thus saving lives. AEDs are prescription devices that are intended to be operated only by individuals who have received proper training and training within a system that integrates all aspects from first responder care to hospital care. Therefore, there must to be a significant emphasis on training and, where needed, linkage to emergency medical service (EMS) systems. VA medical centers in general will not need to invoke 911 assistance, but community-based outpatient clinics (CBOCs), Vet Centers and so on, will.

c. The importance of rapid intervention is reflected in the American Heart Association (AHA) "Chain of Survival" concept. The "Chain of Survival" is designed to optimize a patient's chance for survival of sudden cardiac arrest and includes ready access to defibrillation. There are four links in the chain: early access, early cardiopulmonary resuscitation (CPR), early defibrillation, and advanced cardiac life support (ACLS). Note that early access means that people have been trained to quickly recognize possible cardiac arrest and that there is also a mechanism to simultaneously communicate the event and activate an emergency response from trained ACLS personnel.

d. AEDs approved by the Food and Drug Administration are available from multiple manufacturers and are on the Federal Supply Schedule. They have received widespread public

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acceptance (see subpar. 5a). More than 60,000 AEDs have been deployed in police cars, commercial airliners, airports, trains, hotels and casinos, sports arenas, high schools, manufacturing plants and other public places. **NOTE:** *They are less complicated, automated versions of the defibrillators that medical and rescue personnel have used for years.*

e. An unskilled operator can use an AED since it provides automated verbal instructions and follows treatment algorithms developed by AHA (see subpar. 5b). The value of the AED technology is that an AED will not energize unless an appropriate shockable cardiac rhythm is detected. The National Institutes of Health (NIH) has been a leader along with AHA, in facilitating the widespread use of AEDs. Numerous publications are now available to address these issues (see subpar. 5c and 5d). VA recommends that a specific training course be utilized by each facility for all facility personnel trained for the AED program. The AHA's HeartSaver course (which covers CPR and AED use in under four hours), or equivalent, will be needed. Nevertheless, in some cases personnel who have not had the course will be responding first.

3. POLICY: Network Directors and facility leadership are required to ensure that each facility, including medical centers, domiciliaries, and CBOCs, has appropriate emergency response capability.

4. ACTION

a. Network Directors and facility leadership must evaluate the need for AEDs, procure and install AEDs where appropriate, and train staff at designated locations remote to clinical areas. (see subpar. 5i for an excellent review of cardiac resuscitation and the Chain of Survival). In addition they must make the determination as to the type of equipment (crash cart with conventional defibrillator versus AED) that is to be located at specific sites designated by the facility standing Code or Cardio Pulmonary Resuscitation Committees. **NOTE:** *This is a mandatory interdisciplinary committee that reviews all local cardiac arrests (see M-2, Pt. IV).*

b. All VHA facilities are encouraged to ensure access to AEDs where feasible. Placement of AEDs in VA medical centers may be located in high-use areas such as lobbies and cafeterias. Placement in research buildings, out buildings with therapeutic swimming pools, and other remote facilities must be addressed and a decision for placement of AEDs made where there is "a reasonable probability of one AED use in 5 years (see subpar. 5b)." In some centers, VA police need to have an extra device to use in parking lots and other distant sites. **NOTE:** *Dialysis centers need to have AED's as well (see subpar. 5g).*

c. Devices are to be placed at an accessible height and secured to prevent or minimize the potential for tampering, theft, and misuse. The overall goal is to enable staff to travel to the device, return, apply the electrode patches, and still deliver a shock to the victim within an acceptable time frame. It is also important to note that these devices should ideally be installed next to an accessible telephone so that emergency responders can call for help (see subpar. 5h).

d. CBOCs without ACLS teams are required to have an AED. Smaller sites that do not have the appropriate staff mix to manage a code need to dial 911 in addition to retrieving and using

the AED. At these facilities, the Chief Medical Officer, in consultation with the code team at the parent facility, must determine the best location for AEDs throughout the facility.

e. Each parent facility must have a roster of all devices and a diagram of their location for the facility's emergency plan.

f. Facility directors are responsible for ensuring hands-on training, including cardio-pulmonary resuscitation (CPR) for designated emergency response staff specific to locations where AEDs will be installed, making sure to cover all shifts, even though AEDs are designed for use by unskilled operators.

(1) Certain accessories should be made available where AEDs are located such as disposable gloves, disposable CPR facemasks, ambu bag, paper and pencil to record the events, disposable razors, medical waste plastic bags and absorbent towels.

(2) Awareness training should also be provided to ensure that all staff, on all shifts, are knowledgeable about the placement of the nearest AED. Training needs to include VA police or contract security services, as well as medical and administrative personnel.

f. The facility's Code Team must review and assess each cardiac arrest treatment as an important aspect of quality assurance. *NOTE: AEDs are designed with data storage capabilities to retrieve actions subsequent to an event. All events should be reviewed by the parent facility's Code Committee.*

g. Network Directors and facility leadership are responsible for designing a maintenance program for AEDs. *NOTE: Manufacturer service documentation must be consulted before designing a maintenance program. Unlike defibrillators found on crash carts, AEDs are nearly maintenance free and daily operator testing by charging and discharging the AED is typically not required.*

5. REFERENCES

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6. FOLLOW-UP RESPONSIBILITY: The Assistant Deputy Under Secretary for Health
(10NB) and Patient Care Services (111A) are responsible for the contents of this directive.

7. RESCISSIONS: This VHA Directive expires September 30, 2006.

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