AUTOMATED EXTERNAL DEFIBRILLATORS

The Shocking Truth

PRIMA CONFERENCE
Reno, Nevada
May 19, 2003
The Reality of Life...

...Someday everyone will die!

...Someday everyone will die!
The Problem

Premature Death
The #1 Killer in the United States in Cardiovascular Disease and Stroke!!!

Specifically, in the United States, 250,000 people die each year die of Sudden Cardiac Arrest
Sudden Cardiac Arrest

....caused by Ventricular Fibrillation

• V-Fib is the most frequent initial rhythm in sudden cardiac arrest
Sudden Death

“V-Fib”

• V-Fib is a useless, chaotic quivering of the heart that results in no blood flow
Patient Symptoms when in Ventricular Fibrillation

- Unconscious
- No Effective Heart Action
- No Breathing
- Looks Terribly Sick & Discolored

Resulting in...

No Oxygen to the Brain or Body Organs

Life or Death is now a matter of **TIME**
The Only Effective Treatment for V-fib

De-fib
The problem in perspective:

- 250,000 people die each year from sudden cardiac arrest
- 75-80% occur outside of the hospital
- Less than 5% survive
We Know The Solution

The Chain of Survival

Early Access
Early CPR
Early Defibrillation
Early Advanced Care
The Question

Why do only 5% survive?
The Weak Link

Early Access
Early CPR
Early Defibrillation
Early Advanced Care

© American Heart Association
Why **EARLY** Defibrillation?

For each minute that passes **without** defibrillation, the persons chance of survival **decreases** by about **10%**
The Weak Link

• The Chain of Survival is only as strong as its most critical link

• In most cases of cardiac arrest the critical link is early defibrillation
But despite EMS advances...

Sudden Deaths continue to increase.
Barriers to quick response

- Traffic
- Weather
- Distance

- Road closures
- Elevators
- Gated communities
- Large Campuses
- Difficult locations
- Etc., etc.
What time barriers does your business have?
Public Access to Defibrillation Programs (PAD Programs)

The Concept:
Trained lay rescuers equipped with defibrillation capabilities in settings where a large number of people congregate, live or work - improves survival rates for cardiac arrest victims.
PAD Programs: The Goal

Positively impact the out-of-hospital cardiac arrest survival rate by having defibrillation capability available to victims within 3-5 minutes of the onset of cardiac arrest.
Successful PAD Programs incorporate four key elements:

- AED
- Medical Oversight
- Training
- EMS Integration
The Solution to Sudden Death

Shocking AED
Automated External Defibrillators

✓ Safe
✓ Simple Use
✓ High Success Rate
AEDs

ONLY Advise Shocks

If there is a shockable rhythm
AEDs
Prompt the user in what to do
- Visual
- Readiness
- Audible
AED Placement - *Where*?

- AEDs should be strategically placed to optimize the response rate of 3-5 minutes
AED Maintenance

Maintenance Procedures: Designate
individual to:

• conduct maintenance checks on AED(s)
  (according to manufacturer recommendations)
• order supplies
• follow-up with manufacturer on
  maintenance issues
Successful PAD Programs incorporate four key elements

- AED
- Medical Oversight
- Training
- EMS Integration
Medical Oversight

• FDA requires a physician’s prescription to purchase an AED
• Physician brings leadership, authority and medical expertise to the PAD program
• Ensures rescuers are properly trained and skills maintained
• Responsible for incident review
Program Coordinator

• Typically someone on site
• Responsible for day-to-day activities associated with the PAD program
  – AED maintenance checks
  – inventorying & reordering supplies
  – scheduling of training & retraining
  – aspects of event review
• Extent of responsibility determined by PAD oversight physician
Medical Director and Program Coordinator:

- Emergency response plan
  - Include PAD Team to ensure continuation of program implementation, consistent training and follow up
  - Indicates most efficient actions and responsibilities of responders
  - Includes repeated orientation of staff to these policies and procedures for a comprehensive understanding of the program
  - Continued updates with the Medical Director for quality assurance
Successful PAD Programs incorporate four key elements:

- AED
- Medical Oversight
- Training
- EMS Integration
Training

- Helps to alleviate panic
- Integral part of response plan
- Teaches the responder how to identify an emergency
- Gives responder confidence to act
Training (continued)

• Who and how many?
  - Best case scenario – every employee
  - Minimally – response team trained in AED and as many others as possible in CPR
Training (continued)

Heartsaver AED

- Access EMS System
- Adult CPR (one rescuer)
- Relief of foreign body airway obstruction
- Use of barrier device
- Use of an AED

- Scenario based
- 3 ½ - 4 hour course
- Written evaluation
- Hands on practice and skills test
- Re-certification every two years
Who can be trained to use an AED?

- Flight Attendants
- Security Guards
- Firefighters
- Ushers
- Corporate Emergency Response Teams
- Cruise Ship Personnel
- Lifeguards
- Mall Workers
- Police
- Golf Pros
- Health Club Employees
- Students
- Office Staffs
- Physicians
Successful PAD Programs incorporate four key elements:

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- Medical Oversight
- Training
- EMS Integration
Integration with EMS

• Imperative and required part of PAD programs
• Allows your address to be marked with premise alert stating you have an AED
• Dispatchers can assist with AED instructions if necessary
• Dispatchers can notify local EMS unit AED has been used or is present
• Liability concerns first raised in early and mid-1990s--questioning the risks of improper use of AEDs.

• Now widely accepted as safe, AEDs are easy-to-operate and capable of reversing SCA.

• Soon, the greater liability risk will be *not* having AEDs.
Liability Concerns

- Liability concerns first raised in early and mid-1990s—questioning the risks of improper use of AEDs.
- Now widely accepted as safe, AEDs are easy-to-operate and capable of reversing SCA.
- Soon, the greater liability risk will be *not* having AEDs.
What Laws Apply to PAD Programs?

• **Cardiac Survival Act** [HR 2498]: President Clinton signed into law on 11/16/00. Encourages placement of AEDs in federal buildings and provides nationwide Good Samaritan protection.

• **Arizona’s AED Bill** [ARS 36-21.1]: Approved by the governor in 1999. Provides liability protection for trained responder, instructor, physician, premises owner and AED acquirer.

• FDA requires medical oversight by physician.
Most Laws Governing PAD Programs Require

- **Registration** with the local EMS provider.
- **Medical supervision** A physician who signs off on the purchase, maintenance, and usage of the devices.
- **Regular Maintenance Testing** per manufacturer’s specifications.
- **Training for Potential Users** includes CPR training and must be updated every 2 years.
MCCCD AED Committee

4/13/01: Memo to Chancellor’s Executive Council from District Safety Committee recommending all colleges establish PAD Programs.

Spring 01: Meetings with American Heart Association and AED vendors.

8/8/01: Informational meeting regarding implementation of District PAD Program.
MCCCD AED Committee

- **9/20/01**: First AED committee meeting held. Pima Community College Director of Environmental Health & Safety joins committee.

- Meetings held every three weeks; members establish these goals:
  - Assess individual college needs
  - Assist with training efforts
  - Institute an annual monitoring program
<table>
<thead>
<tr>
<th>Date</th>
<th>Event Description</th>
</tr>
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<tbody>
<tr>
<td>12/01</td>
<td>Proposal to VC of Business Services requesting $225,000 funding</td>
</tr>
<tr>
<td>1/02</td>
<td>Approval for full funding received</td>
</tr>
<tr>
<td>2/02</td>
<td>Commenced training efforts</td>
</tr>
<tr>
<td>2/02</td>
<td>Issued RFP</td>
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<tr>
<td>3/02</td>
<td>Received and reviewed vendor proposals</td>
</tr>
<tr>
<td>4/02</td>
<td>Media and public relations efforts began</td>
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<tr>
<td>4/02</td>
<td>Award contract to vendor</td>
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<tr>
<td>5/02</td>
<td>Installation of AEDs at MCCCD locations</td>
</tr>
<tr>
<td>Ongoing</td>
<td>Continuous monitoring of program</td>
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MCCCD
AED Committee
Members
MCCCD AED Committee:
Sub-Committees

- Assessment
- RFP/Purchasing
- Training
- Proposal
- PR/Marketing
<table>
<thead>
<tr>
<th>Statistics</th>
<th>Value</th>
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<tr>
<td>AEDs Installed</td>
<td>96</td>
</tr>
<tr>
<td>Employees Trained</td>
<td>1,000+</td>
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<tr>
<td>Locations Installed</td>
<td>29</td>
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Helpful Tools

- AED Training Units
- Videos
- Stickers
  - Hearts for Name Plates & Badges
  - “Heart Safe” Facility
- Face Shields
- Blue Lights
- Refresher Training
Public Access Defibrillation

For use by...

...just about ANYONE
just about ANYWHERE
The Benefits of an AED Program

- Prevent Premature Death
- But it also
- Extends Life and Productivity
- Enhances Employee & Client Morale
- Enhances Employee & Client Loyalty
- Promotes Personal Safety & Health
- Limits Liability Exposure
- ...and if death occurs
- Comfort, Support & Closure for Family
The Problem

Premature Death

What are you going to do about it?
When Hearts & Brains Are Too Good to Die

Sudden Death Can Be Interrupted &

Life Can Be Extended

You Can Do It!
Take Home Message:

• Sudden Cardiac Arrest is an extremely time sensitive emergency
• Defibrillation is the **ONLY** known treatment
• AEDs, put in the hands of trained lay rescuers, **SAVE LIVES!!**
AED Program

The right thing to do
Call for emergency services.

Remove victim’s upper clothing to expose skin; follow pictures on the electrode pads to place the pads.

Press the button on the AED that activates the checklist routine.

Listen to directions as given audibly by AEDs.
AED Demonstration

- AED checks for pulse and audibly announces whether a shock is needed.
- AED warns bystanders to stay clear of victim; rescuer presses “Shock” button.
- Shock is delivered; checklist sequence is repeated until either a normal pulse is detected or EMS arrive and take over.
QUESTIONS?

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