

ZOLL Offers
2005 AHA
Guidelines-Compliant
AEDs

AEDs Today



A Young Life Saved. A Young Man on a Mission.

“When I got to Matt’s side, it was clear that he was in deep trouble.”

That’s what Jim Ouellette, RN, thought when he came upon 17-year-old Matt Keene, who collapsed after football practice at Kimball Union Academy (KUA), a New Hampshire residential school for grades 9-12.

The actions of Jim, and other KUA athletic staff, saved Matt’s life.

Jim, Katherine Bello, and Robert Hyjek ran to Matt’s side with a ZOLL AED Plus® with Real CPR Help.™ They quickly assessed Matt, found that he wasn’t breathing, started CPR, and attached the one-piece electrode to Matt’s chest.

After one shock, they did another round of chest compressions, and then something amazing

happened. “Out of the blue, Matt took this big, deep breath and he started to pink up,” Jim said. “He had a strong pulse and started breathing on his own. At that point, we sat tight until the rescue squad arrived.”

“I would highly recommend AED programs and CPR training for all schools,” said Michael J. Schafer, Head of School at KUA. “We never thought that we would ever need such a program, but it successfully saved Matt’s life. Our nurses and trainers are unsung



Matt Keene, cardiac arrest survivor

The Inconvenient Truth: Most AEDs Only Work on Half of SCA Victims

Some manufacturers would have you believe that an automated external defibrillator (AED) is all you need when it comes to sudden cardiac arrest (SCA). Just place the electrode pads, deliver a shock, and the victim will sit up and thank you for saving his life. If only it were so simple.

But this is a myth. To understand the myth, you must understand what defibrillation is.

What Does Defibrillation Actually Do?

Many think defibrillation actually “restarts” the heart, but

this is a fallacy. Defibrillation “stuns” the heart, briefly stopping the heart’s chaotic electrical activity that led to SCA. Once defibrillated, or stunned, if the heart is still viable, its normal pacemakers may then resume firing and produce an effective rhythm that may ultimately produce adequate blood flow.

Dispelling the Myth

Less than half of all SCA victims require defibrillation initially because they are experiencing heart rhythms that are not “shockable”; that is, defibrillation will not help these victims’ hearts beat normally again. The critical action is immediate CPR. Why?

1. CPR provides a small but critical amount of blood to the heart and the brain.
2. CPR is especially important if defibrillation isn’t delivered for four or more minutes after a collapse.

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heroes that came through when it counted. Not only did they save the life of a special young man, but also they made an enormous difference in the sense of security we have in this community.”

Matt’s parents arrived at the hospital to find Matt surrounded by school staff and friends.

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Study Finds Eighth-Graders Can Learn CPR/AED Skills in One Hour

A 2006 article in the journal *Resuscitation* notes that middle-school students can learn and retain lifesaving skills after receiving a one-hour CPR/AED training program, which easily fits into a school's curriculum.

"Two major factors for low survival rates are the lack of bystander-initiated CPR and the low use of AEDs by the public," said Bentley J. Bobrow, M.D., Medical Director, Bureau of Emergency Medical Services for the Arizona Department of Health Services. "These challenges can be overcome if more young people learn bystander chest-compression-only CPR and AED usage."

For the investigation, researchers from the Mayo Clinic Arizona, the University of Arizona Sarver Heart Center, the Arizona Department of Health Service, and Phoenix Children's Hospital developed a one-hour focused AED/CPR training program for eighth-grade students. Forty-two students from Madison Meadows Middle School, with permission from their parents, were enrolled.

Students trained on the ZOLL AED Plus® with Real CPR Help™ technology showed proficiency and skill retention four weeks later. This is the first study that documents the ability of middle-school students to learn and retain CPR and AED skills for adult cardiac arrest victims.

Bobrow noted that the project is part of the Save Hearts in Arizona Registry & Education (SHARE) Program. The program's objective is to improve cardiac arrest survival through promoting bystander CPR, early defibrillation programs, and optimal resuscitation strategies.

He also noted that an additional study is under way to demonstrate that paramedic/fire personnel can deliver this kind of education cost-effectively using existing local resources.

A Young Life Saved

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"If KUA hadn't done what they did, Matt wouldn't be here today," said Edwina Keene, Matt's mom. "The physicians said that we were quite lucky. Matt was without oxygen for no more than two minutes. Getting the AED to Matt as quickly as they did and starting CPR right away were critical to helping Matt when he needed it most. We are so

grateful. And we want others to have the same opportunity for survival that Matt has had."

Matt and his family are now on a mission to have AEDs required in all schools. Just weeks after his event, Matt met with New Hampshire's governor and legislators to discuss how to mandate AEDs for all athletic events at New Hampshire schools.

To see a video about Matt's rescue, visit www.zoll.com/AYoungManSaved

General AED Mandates Can Help Increase SCA Survival

Richard A. Lazar, Esq.

More than 400,000 AEDs are now found in workplaces and other public settings throughout the U.S. Generally, organizations buy AEDs for one of three reasons:

1. Voluntary choice – Individual choice driven by an organizational champion based on growing awareness, life saved, or death;
2. Coerced voluntary choice – Fear that not having an AED may create the risk of a negligence lawsuit based on a violation of a perceived standard of care; or
3. Legislative mandate – A legislature requires that a particular type of organization buy AEDs.

To date, legislative AED mandates have focused on organizations such as health clubs, schools, large-occupancy buildings, and government buildings. Such targeted mandates will necessarily result in a limited public health benefit. These targeted mandates result in only a small, incremental increase in the number of AEDs deployed within a community, cover only a limited response area, and impact a small percent of a community's population.

Because targeted mandates are limited in scope, state legislators may soon begin to consider



general mandates requiring, for example, that certain locations with 100 or more persons on site per day buy AEDs. Only general AED mandates can help significantly increase sudden cardiac arrest (SCA) survival rates, because AEDs will more likely be nearby when SCA strikes. For this reason, general mandates are worthy of serious public policy consideration.

Richard A. Lazar is widely recognized as the leading expert in AED program design and operations, risk management, law, and public policy. He serves as President and CEO of AED Risk Insights, Inc. (www.AEDRiskInsights.com), a provider of AED program design, risk management, public policy advocacy, and information services. E-mail him at rlazar@AEDRiskInsights.com.

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Inconvenient Truth

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3. Even after the heart is “stunned,” it still may not pump blood effectively in the first minutes after successful defibrillation. Therefore, CPR may be needed several minutes following defibrillation to help the heart along.

Some AEDs remind rescuers to do CPR, but no AED – other than ZOLL’s – **helps** rescuers perform both the correct rate and depth of chest compressions, critical for effective CPR.

realCPR help™

ZOLL’s 2005 AHA Guidelines-Compliant AED Plus® and AED Pro®, with Real CPR Help™ technology, are the only AEDs available today that allow rescuers to see and hear how well they are performing the rate and depth of chest compressions during CPR.

Here’s how:

- If rescuers don’t start CPR immediately, ZOLL’s AEDs tell them again after 15 seconds to “Start CPR.”
- If they stop for longer than 10 seconds, ZOLL’s AEDs tell them to “Continue CPR.”
- If they are going too slow, the adaptive metronome beeps faster to speed them up.
- Most importantly, if rescuers are not pushing hard enough to get at least 1½ inches deep with their chest compressions, ZOLL’s AEDs tell rescuers to “Push harder.”
- The bar gauge on the device’s display allows rescuers to see how well they are doing with each chest compression, which helps them provide the best CPR possible.

To learn more, contact ZOLL at 800-804-4356 or visit www.zoll.com/AEDPlusMythBuster for a virtual demonstration.

AED Pro vs. a Lake in Texas: Routine Training Proves Anything But...



Flower Mound Police and Fire/Emergency Services were conducting training on Lake Grapevine near the Dallas/Ft. Worth area. One maneuver involved reversing the boat at high speed.

As a police sergeant undertook this maneuver, the boat took on water at the stern. Before it could be corrected, the boat capsized and sent all aboard into Lake Grapevine.

The boat was towed to a marina, where a salvage crew finally righted it five hours later. A salvage crew member handed Assistant Fire Chief Scott Mitchell the AED Pro® in its canvas bag as Lake Grapevine poured out. Mitchell opened the case to find a waterlogged set of electrodes and emergency kit.



Fortunately, no water got into the AED Pro itself. This is because the AED Pro has been tested for particle and water ingress, and has a rating of IP55 – the highest rating of any AED available today. “I fired it right up and it went into its self-check,” said Mitchell. “It presented itself as good to go. I was really quite impressed that the AED Pro worked as advertised.”

To be safe, Mitchell sent the AED Pro back to ZOLL to have it evaluated by Technical Services. The AED Pro unit passed all tests and was released to go back into service, ready for the next “routine” exercise.

Which AED Supports CPR Best? AEDs from ZOLL.

Support Given During CPR	ZOLL AED Plus®	ZOLL AED Pro®	Philips® OnSite/Home	Cardiac Science PowerHeart® G3	Medtronic/Physio-Control Lifepak CR Plus™	Welch Allyn AED10™
<ul style="list-style-type: none"> • Can SEE CPR • Feedback for rate and depth • Helpful prompts and bar gauge for each compression <p>realCPR help™</p>						
<ul style="list-style-type: none"> • Blind to CPR • No feedback for rate and depth • Some coaching prompts 						
<ul style="list-style-type: none"> • Blind to CPR • No feedback for rate and depth • No coaching prompts • No support 						

Information taken from manufacturer’s specifications and ZOLL product testing.