CASE STUDY

ZOLL AED Plus and Bystander CPR Help Save Basketball Player's Life

Because they were prepared, the Shenandoah County, Virginia school system and its staff were equipped to help save a life when every second counted.

The Incident: Recreation Department Basketball Game Turns into an Emergency

Bill Simmons, a special education teacher and coach in the Shenandoah public schools, and a 36-year old, Greg Long, were opponents in a Shenandoah County Parks and Recreation Department league basketball game. Before the end of the game, they found themselves on the same team. Halfway through the game, Greg collapsed on the court, and Bill helped save his life.

The Rescue: Quick Bystander Action Aids Victim

Bill had been trained in cardiopulmonary resuscitation (CPR) and the use of an automated external defibrillator (AED) a few months earlier through the school system. When he saw Greg collapse, his first instinct was to grab the AED from the hallway. Even though Greg had regained consciousness and was sitting up, Bill ran to get the AED while a fellow player called 911.

By the time Bill returned with the AED, Greg had no pulse and was not breathing. Three of Bill's colleagues, who also had been recently trained in CPR through Parks and Recreation, were taking turns administering CPR. Bill turned on the ZOLL® AED Plus® and followed the voice and visual prompts to guide him through the Chain of Survival. When the AED prompted "Attach Electrode Pads," Stuart Leake, who coincidentally was Bill's partner during AED training, wiped off Greg's chest, and Bill applied the electrodes. The AED Plus advised that a shock was needed and, when instructed, Bill pressed the flashing shock button.

After one shock was administered, the AED prompted the rescuers to "Start CPR." The AED Plus, equipped with Real CPR Help® technology, gave real-time feedback to the rescuers on the correct rate and depth of compressions. The AED instructed the rescuers to "Push Harder," which helped them to provide high-quality CPR to Greg.

Bill estimates that approximately seven to eight minutes elapsed from the time Greg first collapsed until the paramedics arrived. *"All I know is that before Greg was transported to the hospital, he was breathing on his own; it happened 2 minutes after the paramedics got there. Within 10 minutes, Greg had gone from not having a pulse and not breathing to breathing on his own. I'm not sure this would have been the case if we didn't have an AED to provide a needed shock and didn't perform good CPR chest compressions."*

Bill Simmons

Bill emphasized that he is *"not a hero. I get credit for being trained, which gave me the confidence to get the AED and know when to use it. Anyone in that situation would have done the same thing. Because the school administration had AEDs and their staff were trained to use them, which helped save Greg's life."*

"I'm a big supporter of having AEDs in the schools," said Dr. B. Keith Rowland, superintendent of Shenandoah County Schools. "This is one of those things that you don't need until you need it. If you think you're going to never need it, you are probably mistaken. We've already needed it twice in the short time I've been superintendent."

"The public needs to know that AEDs need to be in schools, people need to be trained, and people need to know that AEDs are available and where they are," said Bill. "They give people a better chance of surviving sudden cardiac arrest."

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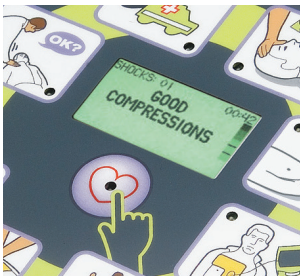
Dr. B. Keith Rowland, Superintendent
Shenandoah County Schools

The Resources: Importance of AEDs in Public Places

Greg Long had a fighting chance because of bystander intervention as well as the foresight of the Shenandoah County school system to install AEDs. Each school building is equipped with at least two AEDs, and all coaches are trained on CPR and the AED. *"We wanted the broadest reach possible,"* said Jeremy Raley, director of finance for the Shenandoah County Schools. The district's health services coordinator, Barbara Streett, R.N., oversees the AED program, working with each school nurse to coordinate follow-up training at least once a year as well as to oversee AED maintenance.

According to the American Heart Association, in most emergencies the quality of CPR the rescuer provides can make the difference between life or death.[1] Even trained professionals often do not perform CPR optimally and can benefit significantly from monitoring and support. A recent study reported in *Resuscitation* shows that audio and visual CPR feedback improves the quality of chest compressions delivered by healthcare providers.[2]

The AED Plus provides voice and visual feedback on the quality of chest compressions, such as "Push Harder" and "Good Compressions." The adaptive metronome helps the rescuer maintain the correct rate.



[1] *2005 American Heart Association Guidelines for Cardiopulmonary Resuscitation (CPR) and Emergency Cardiovascular Care.*

[2] Peberdy et al. Effect of Caregiver Gender, Age, and Feedback Prompts on Chest Compression Rate and Depth. *Resuscitation. 2009.*

ZOLL Medical Corporation develops and markets medical devices and software solutions that help advance emergency care and save lives, while increasing clinical and operational efficiencies. With products for defibrillation and monitoring, circulation and CPR feedback, data management, fluid resuscitation, and therapeutic temperature management, ZOLL provides a comprehensive set of technologies which help clinicians, EMS and fire professionals, and lay rescuers treat victims needing resuscitation and critical care.

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