



CASE STUDY

Save of First Grader Shows Community Importance of AEDs



Logan Powell, a happy-go-lucky six-year-old, didn't want to go to school on October 13. He loved first grade, but he was feeling crummy. His mother, Laura, took his temperature, and when she saw it was normal, she sent him off to the East Meadows Elementary School, in Spanish Fork, Utah.

But the day turned out to be far from normal.

"He looked fine," said Laura. "I honestly thought he was just faking it and he was just tired. I had no clue that something was severely wrong with his heart."

In the late morning, Logan headed to gym class right after recess. As he and his classmates were on the playground listening to instructions, he dropped to the ground. A girl realized something was wrong and alerted the teacher. The teacher, noting that Logan had vomited and was not breathing, called the front office. The school secretary ran onto the playground and began cardiopulmonary resuscitation (CPR) while the office called 911.

Lieutenant Steve Adams of the Spanish Fork Police Department arrived on the scene just over two minutes after the call. He took over CPR as well as performed mouth-to-mouth resuscitation.

Lt. Brandon Anderson of the Spanish Fork Police Department arrived next, followed by a patrol officer who brought one of the department's automated external defibrillators (AEDs). Lt. Anderson helped hook

up the electrodes to Logan, and the ZOLL® AED Plus® advised a shock. Seven to eight minutes after the initial call, a shock was administered. Logan gasped. But still his heart did not beat.

As the AED advised, Lt. Adams resumed CPR. The AED Plus encouraged the rescuers by announcing "Good Compressions," which helped reinforce that their chest compressions were the correct depth and rate.

The ambulance arrived within a minute of the first shock, and the EMTs took over. They administered another shock, and this time, Logan's heart began to beat again.

"CPR was not bringing him back," said Laura. "He needed his heart to be shocked back into rhythm. It was an incredible event when it did!"

Logan was rushed to the hospital, where it took cardiac specialists four days to determine the cause of his sudden cardiac arrest (SCA). As Logan was undergoing surgery to insert an internal defibrillator, the doctors discovered he had a major congenital heart defect. His aorta was not attached to his coronary artery on the left side of his heart.

The doctors rescheduled the surgery, and Logan soon underwent open heart surgery to repair his previously undiagnosed heart defect and to insert the internal defibrillator.

The 2010 American Heart Association Guidelines for Cardiopulmonary Resuscitation and Emergency

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Logan's mother, Laura Powell

Cardiovascular Care say that in most emergencies, the quality of CPR the rescuer provides can make the difference between life and death. A research study also shows that audiovisual CPR feedback improves the quality of chest compressions health care providers deliver.¹

ZOLL's AED Plus provides Real CPR Help® technology, which gives rescuers real-time depth and rate feedback on the CPR they are delivering. This guidance can improve CPR quality and give them confidence that they are providing good-quality CPR. ZOLL was the first to introduce CPR feedback technology in 2002 to help improve CPR performance.

Importance of AEDs

"It is vital to have AEDs in every one of our buildings since we have only seconds to save a life," said Lana Hiskey of the Nebo School District. "We now have AEDs in each of our schools. We are very grateful to the Spanish Fork Police Department for helping to save a life with their AED."

Within three months of Logan's incident, all Spanish Fork schools had at least one AED in the building. Within six months, all Spanish Fork Police Department vehicles, including unmarked cars, had their own AED assigned to them. Up until then, the department had AEDs in most of its vehicles. The department had received the majority of its AEDs anonymously from a business owner who saw their value after a Spanish Fork police officer helped save the life of one of his employees using an AED. Since 1999, when the department began its AED program, officers have helped save 10 lives, including Logan's, with its AEDs.

¹Abella B, et al. "CPR quality improvement during in-hospital cardiac arrest using a real-time audiovisual feedback system," *Resuscitation*, 2007;73:54-61.

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ZOLL Medical Corporation, an Asahi Kasei Group company, develops and markets medical devices and software solutions that help advance emergency care and save lives, while increasing clinical and operational efficiencies.

"AED's have been a great asset to the department and the citizens who live and visit our community," said Lt. Anderson. "After seeing the AED work first-hand on more than one occasion in our community, words can't describe how valuable these devices are in helping save lives."

Two Years Later

After two years, Logan is finally back playing soccer again for the first time.

"I couldn't believe it when we went to his first soccer practice," said Laura. "The odds are that I wouldn't still have him, and he is back kicking and running with kids his age. How normal is that?"

Logan also serves as a spokesperson for the Nebo School District as well as Tender Heartbeats, an organization that helps elementary schools in Utah purchase AEDs. He talks about the importance of AEDs and of training staff to use them.

"It's been a journey," explained Laura. "When you're really tested and tried with challenges, so many good things can come out of it. We have had lots of opportunities to grow and help others."

The ZOLL AED Plus, the first and only Full-Rescue AED that provides Real CPR Help® for depth and rate of chest compressions, audibly coaches rescuers with prompts that say "Push Harder" or "Good Compressions" during CPR.



For more information on the ZOLL AED Plus, please call 800-804-4356 or go to www.zoll.com/aedplus.

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