

## CASE STUDY

# Bystander and Boston EMS Bicycle Squad Bring Boston Marathon Runner Back to Life



*How immediate bystander CPR and the fast response of the Boston Emergency Medical Services (EMS) Bicycle Squad, using ZOLL's AED Pro®, helped save the life of a 64-year-old veteran marathon runner.*

### **The Incident: Marathon Runner Collapses at Mile 25**

At 1:30 p.m. on April 19, 2010, the 114th Boston Marathon turned from a race of 26,790 runners competing to cross the finish line to a race of one runner fighting for his life.

Less than two miles from the finish line, at the intersection of Beacon and Mountfort streets near Kenmore Square, Carleton Smith collapsed from sudden cardiac arrest (SCA).

Carleton had traveled from Metairie, Louisiana, to run alongside his 34-year-old son, Jimi, who came in from San Francisco. A veteran of four marathons and nearly 1,000 long-distance races over his 30-year racing career, Carleton had recently placed first in his age group in the 2010 Rock 'n' Roll Mardi Gras Marathon and finished the 2007 Boston Marathon in just over three hours.

The father and son runners started their first race together in high spirits. "I looked over at him at one point around mile 21 or so and his form was perfect," Jimi said. "He looked strong and relaxed, just like any day you would see him on the levee running." But by around mile 25, things started to change. Carleton began to feel weak in the knees and slowed to a walk.

Jimi was surprised to see his dad walking and quickly noticed he was pale. Then, the long-distance runner, who would run up to 85 miles a week when training, staggered and fell unconscious.

### **The Rescue: Quick CPR Response and AED Save Competitive Runner**

With thousands of runners racing by, Jimi quickly moved his father to the side of the road with the help of a police officer and checked his pulse. There was none. A doctor, who was watching the race, jumped the barricade to start performing CPR until paramedics arrived. Lt. Carlos Grau and EMT Kelley Cronin from the Boston EMS Bike Squad arrived on the scene within minutes with an automated external defibrillator (AED). Another Bike Squad EMT, Janell Jimenez, arrived soon after.

The AED was turned on and the electrodes attached to Carleton's chest. After the initial analysis, the ZOLL AED Pro prompted, "Shock Advised." Once the shock was administered, the AED prompted EMT Cronin to "Start CPR." During CPR chest compressions, the AED provided realtime feedback using Real CPR Help® technology to guide her to the correct depth and rate of compressions. After the CPR cycle, the AED reanalyzed and prompted a second shock as Carleton was moved into the ambulance.



**Carleton Smith running in the marathon.**

This was Janell Jimenez's first save. "It was so surreal how we can be at the right place at the right time with the right equipment," said Jimenez, an EMT for 4½ years. "And then maneuvering through the marathon—we thought that would be a challenge, but we were able to move right through the crowd."

In transit to the hospital, Carleton's heart began to beat normally, and he started breathing on his own. By the time Carleton arrived at Beth Israel Deaconess Medical Center, he was able to talk. Twenty minutes later, he had a stent in his left anterior descending artery.

*"It was so surreal how we can be at the right place at the right time with the right equipment ..."*

*Janell Jimenez, EMT  
Boston EMS Bike Squad*

### **The Resources: The Importance of AEDs in Public Places**

If it weren't for early bystander CPR, EMTs and paramedics, as well as the timely availability of a defibrillator, Carleton may not have finished the race of a lifetime.

*"We encourage everybody to know CPR, and the difference that was made was that a bystander was able to recognize that this patient was not breathing and didn't have a pulse, and her instinct was to give him CPR," Jimenez said. "That probably was one of the factors for this gentleman being alive today."*

*"It was an amazing team response, from the bystander who began CPR, to the Boston Police on scene, to the EMTs and paramedics who worked together so well," said Jennifer Mehigan, spokesperson for Boston EMS.*

*"Boston EMS equips our bike teams with an AED for these exact situations, and we're proud that our EMTs responded so efficiently and effectively with the skills and equipment they needed to help save a life," she added.*

Boston EMS equips its bike squad with ZOLL AED Pros. These defibrillators weigh less than five pounds and are durable, so they can go anywhere, in any weather. They are designed for quick access to help speed up the rescue process. Carleton, a retired employee of New Orleans Public Service, Inc., and a former Jefferson Parish Sheriff's deputy, is grateful for the speedy response of the rescuers and the availability of the AED, which helped save his life.

*"If it weren't for the quick thinking of my son, the luck of having a doctor nearby, the skilled response of the EMTs, and the availability of the AED, I doubt I would be planning my next run. I've got so many races behind me, it's time to back off, and just do it for pleasure and to stay healthy."*

**The AED Pro 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.**



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