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CARDIAC ARREST: INCREASING ODDS OF SURVIVAL

School defibrillators could be a lifesaver

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Every school with a competitive athletics program should put a series of measures in place to ensure that athletes who suffer cardiac arrest have a fighting chance to live, according to newly published medical guidelines.

The recommendations, published in this month's edition of the medical journal *Heart Rhythm*, say that all high schools, colleges and universities should have a readily accessible automated external defibrillator at sporting venues, as well as students and staff trained in cardio-pulmonary resuscitation and a practised plan for summoning help.

Jonathan Drezner, a physician at the University of Washington in Seattle, and lead author of the guidelines, said that while sudden cardiac arrest is rare in young people, it is still the leading cause of death in young athletes.

Having AEDs - easy-to-operate heart-shocking devices - at sporting events is also a great benefit to spectators, coaching staff and other personnel, he said.

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When the heart stops, due to trauma or an underlying heart problem, quick action is imperative. When the heart is restarted within one minute, the survival rate is 90 per cent; at 10 minutes, it is less than 10 per cent.

"The most important factor in survival is the presence of a trained rescuer who can initiate CPR and who has access to early defibrillation," Dr. Drezner said.

In North America, an estimated 400,000 people a year suffer sudden cardiac arrest, and survival rates are dismally low, in large part due to slow response.

Most people whose heart stops suddenly are older. But the new guidelines shine a light on young people.

In Canada, about 100 children a year die of sudden cardiac arrest. Most of them have undetected heart conditions or anomalies, and they tend to die during a bout of physical exertion.

Eleven-year-old Chase McEachern was jogging slowly before a volleyball game when he collapsed in the gymnasium of Prince of Wales Public School in Barrie, Ont., in February, 2006.

The boy, a star athlete, had been diagnosed not long before with atrial flutter, a form of arrhythmia or abnormal heart rhythms.

In a tragic irony, Chase had been pushing to get AEDs in public places like arenas, community centres and schools, a campaign that was bolstered when a letter he wrote to Don Cherry was read posthumously on *Hockey Night in Canada*.

John McEachern said he doesn't know if having an AED in place at the school would have saved his boy's life.

"I would love to say 'Yes,' but I don't know," he said. "What I do know is that we should be giving everybody the chance to be saved. We should be putting defibrillators wherever the public is going to be."

Joel Kirsh, a staff cardiologist at the Hospital for Sick Children in Toronto, agrees. "We should have AEDs in every school," he said in an interview. "It's technology that's been proven to save lives."

Dr. Kirsh said that just as schools are equipped with smoke alarms, fire extinguishers and practice fire drills, they should also have defibrillators on site and train staff and students to use them.

"You're about 100 times more likely to die of cardiac arrest than in a fire, so where you have a fire extinguisher you should have a defibrillator," he said.

Dr. Kirsh is heartened by the recent move by the Mikey Network, a small charity, to place defibrillators in every high school, outdoor education centre and administrative office of the Toronto Public School Board, but said the action should be extended country-wide.

He also stressed that "dropping a defibrillator at the front door is not enough; you have to train people to use it."

An automated external defibrillator is a device containing sophisticated electronics used to identify cardiac rhythms, and to deliver a shock to correct abnormal electrical activity in the heart.

AEDs will only deliver a shock if the heart is in a rhythm that can be corrected by defibrillation, meaning the machines are basically idiot-proof.

However, responders need to be trained to identify cardiac arrest (which is different from a heart attack, a stroke or fainting), where the AED is located and how to use it quickly, along with complementary skills like CPR.

Sandra Clarke, executive director of the ACT Foundation, a charity whose mission is to train all high-school students in CPR, said AEDs are a great add-on.

The foundation has begun a pilot project in Ottawa where it trains students and teachers in defibrillation as well as CPR.

Ms. Clarke said that "schools are, increasingly, public places, so it's a great idea to have AEDs in place." But she said the greatest barrier is funding.

Defibrillators cost about \$3,500 each and, with all sorts of public institutions clamouring for them, the priority is on placing them in high-traffic areas such as hockey arenas, football stadiums and community centres. Schools don't always have the money to follow suit.

"We think that defibrillators should be in schools, but we don't want them cutting books and breakfast programs to pay for them," Ms. Clarke said.

Lesson learned

Glenn Arthur, the recreation director at Nick Smith Centre in Arnprior, Ont., has been actively urging recreational hockey players to learn how to use the arena's defibrillator.

"After the old-timers' games, I take the guys and give them a quick course. I tell them: 'You never know when this could save somebody's life.' "

Little did Mr. Arthur know how those words would come true.

On Saturday night, he was playing goalie in a hockey tournament in North Bay, Ont., when he skated to the bench for a rest.

No sooner had Mr. Arthur sat down than his heart stopped suddenly and he keeled over.

"I don't remember a thing," he said. "I was dead."

But, as luck would have it, in the sparse crowd watching the game was an off-duty paramedic.

Within seconds, Brent Foisy ripped off Mr. Arthur's hockey equipment and began performing CPR while someone ran for the public access defibrillator that had been recently installed at the arena.

Mr. Arthur was zapped and his heart restarted.

"When I came to, I had all my faculties. I actually felt fine," he said.

Bystanders estimate that, from beginning to end, the "save" took less than two minutes.

When the heart stops, speed is essential because heart muscle and brain can die from lack of oxygen.

Mr. Arthur said the experience has reinforced his belief that defibrillators should be in all public places and that everyone should take the time to learn the basics of how to use the machines.

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