

Defibrillators in public places a real life saver

By HELEN BRANSWELL -- The Canadian Press

TORONTO -- Equipping offices, airplanes, shopping malls and other public places with defibrillators can be a significant life saver, two studies in the New England Journal of Medicine have found.

One study, done in U.S. casinos, found that in those equipped with defibrillators and a staff trained to use them, 53 per cent of people whose hearts had stopped survived.

A study of cardiac arrests on American Airlines flights found that 40 per cent of people whose hearts stopped while flying on planes equipped with defibrillators -- machines with paddles that apply an electric shock to kick start the heart -- survived.

Both numbers are a dramatic improvement on the normal survival rate. Currently less than five per cent of people who have cardiac arrest outside a hospital live.

"Ten times the benefit is pretty promising," said Dr. Graham Nichol of Ottawa, a co-author of the casinos study.

"This study in my mind shows that it's safe. That we're not going to kill security guards" -- or anyone who uses them -- "if we get people to do it. And it's efficacious."

An accompanying editorial in the journal noted automatic external defibrillators are so simple to use that untrained Grade 6 students who simply followed the machine's voice prompts were able to use the devices accurately in a test. Furthermore, it only took them 27 seconds longer than trained emergency staff or paramedics.

"Defibrillation is, to be quite honest, pretty easy," Nichol said. "It's not rocket science."

Organizations like the Heart and Stroke Foundation of Canada and the American Heart Association have been pushing for installation of defibrillators in public places on the assumption they save lives. Some have answered the call. For instance, many airlines, including Air Canada and Canada 3000, are putting defibrillators on most of their planes.

But others have dragged their heels, balking at the cost (\$3,000 to \$4,000 each) and the fact that there have been no studies proving

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they save lives.

Now there are.

Nearly 40,000 Canadians die each year from sudden cardiac arrest. The most common cause is ventricular fibrillation, a chaotic contraction of the ventricle that fails to effectively eject blood from the ventricle.

Defibrillation can reset the rhythm, but the window of treatment is small. The sooner the shock is applied, the higher the chances of survival. Paramedics, who are equipped and trained to do this work, can arrive too late to save someone in cardiac arrest, which explains the push to have on-site defibrillators and to train non-medical personnel in their use.

"People use different numbers," Nichol said of how quickly defibrillation must be used.

"I don't think there's any absolute cutoff. But sooner is better and after 10 minutes, then chances of you going out of hospital are approaching zero."

Unlike the "crash carts" used on TV hospital dramas like ER, automatic external defibrillators are small -- roughly the size and weight of a laptop computer. The machines are extremely user friendly, essentially talking users through their application.

They do not allow a person to administer a shock to someone who is not in cardiac arrest.

The casino study, headed by Dr. Terence Valenzuela of the University of Arizona, chose those locales because they are attract a lot of older people who can get very excited -- either by winning or losing -- and go into cardiac arrest.

The high level of security in casinos made them ideal test sites, as someone was almost sure to notice instantly if a gambler collapsed.

During the two years of the trial, 105 people in the selected casinos had cardiac arrests. Of those who received defibrillation in less than three minutes, 74 per cent survived. After three minutes, the rate dipped to 49 per cent. The overall rate was 53 per cent.

The Valenzuela team is now conducting a further two year trial, to see if defibrillation administered by untrained people is more effective in saving lives than simply administering cardiopulmonary resuscitation while waiting for a 911 call to be answered.

Nichol says everyone involved in the study believes the results will be positive, but recognize people controlling purse strings -- be they public or those of private industry -- need proof before allocating resources to defibrillators.