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Clinical

Paramedics needn't stand to do CPR in a moving ambulance

Last Updated: 2012-01-17 17:08:04 -0400 (Reuters Health)

By Rob Goodier

NEW YORK (Reuters Health) - Rescuers performing chest compressions in a moving ambulance should sit down instead of standing, experts now advise.

A recent trial showed that paramedics can do chest compressions comparably well in both positions, but they themselves are safer when they are seated with seat belts.

Researchers had 14 emergency medical technicians and paramedics perform cardiopulmonary resuscitation (CPR) on a manikin in a moving ambulance, 150 chest compressions in both seated and standing positions.

While seated, the average compression depth was 1.97 inches at an average rate of 120 per minute, with 92% full chest recoil. While standing, the average compression depth was 2.18 inches at a rate of 123 per minute with 82% full recoil.

The differences in depth and recoil were not statistically significant, and the quality of the compressions was nearly equal, according to a presentation January 13 at the annual meeting of the National Association of EMS Physicians in Tucson, Arizona.

Chad Panke, a paramedic who led the study at American Medical Response in Los Angeles, told Reuters Health by email that participants "overwhelmingly preferred standing before the study," but after participating in the study (and before the results were known) they reported feeling safer and more controlled sitting down.

"The participants reported during turns they felt the standing position caused them to compress too deep and they felt more controlled seated," Panke said.

Dr. Jon Studnek, Director of Prehospital Research at Carolinas Medical Center in Charlotte, North Carolina, who was not involved in this study, told Reuters Health in an email, "Inherently in EMS there are tasks that are performed, such as CPR in the back of a moving ambulance, that place providers at greater risk of injury. This risk must be balanced with providing appropriate care to patients."

The results may have been limited by the small sample size and the short duration of the ambulance ride, the researchers write. More volunteers giving CPR over a longer time might have provided insight into how physical conditioning, height and weight can affect the compressions.

Limitations notwithstanding, the results show how to strike the balance between risk to rescuers and quality care for patients, said Dr. Studnek, who also chairs the NAEMSP research committee.

"This abstract demonstrates how research in EMS can be utilized to both improve provider safety and maintain good patient care," he said.

Based on the results, American Medical Response is considering making changes to their ambulances to accommodate seated CPR. They may add an elevated seat that slides forward and has a harness-style seat belt, Panke says.

"This will allow the rescuer to remain seated and restrained in a manner that delivers quality chest compressions," Panke says.

For now, he and his colleagues conclude, "When it is necessary to provide CPR in a moving vehicle, the ability to secure the rescuer in the sitting position makes it the preferred position."

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