

CPR from bystanders associated with better outcomes after out-of-hospital cardiac arrest in pediatrics

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Receiving cardiopulmonary resuscitation (CPR) from a bystander - compared with not - was associated with better overall and neurologically favorable survival for children and adolescents who had out-of-hospital cardiac arrest, according to an article published online by *JAMA Pediatrics*. The study is being presented at the American Heart Association's Scientific Sessions 2016.

Every year in the United States, more than 5,000 children experience out-of-hospital cardiac arrest (OHCA) and the outcome is generally poor, with a mortality rate greater than 90 percent. The American Heart Association (AHA) recommends conventional CPR for pediatric [cardiac arrest](#). However if the [bystander](#) is unable or reluctant to perform rescue breathing, the AHA recommends compression-only CPR (COR), noting that delivering COR is better than no CPR.

Maryam Y. Naim, M.D., of Children's Hospital of Philadelphia, and coauthors analyzed data from the Cardiac Arrest Registry to Enhance Survival for OHCA in children younger than 18 from January 2013 through December 2015.

The study included 3,900 children with OHCA, of whom 2,317 (59.4 percent) were infants, 2,346 (60.2 percent) were female and 3,595 (92.2 percent) had nonshockable heart rhythms. Cardiac arrests that occur in infants are most likely secondary to sudden infant death syndrome,

according to the report.

The authors report:

- CPR from bystanders was performed on 1,814 children (46.5 percent).
- Overall survival was 11.3 percent and neurologically favorable survival was 9.1 percent.
- CPR from a bystander was more common for white children compared with black and Hispanic children.
- CPR from a bystander was associated with better odds of overall survival and neurologically favorable survival compared with none.
- Conventional CPR and compression-only CPR were provided in a similar number of cases; conventional CPR was associated with improved outcomes compared with compression-only CPR; among infants, conventional CPR from a bystander was associated with improved outcomes while compression-only CPR had outcomes similar to no CPR from a bystander.

Limitations to the study are that the data are observational and causality cannot be established.

"Bystander CPR is associated with improved outcomes in children with OHCA. Conventional BCPR [bystander CPR] is associated with improved outcomes compared with COR [compression-only CPR] and, among infants, there was no benefit of BCPR unless ventilations were provided. Efforts to improve the provision of CPR in minority communities and increasing the use of conventional BCPR may improve outcomes for [children](#) with OHCA," the study concludes.

More information: Maryam Y. Naim et al. Association of Bystander Cardiopulmonary Resuscitation With Overall and Neurologically

Favorable Survival After Pediatric Out-of-Hospital Cardiac Arrest in the United States, *JAMA Pediatrics* (2016). [DOI: 10.1001/jamapediatrics.2016.3643](https://doi.org/10.1001/jamapediatrics.2016.3643)

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