

# CPR education in public housing communities may improve cardiac arrest survival

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Of all out-of-hospital cardiac arrests in residential areas of Vienna and Copenhagen from 2016-2021, one-third of those cardiac arrests occurred in public housing communities. That occurrence jumped to more than 60% when including areas surrounding public housing communication, suggesting cardiopulmonary resuscitation (CPR) education programs tailored to these communities may be an efficient strategy to train more people to save lives, according to preliminary research to be presented at the American Heart Association's [Resuscitation Science Symposium 2022](#). The 2022 meeting will be held in person in Chicago, November 5-6, 2022, and will feature the most recent advances related to treating cardiopulmonary arrest and life-threatening traumatic injury.

"Our findings provide great potential to improve [bystander CPR](#) and survival on a large scale. Public housing communities are geographically well-defined areas with an organizational unit that allows feasible access for targeting initiatives to train the population and deploy automated external defibrillators (AEDs)," said the study's lead author Anne Juul Grabmayr, M.D., a Ph.D. student and a clinical research assistant in Emergency Medical Services Copenhagen at the University of Copenhagen in Denmark. "By focusing initiatives for people living in [public housing](#) communities, half of all cardiac arrests may be reached with improved AED deployment and CPR training of residents."

An AED is a lightweight, portable device that can detect an abnormal cardiac rhythm requiring treatment with a shock and delivers a shock to convert the heart rhythm back to normal.

The study compared out-of-hospital cardiac arrests in public housing communities in Vienna, Austria, from 2017 to 2021, and Copenhagen, Denmark, from 2016 to 2020 to other residential areas in each city. Researchers reviewed information from the cities' cardiac arrest registries, public housing data and an atlas for population density and

residential details, which aligns with the American Heart Association's support to improve the health of people living in public housing,

Of more than 4,300 residential out-of-hospital cardiac arrests in Vienna, 32% occurred among residents in a public housing community. Of more than 2,300 residential out-of-hospital cardiac arrests in Copenhagen, 35% occurred among people who lived in a public housing community. These findings represent a threefold increase per square kilometer and a one-and-a-half-fold increase per 100,000 people compared to the other residential areas. When including immediate surroundings of all residential areas, about 65% of all out-of-hospital cardiac arrests in Vienna occurred in public housing or within 104 yards of public housing and more than 56% occurred within the same radius in Copenhagen.

"What is unique about this study is that it answers how to find residential, high-risk areas, and importantly, it also offers a point of intervention," Grabmayr said. "Public housing communities have employees, organizations, a dedicated budget and [communication channels](#) that may be able to assist in disseminating CPR information, recruiting people to receive CPR training and providing and maintaining AEDs."

Strategies for public housing also may help to counteract social inequity, she noted, as people who live in public housing may have high rates of other illnesses. The communities may be able to serve as a base for [health programs](#) to reach at-risk populations and increase access to [health care services](#). For example, public housing communities and other types of low-income housing may be feasible targets for interventions to improve hypertension or Type 2 diabetes management. These types of strategies align with the American Heart Association's support to improve the health of people living in public housing communities.

Previous research has found that, compared to people who had cardiac

arrest in the remaining residential areas, those who suffered a cardiac arrest in a public housing neighborhood were younger and less likely to survive. Researchers said this gap in age and survival was surprising, as well as the large proportion of cardiac arrests that happened in public housing communities.

The study's findings may be applicable to public housing communities in other countries, including the United States.

"We believe a substantial proportion of cardiac arrests occur in public housing neighborhoods across communities globally, although the proportion may not be exactly the same," Grabmayr said. "We believe a larger proportion of residents live in public housing in communities with lower socioeconomic status. Since we suspect these findings to be a marker of low socioeconomic status among the residents, our study results may very well be transferable to the U.S. It is also known that Denmark and Austria have quite low levels of inequity in health, which gives us reason to believe that cardiac arrest incidence in public housing and other forms of low-income housing may be even greater in other countries such as the U.S. where health care is not free or available for all."

Differences in how each country defines public housing and the proportions of overall [housing](#) may also limit how applicable the study's results may be in other communities, she said.

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**More information:** Abstract: [www.abstractsonline.com/pp8/#!/...0691/presentation/21](http://www.abstractsonline.com/pp8/#!/...0691/presentation/21)

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