

Executive Summary: PRESS ON Hands-only CPR: A Community Education Project

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Executive summary

Main Points

- PRESS ON is a community-based HO-CPR education project developed with county emergency management and public safety personnel to increase the number and diversity of residents trained in HO-CPR, use of an automatic external defibrillator (AED), and provide education that dispels barriers to performing CPR.
- Twenty-six events were held over 15 weeks during which 229 people were trained, and 191 participants participated in a pre- and post-course survey to evaluate course effectiveness on increasing skills and sense of self-efficacy, and attendee demographics.
- The demographic profile of attendees was reflective of the county's population profile regarding age, race, and previous CPR training and current certification.
- Pre-course and post-course confidence in performing chest compressions and using an AED were measured with a 5-point Likert scale. There was a 71% increase in CPR skills and a 70% increase in confidence with using an AED.
- Post-course, 60% of participants indicated that they wanted to continue their training and become certified in CPR.

Background and Purpose

Cardiac arrest that occurs outside of the hospital setting, or out-of-hospital cardiac arrest (OHCA), is a serious health problem in the United States, affecting more than 350,000 people annually (Blewer et al., 2024). Unfortunately, only about 10% of those who have an OHCA will survive to hospital discharge (Cardiac Arrest Registry to Enhance Survival, (CARES), 2023).

People living in Black, Hispanic, rural, and low-income neighborhoods have disproportionately poorer outcomes and lower rates of CPR pre-hospital. In response to the poor survival rates of OHCA, Healthy People 2030 (Office of Disease Prevention and Promotion, n.d.) set a goal that 45.1% of all OHCA victims receive bystander cardiopulmonary resuscitation (CPR).

Bystander CPR and use of an automatic external defibrillator (AED) double the chances of surviving OHCA with good neurological outcomes (Cheng et al., 2020; Dainty et al.). Currently, only 40% of adult victims of OHCA receive cardiopulmonary resuscitation (CPR), and 29% had an AED applied before paramedics arrived (RACE CARS Trial, n.d.). While 65% of people in the United States have received some form of CPR training, only 18% are up to date on their CPR certification (Corliss, 2022). To improve outcomes for OHCA, we must train more people in CPR and AED skills. The American Heart Association (2022) recommends hands-only CPR (HO-CPR) training for laypersons and has demonstrated higher retention rates of skills and knowledge. HO-CPR is also associated with increased self-efficacy compared to traditional CPR for laypersons (Panchal et al., 2020)

A Doctor of Nursing Practice project was developed in partnership with a rural county deputy emergency manager and a paramedic from the public safety office to educate the community on HO-CPR, AED use, and dispel barriers to providing CPR. It was proposed that PRESS ON will increase self-efficacy for participants and increase survival rates of OHCA with good neurological outcomes. The project partner county has set a goal, as part of the RACECARS trial, to increase the number of residents trained in CPR by 10% by 2027. The RACECARS trial is being conducted by Duke University to decrease regional variations in providing CPR and increase survival rates with good neurological outcomes (RACECARS Trial, N.d.). These interventions are also an effort to achieve the goals set by Healthy People 2030 (Office of

Disease Prevention and Promotion, n.d.), specifically the goal that 45.1% of all OHCA victims receive bystander CPR.

Methodology

Using the RE-AIM framework and Bandura's behavioral theory of self-efficacy (Bandura, 1977), along with training recommendations from the RACE CARS trial, a customized community education program was developed. Community faith-based partners and local businesses were made aware of the free training and encouraged to host PRESS ON classes at their location. Care was taken to include people from all demographics in this community to address the lower intervention and survival rates in rural and minority communities. PRESS ON classes were offered from January 2025 to April 2025 as the initial offering, with a plan to evaluate the project and then customize it further for a sustainable training program under the RE-AIM framework.

A pre-course and post-course survey was developed to measure participants' sense of self-efficacy, along with data on age, race, gender, previous CPR training, and perceived barriers to chest compressions, as well as interest in continued learning. A 5-point Likert scale was used to rate pre- and post-course confidence in CPR and AED use. Data was also collected on how participants learned about the course and whether they would like additional training or to become a trainer for HO-CPR. The results of the surveys were logged into an Excel Worksheet for analysis.

No personally identifiable information was obtained. This project was deemed non-human subject-related and therefore did not require IRB approval, as per the University Medical Center's IRB policy.

Results

There were 26 PRESS ON classes and pop-up events conducted, reaching a total of 229 people. The pre- and post-surveys were completed by 191 participants. The youngest participant was 9 years old, and the oldest was 86, with a median age of 50. There were 131 female and 60 male participants. Most attendees were Caucasian (147), followed by 28 Black, 11 Hispanic, and five identifying as other. Pre-course average confidence performing CPR was 2.99 and improved to 4.34 after training (a 71% increase). Similarly, AED confidence went from 2.55 pre-course to 4.34 post-course (70% increase). The classes generated interest in learning more, with 60% of respondents indicating that they would like to take a full CPR course, and 97% indicating that they were willing to share what they learned with others.

Strengths and Limitations

Identified strengths of PRESS ON were the small class sizes, which allowed for increased dialogue about barriers to CPR, time for questions, and individualized HO-CPR coaching and remediation. Mailing the flyers before the implementation period and following up with personal phone calls to community partners was effective in promoting the course, along with sharing it on social media. Word of mouth about PRESS ON and participants' experience with the course was also a facilitator.

Limitations identified included the changes in immigration enforcement and increased risk of deportation make contact and assembly of the Hispanic community difficult which supports the hypothesis of Garcia et al. (2022) and Yu et al. (2023) that the immigration status of a demographic group and mistrust of institutions may be contributing factors to the lower bystander CPR rates in Hispanic and other groups. There were also several churches that felt it

was enough that some of their members were first responders and nurses, so they did not need the congregation trained in HO-CPR which was unfortunate. Limits placed on advertising by county policy also limited the reach of PRESS ON.

Implications and Conclusion

Bringing community residents together in small-group learning and dialogue about barriers to performing CPR fosters a shared experience that benefits the community and its members, wherever they may reside. Increasing the number of people trained in HO-CPR and AED use will improve survival rates with good neurological outcomes for victims of OHCA. Improved neurological outcomes for victims of OHCA should decrease the cost of care burden on our healthcare system. For communities, the classes increase self-efficacy and empower citizens through preparedness, thereby enhancing resilience. PRESS ON can be easily replicated in other communities and help bridge healthcare disparities.

As the number of people we reach with our PRESS ON program increases, so will word-of-mouth advertising, which is our most effective marketing method. We have already seen an increase in interest from surrounding counties based on word of mouth. We will be able to help other communities set up PRESS ON training. Together, we can reach—and hopefully exceed—the Healthy People 2030 goal that 45.1% (Office of Disease Prevention and Promotion, n.d.) of all OHCA victims receive bystander CPR.

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