



## Top Ten Things to Know Out-of-Hospital Cardiac Arrest Resuscitation Systems of Care

1. Approximately 356,500 people are treated for out-of-hospital cardiac arrest (OHCA) annually in the United States. OHCA remains a major public health challenge in the U.S.
2. Most communities do not achieve optimal survival after OHCA due to large discrepancies in resuscitation-related processes of care.
3. This update describes recent advances in the science of cardiac resuscitation systems and evidence of their effectiveness, as well as recent progress in dissemination and implementation throughout the United States.
4. Improved survival has resulted from increasing training of laypersons on performing bystander CPR, providing dispatcher/telecommunicator instructions in CPR, and improving lay and first responder use of AEDs.
5. Broad community-based campaigns have increased use of CPR as well as survival after OHCA. Up to 70% of patients with OHCA have coronary artery disease. While 50% have acute coronary occlusion, only a minority of OHCA patients with ROSC and transported to hospital have S-T elevation on 12-lead ECG.
6. Mortality after emergent angiography for STEMI patients in the setting of post-ROSC OHCA is greater than that in the setting of STEMI alone. A barrier to use of emergent angiography in post-ROSC OHCA patients is that multiple registries track mortality of STEMI patients and do not adequately differentiate those who also have OHCA from those who do not.
7. A state-wide implementation of a cardiac receiving center system resulted in a dramatic survival increase from 21.4% to 39.2% for OHCA.
8. There is a need for ongoing assessment of the relationship between the volume of patients with cardiac arrest received at hospital and their outcomes.
9. Over the past decade significant scientific advancements in 9-1-1 telephone CPR instructions, bystander CPR, optimal CPR technique, public AED availability, and post-resuscitation care have been shown to improve outcomes in OHCA patients. Despite these advancements, widespread implementation lags reveal large regional variation in outcome with opportunities for improvement.
10. Early examples of cardiac arrest centers and regionalization have revealed promising results, but much work remains to be done to further understand regional differences and optimize care for the OHCA patient.

McCarthy JJ, Carr B, Sasson C, Bobrow BJ, Callaway CW, Neumar RW, Ferrer JME, Garvey JL, Ornato JP, Gonzales L, Granger CB, Kleinman ME, Bjerke C, Nichol G; on behalf of the American Heart Association Emergency Cardiovascular Care Committee; Council on Cardiopulmonary, Critical Care, Perioperative and Resuscitation; and the Mission: Lifeline Resuscitation Subcommittee. [Out-of-hospital cardiac arrest resuscitation systems of care: a scientific statement from the American Heart Association](#) [published online ahead of print February 26, 2018]. *Circulation*. doi: 10.1161/CIR.0000000000000557.

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