



Strategies to Improve Cardiac Arrest Survival: A Time to Act

Committee on the Treatment of Cardiac
Arrest: Current Status and Future Directions

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Sponsors

- American Heart Association
- American Red Cross
- American College of Cardiology
- Centers for Disease Control and Prevention
- National Institutes of Health
- The U.S. Department of Veterans Affairs



Statement of Task

Evaluate the current status of, and future opportunities to improve, cardiac arrest outcomes in the U.S. Examine current statistics and variability in cardiac arrest survival rates in the U.S. and assess scientific evidence on existing lifesaving therapies and public health strategies to improve survival rates. Specifically, it focused on:

- CPR and the use of AEDS
- EMS and hospital resuscitation systems of care
- National cardiac arrest statistics
- Resuscitation research
- Next steps to significantly enhance survival



Presentation Overview – Major Themes

1. Cardiac arrest can strike anyone and affects hundreds of thousands of people each year
2. Cardiac arrest is an event that requires a system of response
3. Speed and quality of care matter
4. New knowledge and evidence are needed
5. Leadership and accountability are key to improve system response and outcomes from cardiac arrest



Cardiac Arrest Can Strike Anyone and Affects Many People Each Year

- Cardiac arrest can strike seemingly healthy individuals of all ages, races, and genders, often without warning
- Survival rates are low for the almost 600,000 people who experience a cardiac arrest each year, and poor neurologic and functional outcomes can follow
- Wide disparities exist, which may be a result of patient demographics, geographic characteristics, and system-level characteristics
- Benchmark communities demonstrate that the ability to save more lives is possible



Problems with Data to Characterize the Impact of Cardiac Arrest

- We do not currently know exactly how many people die from cardiac arrest each year
- It is essential to be able to measure the problem and the impact of treatments and interventions in order to establish evidence-based practices that save lives
- Unfortunately, currently available databases are not adequate – no national cardiac arrest registry exists
- To facilitate informed discussions with the public and policymakers, better data at a national level is needed



Recommendation 1. Establish a National Cardiac Arrest Registry

The Centers for Disease Control and Prevention—in collaboration with state and local health departments—should expand and coordinate cardiac arrest data collection through a publicly reported and available national cardiac arrest registry, including both OHCA and IHCA data, to help increase federal and state accountability for current system performance and promote actions to improve cardiac arrest outcomes.



Recommendation 1. Establish a National Cardiac Arrest Registry

Specifically, CDC should

- Establish a surveillance system ... that includes IHCA and OHCA data in pediatric and adult populations;
- Make data publicly available through appropriate mechanisms to enable comparisons across datasets ...;
- Identify and adopt standardized definitions, criteria, and metrics (such as age, gender, race and ethnicity, socioeconomic status, and primary language) for cardiac arrest identification, treatment, and outcome assessment; and
- Promote and coordinate the development and implementation of unique diagnostic codes for OHCA and IHCA in ICD coding models through its North American Collaborating Center, working with CMS and WHO.



Recommendation 1. Establish a National Cardiac Arrest Registry

Specifically, state, territorial, and local health departments should

- Mandate tracking and reporting of all cardiac arrest events; and
- Publicly report the incidence and outcomes of IHCA and OHCA within and across various areas within states and territories, taking appropriate steps to protect patient privacy and confidentiality.



Cardiac Arrest Requires a System of Response

- Cardiac arrest is not a heart attack
- Cardiac arrest is an event, the majority of which occur in community settings
- A wide range of people (bystanders, family members, first responders, emergency medical personnel, and providers within a health care system) should be prepared to act

The Cardiac Arrest Chain of Survival



Resuscitation Academy, 2014

Immediate Provision of Care in Community Settings

- Time to first compressions and defibrillation are crucial and the best way to improve outcomes
- Any CPR or defibrillation delivered by the public is better than no care
- Bystanders and family members are needed to activate emergency medical services and provide care



Recommendation 2. Foster a Culture of Action Through Public Awareness and Training

State and local departments of health and education, and leading organizations in cardiac arrest response and treatment should partner with training organizations, professional organizations, public advocacy groups, community and neighborhood organizations and service providers, and local employers to promote public awareness of the signs, symptoms, and treatment of cardiac arrest. These efforts require public CPR and AED training across the lifespan [*in schools, workplaces, and community settings*], creating a culture of action that prepares and motivates bystanders to respond immediately upon witnessing a cardiac arrest.

Recommendation 2. Foster a Culture of Action Through Public Awareness and Training

Specifically,

- State and local education departments should partner with training organizations and public advocacy groups to promote and facilitate CPR and AED training as a graduation requirement for middle and high school students;
- Employers (e.g., federal agencies, private business owners, and schools) should be encouraged to maintain easy-to-locate and clearly marked AEDs, provide CPR and AED training to their employees, and specifically include cardiac arrest in formal emergency response plans; and
- Local health departments should engage with community and neighborhood organizations and service providers to expand the types and locations of available CPR and AED training to populations over age 65 and caregivers for this population.

High quality care from emergency and hospital professionals can save lives

- High-performing communities provide examples of how functional public health infrastructures and well-organized health system responses can facilitate timely and effective treatment
- Mechanisms to encourage performance measurement are a fundamental and necessary first step
- Continuous quality improvement programs can encourage data collection across all sites of care, enable comparisons within and between EMS and health care systems, and lead to new treatments and best practices that improve population health and patient outcomes



Recommendation 3. Enhance the Capabilities and Performance of EMS Systems

NHTSA should coordinate with other federal agencies and representatives from private industry, states, professional organizations, first responders, EMS systems, and non-profit organizations to convene interested stakeholders

- to develop standardized dispatcher-assisted CPR protocols and national educational standards for use by all public safety answering points
- to establish a standardized definition and training curriculum for high-performance CPR to be used in basic emergency medical technician training and certification

Recommendation 4. Set National Accreditation Standards Related to Cardiac Arrest for Hospitals and Health Care Systems

The Joint Commission—in collaboration with the American Red Cross, the American Heart Association, hospital systems, hospitals, professional organizations, and patient advocacy groups—should develop and implement an accreditation standard for health care facilities specific to cardiac arrest care for adult and pediatric populations.



Recommendation 5. Adopt Continuous Quality Improvement Programs

EMS systems, health care systems, and hospitals should adopt formal, continuous quality improvement programs for cardiac arrest response that

- Assign responsibility, authority, and accountability within each organization or agency for specific cardiac arrest measures;
- Implement core technical and non-technical training, simulation, and debriefing protocols to ensure that EMS and hospital personnel can respond competently to both adult and pediatric cardiac arrests; and
- Actively collaborate and share data to facilitate national, state, and local benchmarking for quality improvement.

A Need for New Knowledge and Evidence

- To minimize death and disability from cardiac arrest, more is needed than better implementation of known treatments, therapies, and protocols
- Approximately 70 percent of first documented cardiac arrest rhythms for OHCA do not typically respond to defibrillation
- It is important to support and translate basic and clinical research discoveries that can provide new insights and etiology, pathophysiology, causation, and evidence-based practice



Recommendation 6. Accelerate Research on Pathophysiology, New Therapies, and Translation of Science for Cardiac Arrest

In order to identify new, effective treatments for cardiac arrest, the National Institutes of Health (NIH), the American Heart Association, and the U.S. Department of Veterans Affairs should lead a collaborative effort with other federal agencies and private industry to build the nation's research infrastructure that will support and accelerate innovative research on the causal mechanisms of onset, pathophysiology, treatment, and outcomes of cardiac arrest.

Recommendation 7. Accelerate Research on the Evaluation and Adoption of Cardiac Arrest Therapies

The National Institutes of Health should lead a collaborative effort with the U.S. Department of Veterans Affairs, the Agency for Healthcare Research and Quality, and the Patient-Centered Outcomes Research Institute to prioritize health services research related to the identification, evaluation, and adoption of best practices; the use of innovative technologies (e.g., mobile and social media strategies to increase bystander cardiopulmonary resuscitation or automated-external-defibrillator use); and the development of new implementation strategies for cardiac arrest treatments.



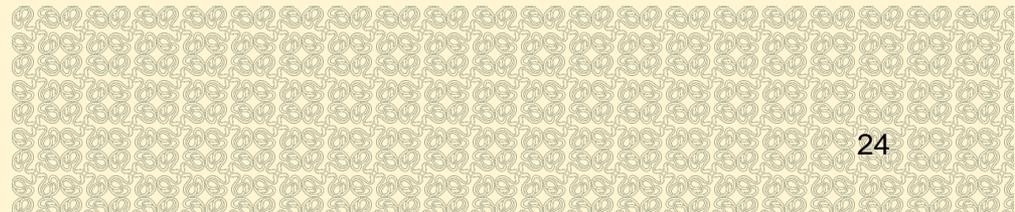
The Need for Renewed Leadership, Accountability, and Stakeholder Advocacy

- Sustained federal, state, and local leadership are necessary to improve outcomes from cardiac arrest across the United States
- The public should expect accountability from their leaders through public reporting of data related to cardiac arrest in their communities
- To generate appropriate leadership and levels of accountability, the resuscitation field needs to coordinate its advocacy efforts



Recommendation 8. Create a National Cardiac Arrest Collaborative

The American Heart Association and the American Red Cross—with the U.S. Department of Health and Human Services and other federal agencies, national and international resuscitation councils, professional organizations, private industry, and patient advocates—should establish a National Cardiac Arrest Collaborative to unify the cardiac arrest field, identify common goals, and build momentum within the field to ultimately improve survival from cardiac arrest with good neurologic and functional outcomes.

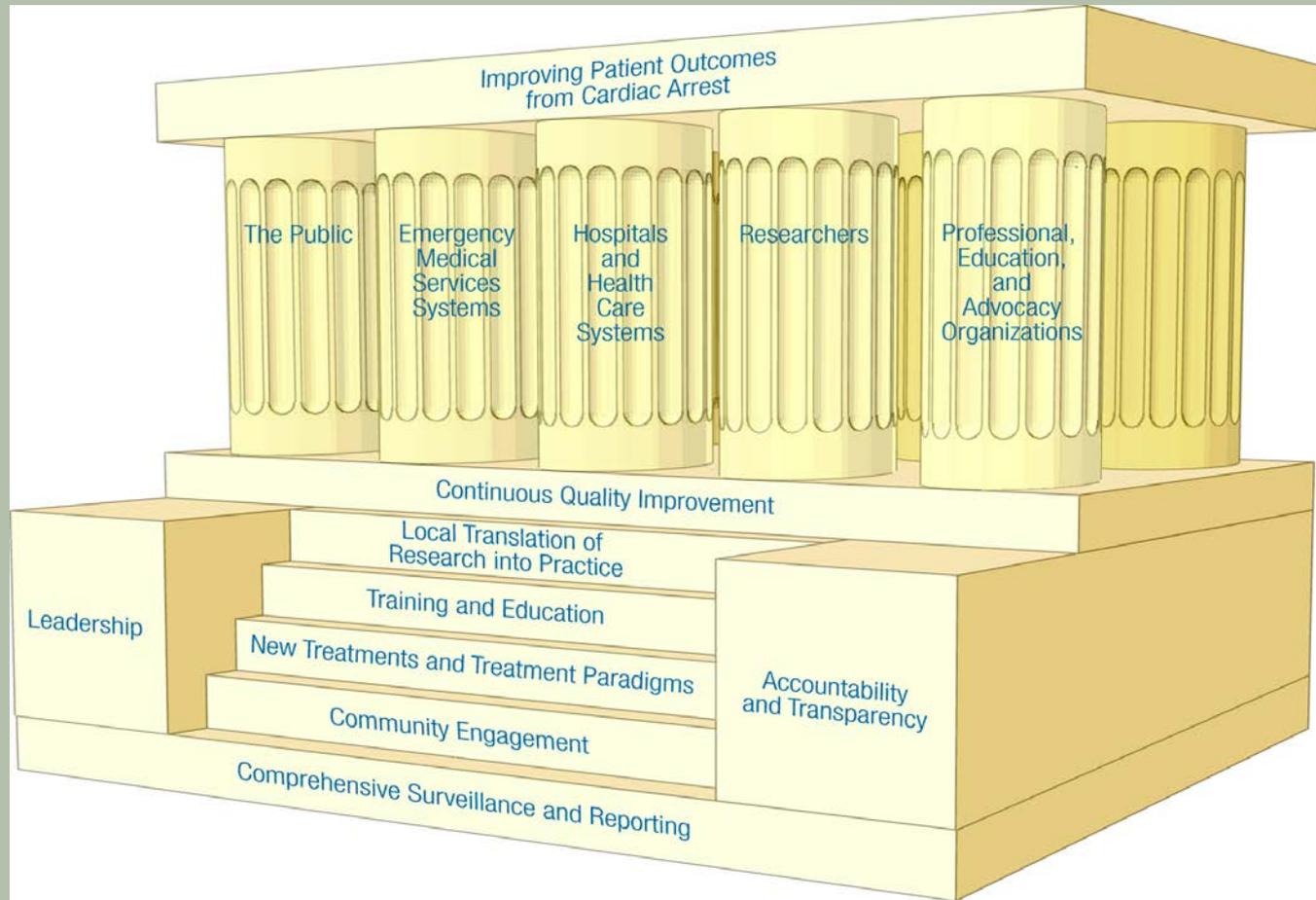


Recommendation 8. Create a National Cardiac Arrest Collaborative

The Collaborative should

- Provide a platform for information exchange ...
- Convene working groups on short- and long-term national research priorities for cardiac resuscitation and post-arrest care ...
- Develop action strategies related to health policy, research funding and translation, continuous quality improvement, and public awareness and training
- Produce and update toolkits for different stakeholders ...
- Hold an annual collaborative meeting ... to discuss short- and long-term goals and progress
- Encourage public–private partnerships to support activities that focus on reducing the time to defibrillation for cardiac arrest ...

A Systems-level Framework to Identify Relationships and Coordinate Action



THANK YOU

- **Pre-pub released:
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- **Final report due for release by
early fall 2015.**
- **Free PDFs of the report will be
available: www.nap.edu**

