

*The National Academies of*  
SCIENCES • ENGINEERING • MEDICINE

AGENDA

**A Workshop on the Institute of Medicine\* Report,  
*Strategies to Improve Cardiac Arrest Survival: A Time to Act***

July 11-12, 2016

National Academies of Sciences Building  
2101 Constitution Ave., NW, Auditorium  
Washington, DC 20001

**MONDAY, JULY 11, 2016**

- 8:30 – 9:00 a.m.      **Registration**
- 9:00 – 9:10 a.m.      **Welcome & Introductory Remarks**  
*Tom Aufderbeide, Planning Committee Chair*
- 9:10 – 9:20 a.m.      **Surviving Cardiac Arrest: The Driving Force Behind Needed Change**  
*James Niskanen, Sudden Cardiac Arrest Survivor*

**SESSION I: SURVEILLANCE & RESEARCH**

- 9:20 – 10:30 a.m.      **Panel Discussion: Envisioning National Surveillance for Cardiac Arrest  
(Recommendation #1)\*\***  
Moderator: *Lance Becker, Planning Committee Member*
- Implementing Cardiac Arrest Surveillance: Update on Federal Efforts
    - *Robert K. Merritt, Centers for Disease Control and Prevention*
    - *Noah Smith, National Highway Traffic Safety Administration*
  - Results of the NHLBI Sudden Cardiac Death Working Group
    - *Christine Albert, Brigham and Women's Hospital*

\* Please note that as of March 15, 2016, the Institute of Medicine program division conducts its convening activities and consensus studies under the new name Health and Medicine Division of the National Academies of Sciences, Engineering, and Medicine. Learn more at [nationalacademies.org/HMD](http://nationalacademies.org/HMD).

\*\* A full list of report recommendations are provided at the end of this agenda

- The Paul Coverdell National Acute Stroke Registry
  - *Michael Frankel, Emory University*
- Cognitive Computing as a Cardiac Arrest Surveillance Strategy
  - *Laura Langmade, IBM Watson Health*

10:30 – 11:40 a.m.

**Panel Discussion: Challenges and Opportunities in Research and Translation (Recommendations #6 and #7)**

Moderator: *Jeremy Brown, Planning Committee Member*

- Turning Discovery Science into Public Health Impact: Seizing New Opportunities in Cardiac Arrest Research
  - *Gary Gibbons, National Heart, Lung and Blood Institute*
- Creating a Research Network to Build Solutions
  - *Natasha Bonhomme, Genetic Alliance*
- Public-Private Partnerships as Driving Forces for Innovative Treatments and Research Policies
  - *Nigel Hughes, Janssen Research and Development*
- Environments and Conditions that Facilitate Cardiac Arrest Research through Better Coordination, Oversight, and Strategy
  - *Demetris Yannopoulos, University of Minnesota*

11:40 – 12:10 p.m.

**Move to Breakout Groups [pick up boxed lunches in Great Hall]**

12:10 – 1:25 p.m.

**Breakout 1A (Room NAS 120): Envisioning National Surveillance**

**Breakout 1B (Room NAS 118): Envisioning National Surveillance**

**Breakout 1C (Members' Room): Accelerating Research and Translation**

**Breakout 1D (Room NAS 280): Accelerating Research and Translation**

1:25 – 1:45 p.m.

**Return to Plenary**

1:45 – 2:20 p.m.

**PLENARY: Group Leader Presentations & Group Discussion**

Moderator: *Lance Becker, Planning Committee Member*

## SESSION II: PUBLIC AWARENESS AND TRAINING

- 2:20 – 3:20 p.m.      **Panel Discussion: Improving Public Awareness and Training (Recommendation #2)**  
Moderator: *Marina Del Rios, Planning Committee Member*
- Crystalizing Messaging to Promote Public Awareness
    - *Robert M. Davis, U.S. Department of Homeland Security*
  - Investing in Patient Advocacy and Community Educators to Change Policy
    - *Joanne Howes, National Breast Cancer Coalition*
  - Innovative Technologies as a Tool to Improve Public Awareness and Action
    - *Raina Merchant, University of Pennsylvania*
- 3:20 – 3:40 p.m.      **Move to Breakout Rooms**
- 3:40 – 4:55 p.m.      **Breakout 2A (Auditorium): Establishing a Public Awareness Campaign for Arrest**
- Breakout 2B (Room NAS 280): Fostering a Culture of Action in Communities through Policy**
- Breakout 2C (Room NAS 120): Innovative Technologies as a Public Health Tool**
- 4:55 – 5:10 p.m.      **Return to Plenary**
- 5:10 – 5:45 p.m.      **PLENARY: Group Leader Presentations & Group Discussion**  
Moderator: *Richard Bradley, Planning Committee Member*
- 5:45 p.m.              **Day 1 Closing Remarks and Adjournment**  
*Joseph Ornato, Virginia Commonwealth University*
- 5:45 – 6:45 p.m.      **RECEPTION (Great Hall)**

## TUESDAY, JULY 12, 2016

7:30 – 8:00 a.m.      **Registration**

8:00 – 8:05 a.m.      **Welcome**

*Tom Aufderheide, Planning Committee Chair*

8:05 – 8:15 a.m.      **Cardiac Arrest as a Policy Priority**

*Mike Weisfeldt, Johns Hopkins University*

### SESSION III: IMPROVING QUALITY OF CARDIAC ARREST RESPONSE

8:15 – 9:15 a.m.      **Breakout Panel Discussion: Enhancing Hospital Response to Cardiac Arrest (Recommendations #4 & #5)**

Moderator: *Dianne Atkins, Planning Committee Member*

- Current Efforts to Achieve Hospital Accreditation and Accountability in Cardiac Arrest
  - *Mimi Peberdy, Virginia Commonwealth University*
- Children and Cardiac Arrest: Implications of the IOM Report for Progress in Adults
  - *Vinay Nadkarni, Children's Hospital of Philadelphia*
- From Playbook to Policy: Antimicrobial Stewardship
  - *Edward Septimus, HCA Healthcare System*

9:15 – 10:15 a.m.      **Breakout Panel Discussion: Enhancing the Emergency Medical Services Response to Cardiac Arrest (Recommendations #3 & #5)**

Moderator: *Paul Pepe, Planning Committee Member*

- Dispatcher-Assisted CPR: Current Progress and Emerging Technologies
  - *Drew Dawson, National Highway Traffic Safety Administration (retired)*
- Achieving Standardization and Adoption of High-Quality CPR Performance Across the Country
  - *Art Kellermann, Uniformed Services University of the Health Sciences*
- Promoting Quality Improvement Processes in Emergency Medical Services Systems
  - *Peter Taillac, National Association of State EMS Officials*

10:15 – 10:45 a.m.      **Move to Breakout [pick up boxed lunches]**

10:45 – 12:00 p.m.      **Breakout 3A (NAS Board Room): Dispatcher-Assisted and High-Quality CPR**

**Breakout 3B (Room NAS 125): Continuous Quality Improvement in EMS Systems**

**Breakout 3C (Room NAS 250): Improving the Quality of Hospital Response to Cardiac Arrest**

12:00 – 12:20 p.m. **Return to Plenary**

12:20 – 1:00 p.m. **PLENARY: Group Leader Presentations & Group Discussion**  
Moderator: *Paul Pepe, Planning Committee Member*

#### SESSION IV: ESTABLISHING A COLLABORATIVE

1:00 – 1:05 p.m. **Survivor Perspective**  
*Kelly Sanyer, Sudden Cardiac Arrest Survivor*

1:05 – 1:45 p.m. **Interpreting Effective Collaboration for Cardiac Arrest**  
Moderator: *Tom Aufderheide, Planning Committee Member*

- From IOM Report to Formal Collaboration: Examples of Success
  - *Vicky Whittemore, National Institutes of Health*
- Collaboration and National Quality Improvement Efforts in Stroke
  - *Mark Alberts, University of Texas Southwestern Medical Center*

1:45 – 2:00 p.m. **Move to Breakout Rooms**

2:00 – 3:15 p.m. **Breakout 4A (Auditorium): The Collaborative**

**Breakout 4B (Room NAS 125): The Collaborative**

**Breakout 4C (Room NAS 250): The Collaborative**

3:15 – 3:30 p.m. **Return to Plenary**

3:30 – 4:15 p.m. **PLENARY: Group Leader Presentations & Group Discussion**  
Moderator: *Lance Becker, Planning Committee Member*

4:15 – 4:30 p.m. **Closing Remarks and Adjournment**  
*Tom Aufderheide, Planning Committee Chair*

## Recommendations from the IOM Report—

### *Strategies to Improve Cardiac Arrest Survival: A Time to Act*

#### **Recommendation 1. Establish a National Cardiac Arrest Registry**

The Centers for Disease Control and Prevention (CDC)—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 out-of-hospital cardiac arrest (OHCA) and in-hospital cardiac arrest (IHCA) data, to help increase federal and state accountability for current system performance and promote actions to improve cardiac arrest outcomes.

Specifically, CDC should

- establish a cardiac arrest surveillance system for the nation that includes IHCA and OHCA data in pediatric and adult populations;
- make data publicly available through appropriate mechanisms to enable comparisons across data sets in order to increase public awareness about cardiac arrest incidence and treatments, improve accountability for emergency medical services system and health care system performance, and target interventions that will reduce disparities and improve patient outcomes;
- 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 *International Classification of Diseases* (ICD) coding models through its North American Collaborating Center, working with the Centers for Medicare & Medicaid Services and the World Health Organization.

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.

### **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 cardiopulmonary resuscitation (CPR) and automated external defibrillators (AED) training across the lifespan, creating a culture of action that prepares and motivates bystanders to respond immediately upon witnessing a cardiac arrest. 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.

### **Recommendation 3. Enhance the Capabilities and Performance of Emergency Medical Services (EMS) Systems**

As the informal agency for EMS, the National Highway Traffic Safety Administration should coordinate with other federal agencies and representatives from private industry, states, professional organizations, first responders, EMS systems, and nonprofit organizations to promote uniformly high-quality emergency medical systems by

- convening interested stakeholders to develop standardized dispatcher-assisted cardiopulmonary resuscitation (CPR) protocols and national educational standards for use by all public safety answering points; and
- establishing 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**

**Emergency Medical Services (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 nontechnical 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.

**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. These actions should**

- strengthen laboratory, clinical, and translational resuscitation research support to levels commensurate with the public health burden of cardiac arrest for adult and pediatric populations across federal agencies, including NIH institutes; and
- establish a balanced and comprehensive portfolio of grants across the full spectrum of science translation to encourage the development and application of novel and efficient research strategies and innovative trial designs in preclinical, clinical (e.g., exploratory and hypothesis-generating studies), and population-based resuscitation research.

**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.**



### **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. The Collaborative should**

- provide a platform for information exchange about key successes and failures in different systems and settings and for stakeholder communication about new research findings and initiatives;
- convene working groups on short- and long-term national research priorities for cardiac resuscitation and post-arrest care, which focus on critical knowledge gaps (such as the impact of care transitions; the organization, composition, and training of resuscitation teams; optimal timing of initial neurological evaluation; and appropriate withdrawal-of-care protocols);
- 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 (e.g., emergency medical services [EMS] systems, hospitals, local health departments, and local health care providers) in order to facilitate effective system and individual responses to cardiac arrest;
- hold an annual collaborative meeting in conjunction with a regularly scheduled health professional conference to discuss short- and long-term goals and progress; and
- encourage public–private partnerships to support activities that focus on reducing the time to defibrillation for cardiac arrest, including the development of technologies to facilitate automated external defibrillator registries for use by the public, EMS systems, and other stakeholders.