

# HRS position statement: Changing the tide in CPR and AED education for students in the United States.

Heart Rhythm Society · 2026

## Study Guide: Enhancing Out-of-Hospital Cardiac Arrest Survival Through High School Education

This study guide provides a comprehensive overview of the current landscape, challenges, and proposed solutions regarding cardiopulmonary resuscitation (CPR) and automated external defibrillator (AED) training for high school students in the United States. It is designed to synthesize the scientific statement from the Heart Rhythm Society regarding the transformation of students into a generation of lifesavers.

### Part 1: Key Concepts and Analysis

#### The Current Crisis of Out-of-Hospital Cardiac Arrest (OHCA)

Out-of-hospital cardiac arrest remains a primary cause of mortality in the United States. Survival is heavily dependent on "the single most modifiable determinant": timely bystander action.

#### National Statistics and Gaps:

| Metric                          | Current Status |
|---------------------------------|----------------|
| Annual OHCA Occurrences         | >350,000       |
| Pediatric OHCA Cases            | 7,000+         |
| Survival Rate                   | ~10%           |
| Bystander CPR Rate              | 40%            |
| Bystander AED Use               | <25%           |
| CPR-Trained Individuals in U.S. | 2.4%           |

## Barriers to Effective Bystander Intervention

Despite evidence that early intervention saves lives, bystander response remains suboptimal due to several root causes:

- **Recognition Failures:** Inability to identify the signs and symptoms of Sudden Cardiac Arrest (SCA).
- **Skill Deficiencies:** A general lack of CPR training or exposure to didactic-only (non-hands-on) instruction.
- **Psychological/Legal Concerns:** Fear of causing harm to the victim or lack of understanding regarding Good Samaritan and liability laws.
- **Systemic Disparities:** Persistent racial, demographic, socioeconomic, literacy-related, and geographic inequities in both training access and AED availability.

## The Role of High Schools and Legislation

High schools are identified as the prime target for CPR/AED education because they house a massive proportion of the population daily, providing a scalable solution to create a national network of responders.

- **The HEARTS Act (December 2024):** A bipartisan federal law aimed at promoting CPR training, Cardiac Emergency Response Plan (CERP) development, and AED grants. Key deadlines include the development of materials by June 2026 and distribution by June 2027. However, as of the current report, no federal funds have been appropriated for these initiatives.
- **State Mandates:** While most states have legislated mandates for CPR/AED education (as seen in the "Required" status of most states on national maps), there is no uniform standard. Requirements, funding, and implementation vary significantly across state lines.
- **Ohio House Bill 47 (October 2024):** A specific example of state action mandating AED placement in public/chartered schools and recreation facilities, along with staff training requirements.

## The Implementation Framework for High-Quality Training

To move beyond "minimal compliance," the Heart Rhythm Society proposes a shift toward durable competency:

1. **High-Quality Instruction:** Moving from one-time exposure to hands-on instruction and longitudinal refreshers (every 6–12 months).
  2. **Technology Integration:** Utilizing 911-integrated responder apps, AED registries, and emerging tools like drone-delivered AEDs.
  3. **Equity and Access:** Ensuring multilingual education and equitable AED placement in underserved communities.
  4. **Stakeholder Alignment:** Collaborating between school administrators, health professionals, coaches, and families.
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## Part 2: Short-Answer Practice Questions

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**1. Why is didactic-only (classroom-style) training considered inadequate for CPR education?**

*Answer:* Didactic-only instruction does not reliably produce durable skills or the confidence to act in a real emergency; hands-on practice with feedback is required for skill retention.

**2. What are the key components of the "Impact Pathway" leading to survival?** *Answer:* Training → Recognition → Activation → CPR → AED → Survival.

**3. Identify two major gaps in current state legislative mandates.** *Answer:* Lack of uniformity in requirements and a lack of dedicated funding/appropriations to support the mandates.

**4. How does the HEARTS Act aim to improve school safety regarding cardiac events?** *Answer:* It promotes CPR training, CERP development, AED grants, increased awareness of cardiomyopathies, and funding for sudden death prevention research.

**5. Name three emerging technologies that could improve SCA detection or response.** *Answer:* AI ECG for risk detection, smartwatch/wearable arrhythmia detection, and drone-dispatched AED delivery.

**6. What role does "PulsePoint" play in the chain of survival?** *Answer:* It serves as a 911-integrated system to alert nearby volunteer responders and provide the locations of nearby AEDs.

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## Part 3: Essay Prompts for Deeper Exploration

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**1. The Equity Gap in Resuscitation Science** Analyze how socioeconomic and geographic disparities influence OHCA survival rates. Based on the document, what specific strategies (e.g., multilingual education, targeted AED placement) can be used to mitigate these inequities in high school training programs?

**2. The Evolution of the "Chain of Survival" through Technology** The source context highlights a move toward technology-facilitated community response. Evaluate the potential benefits and implementation challenges (such as privacy, accuracy, and airspace regulation) of integrating wearables, AI, and drones into the emergency response framework.

**3. From Policy to Practice: The Funding Dilemma** While the HEARTS Act and various state laws mandate CPR training, they often remain "unfunded mandates." Discuss the implications of inadequate funding on the quality of education and the maintenance of life-saving equipment like AEDs. How might public-private partnerships fill this gap?

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## Part 4: Glossary of Important Terms

| Term       | Definition                                                                                                                                                                    |
|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| AED        | <b>Automated External Defibrillator:</b> A portable device that checks heart rhythm and can send an electric shock to the heart to restore a normal rhythm.                   |
| CARES      | <b>Cardiac Arrest Registry to Enhance Survival:</b> A national registry used to evaluate outcome data and the effectiveness of implementation strategies for OHCA.            |
| CERP       | <b>Cardiac Emergency Response Plan:</b> A written document that establishes specific steps to take during a cardiac emergency in a school setting.                            |
| HEARTS Act | <b>Cardiomyopathy Health Education, Awareness, Research, and Training in Schools Act:</b> 2024 federal legislation focused on SCA prevention and education in public schools. |
| OHCA       | <b>Out-of-Hospital Cardiac Arrest:</b> A condition where the heart suddenly stops beating outside of a clinical or hospital setting.                                          |
| SCA        | <b>Sudden Cardiac Arrest:</b> The abrupt loss of heart function, breathing, and consciousness, usually resulting from an electrical disturbance in the heart.                 |
| SCD        | <b>Sudden Cardiac Death:</b> A natural death from cardiac causes, heralded by abrupt loss of consciousness.                                                                   |
| T-CPR      | <b>Telephone CPR:</b> Instructions provided by emergency dispatchers over the phone to assist bystanders in performing CPR.                                                   |