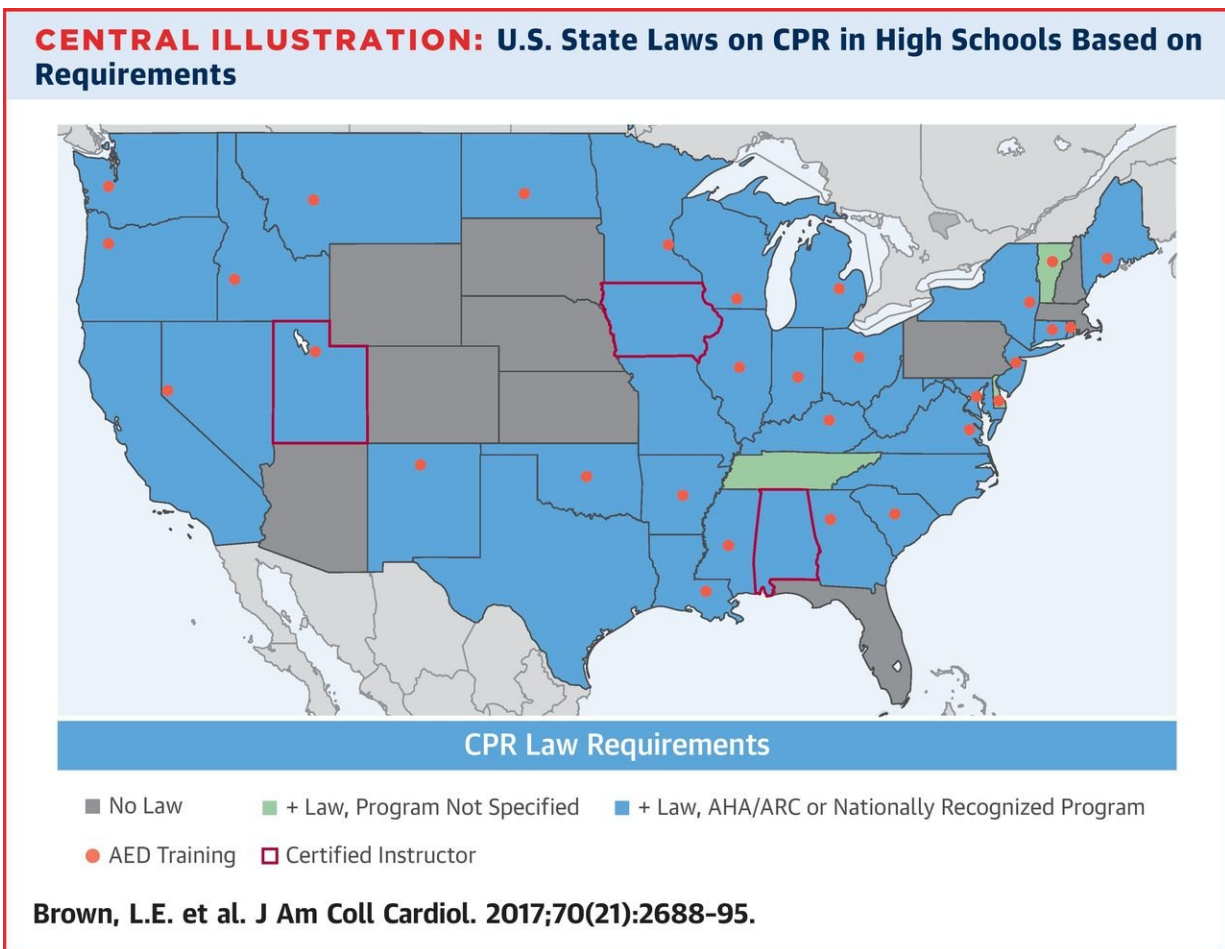


Despite majority of US states requiring CPR training, wide variability exists

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Bystander cardiopulmonary resuscitation (CPR) is known to improve survival of cardiac arrest; however, there is a disparate geographic variation in cardiac arrest survival and only a small number of the US population is trained in CPR annually. According to the Institute for Medicine (IOM), high school students may be an excellent target for CPR training. A review published in the *Journal*

of the American College of Cardiology found that over half of US states require some form of CPR training in high school, but there is wide variability in instruction. Credit: © 2017 By the American College of Cardiology Foundation

Bystander cardiopulmonary resuscitation (CPR) is known to improve survival of cardiac arrest; however, there is a disparate geographic variation in cardiac arrest survival and only a small number of the U.S. population is trained in CPR annually. According to the Institute for Medicine (IOM), high school students may be an excellent target for CPR training. A review published in the *Journal of the American College of Cardiology* found that over half of U.S. states require some form of CPR training in high school, but there is wide variability in instruction.

Over 350,000 people in the U.S. experience out-of-hospital [cardiac arrest](#) each year. Cardiac arrest is the sudden, unexpected loss of heart function, breathing and consciousness. Bystander CPR increases the likelihood of survival, but only 2.4 percent of the U.S. population is trained in CPR each year.

High [school](#) students were identified as a prime population for CPR education as over 16 million students are enrolled in secondary education in the U.S. According to the IOM, schools provide a central setting that all students have access, representing a large audience for CPR [training](#).

"Prior CPR training is the single most powerful factor contributing to a person performing bystander CPR in an emergency," said Lorrel E. Brown, MD, associate director of the Cardiovascular Medicine Fellowship Program at the University of Louisville School of Medicine and lead author. "By requiring [high school students](#) to receive training before graduation, we are creating a group of potential lifesavers each year."

Researchers identified 32 states with CPR laws using the American Heart Association's "CPR in Schools" website in June 2016. Maine was unintentionally omitted due to misidentification on the website. The superintendents in each of these states were sent an email communication by the researchers containing a survey link. Follow-up emails were sent at 1 and 3 months; researchers also attempted to identify district-level superintendents and individual school principals. The survey included 12 questions on demographics and the current status of CPR instruction in the school.

In total, 424 of 25,694 eligible high schools in 32 states completed the survey. Of the participating schools, 96 percent were public schools and 3 percent were private schools. All surveyed schools are in states that require CPR training in high school by law; however, only 77 percent of respondents indicated they provide CPR training at their school. Several of the surveyed states had passed laws within the last year and schools in these states commented they are creating programs in response to the new laws.

About 97 percent of responding schools provide CPR training during school hours. CPR training most commonly took place in health class for 9th and 10th grade students. Most schools indicated using a CPR-certified teacher/coach or other CPR-certified instructor; however, 11 percent reported using a non-certified teacher/coach. Ninety-six percent of schools use hands-on CPR practice as part of their training. Automated external defibrillator (AED) training occurs in 63 percent of schools. However, even in states where multiple schools responded, variation occurred in responses.

In September 2017 researchers found an additional seven states had passed CPR legislation since the time of the survey. The respective legislation in all 39 states was categorized on the following:

- Class specified for CPR training
- Instructor certification to teach CPR required
- AED instruction
- CPR training program recommended/required
- Hands-on practice required
- State funding availability

Upon examination of the 39 states with legislation, researchers found the following:

- One does not require hands-on training
- 89 percent require a "nationally recognized" method
- 8 percent do not specify a training method
- One state requires full CPR certification
- 77 percent require AED training
- 8 percent of states require the instructor be certified to teach CPR
- 75 percent specify CPR training take place during a specific class, typically health class

"I believe that implementation of CPR training in U.S. high schools should be strongly considered, and these types of mandates should begin to be instituted by the state government," said Valentin Fuster, MD, PhD, MACC, editor-in-chief of the *Journal of the American College of Cardiology*. "This approach could save thousands of lives."

"Bystander CPR has increased in Norway, Denmark and Minnesota following the institution of school CPR training—essentially, CPR training is most effective when it is taken as a societal responsibility to the community, rather than only under the purview of medical professionals," Brown said. "Nearly 700,000 high school students live in [states](#) without CPR training legislation, representing a missed opportunity to equip our population with this vital skill."

According to the researchers, "we have yet to establish a standard for CPR instruction that is effective, efficient, financially feasible, and leads to increased nationwide rates of bystander CPR and survival following OHCA."

More information: *Journal of the American College of Cardiology* (2017). [DOI: 10.1016/j.jacc.2017.09.1101](https://doi.org/10.1016/j.jacc.2017.09.1101)

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