

Basic Life Support Training for Healthcare Providers

Guidance

**Note: This policy statement will form the basis for future AHA global advocacy statements on emergency cardiovascular care, resuscitation and first aid.*

Introduction

Worldwide, millions are dying each year due to preventable and reversible critical illnesses. The World Health Organization (WHO) estimates that about 17.9 million of global deaths each year are from cardiovascular disease (CVD).¹ More specifically, it is estimated that nearly half of all cardiovascular deaths worldwide are due to sudden cardiac arrest (SCA), resulting in approximately 8 million cases each year.² While data from many parts of the world is limited and there is regional variability in the incidence, the global survival rate for SCA is less than 1%.^{2,3} Immediate high-quality basic life support (BLS) is a crucial step in the chain of survival and when delivered in compliance with existing evidence-based guidelines, is associated with improved patient outcomes.⁴ Therefore, training in BLS is a vital aspect of education for health care providers.

BLS is the foundation for saving lives after cardiac arrest and includes knowledge and skills in cardiopulmonary resuscitation (CPR) and the use of an automated external defibrillator (AED). It can be provided by trained healthcare providers, including doctors, nurses, physician assistants, and first responders. However, it is important that BLS training not only focuses on patient survival but also on functional outcomes. While this depends on the early provision of CPR, the quality of CPR delivered is equally critical. Poor-quality CPR should be considered a preventable harm.⁴ Thus, research in CPR, BLS and resuscitation in general is needed to understand the epidemiology, infrastructure and systems context, level of training, and potential for cost-effective care to improve outcomes. Unfortunately, investment does not match the public health impact of sudden cardiac arrest. Research funding is low relative to other leading causes of death and a disproportionate share of resources is targeted to communicable diseases.⁵

Additionally, global disparities remain in terms of access to BLS and resuscitation training opportunities, the quality of available training, and the likelihood of training implementation and quality improvement.⁶ There is international recognition that the lack of adequate resuscitation training for healthcare providers is a major barrier to scaling up and sustaining emergency care services in many countries.⁷ This was recognized in 2019 by the WHO in a resolution in which:⁸

The World Health Assembly...urges member-states...[OP2.9] to provide dedicated training in the management of emergency conditions for all relevant types of health providers, including developing post-graduate training programmes for doctors and nurses, training frontline providers in basic emergency care, and integrating dedicated emergency care training into undergraduate nursing and medical curricula, and establishing certification pathways for prehospital providers, as appropriate to their national context."

As such, it is imperative that healthcare providers undergo adequate CPR, basic life support (BLS) and resuscitation training.

Building on resuscitation treatment recommendations and guidelines previously published by international organizations,^{4, 8, 9} this policy statement sets forth guiding principles on the implementation, execution, quality improvement and oversight for CPR and BLS training for healthcare providers.

AHA POSITION STATEMENT: The AHA supports high quality CPR and BLS training for healthcare providers to improve patient outcomes. We consider poor quality CPR to be a preventable harm.

Potential Global Impact of BLS Training

Healthcare providers in many countries are often not required to gain additional knowledge and skills in BLS. Moreover, there is no established, cost-effective BLS training for healthcare providers on a global scale. However, research has shown that BLS training for healthcare providers do not only improve resuscitation knowledge and skills and operational performance,^{10, 11 12-14} it also improves patient outcomes.¹⁵

AHA's Guiding Principles for Training Healthcare Providers in BLS

Guiding Principle #1: (Education) BLS should be a core ingredient to continuous professional or educational development in institutions overseeing the education of clinicians and first responders, whether licensing bodies or regulatory agencies, such as a national or regional ministry of health.

Guiding Principle #2: (Clinical outcomes) BLS training for healthcare workers should be based on clear scientific evidence linking improved knowledge and skills with better patient outcomes.

Guiding Principle #3: (Strengthening healthcare systems) BLS should be integrated as an essential health service within a comprehensive approach to strengthening healthcare systems.

Guiding Principle #4: (Quality Improvement) Healthcare systems that monitor and report quality-of-care metrics and patient-centered outcomes (including standardized clinical registries incorporating essential BLS data points) will have the greatest opportunity through quality improvement efforts to save the most lives.

Guiding Principle #5: (Surveillance and Research) Continued surveillance and research are needed to address knowledge gaps that still exist not only in the field of cardiac arrest science and care but also in effective resuscitation education and knowledge translation strategies.

Guiding Principle #6: (Emergency Preparedness) BLS should be included as a critical aspect of healthcare systems emergency preparedness protocols.

1. Organization WH. Cardiovascular Diseases (CVDs). 2017;2020.
2. Mehra R. Global public health problem of sudden cardiac death. *J Electrocardiol.* 2007;40:S118-22.
3. Wong CX, Brown A, Lau DH, Chugh SS, Albert CM, Kalman JM and Sanders P. Epidemiology of Sudden Cardiac Death: Global and Regional Perspectives. *Heart Lung Circ.* 2019;28:6-14.
4. Meaney PA, Bobrow BJ, Mancini ME, Christenson J, de Caen AR, Bhanji F, Abella BS, Kleinman ME, Edelson DP, Berg RA, Aufderheide TP, Menon V, Leary M, Cpr Quality Summit Investigators tAHA/ECCC, the Council on Cardiopulmonary CCP and Resuscitation. Cardiopulmonary resuscitation quality: [corrected] improving cardiac resuscitation outcomes both inside and outside the hospital: a consensus statement from the American Heart Association. *Circulation.* 2013;128:417-35.
5. Maher A and Sridhar D. Political priority in the global fight against non-communicable diseases. *J Glob Health.* 2012;2:020403.
6. Nielsen K, Mock C, Joshupura M, Rubiano AM, Zakariah A and Rivara F. Assessment of the status of prehospital care in 13 low- and middle-income countries. *Prehosp Emerg Care.* 2012;16:381-9.
7. Chen L, Evans T, Anand S, Boufford JL, Brown H, Chowdhury M, Cueto M, Dare L, Dussault G, Elzinga G, Fee E, Habte D, Hanvoravongchai P, Jacobs M, Kurowski C, Michael S, Pablos-Mendez A, Sewankambo N, Solimano G, Stilwell B, de Waal A and Wibulpolprasert S. Human resources for health: overcoming the crisis. *Lancet.* 2004;364:1984-90.
8. Organization WH. Emergency care systems for universal health coverage: ensuring timely care for the acutely ill and injured: Draft resolution proposed by Argentina, Ecuador, Eswatini, Ethiopia, Israel, the European Union and its Member States and the United States of America 2019.
9. Nolan JP, Berg RA, Andersen LW, Bhanji F, Chan PS, Donnino MW, Lim SH, Ma MH, Nadkarni VM, Starks MA, Perkins GD, Morley PT, Soar J and Utstein C. Cardiac Arrest and Cardiopulmonary Resuscitation Outcome Reports: Update of the Utstein Resuscitation Registry Template for In-Hospital Cardiac Arrest: A Consensus Report From a Task Force of the International Liaison Committee on Resuscitation (American Heart Association, European Resuscitation Council, Australian and New Zealand Council on Resuscitation, Heart and Stroke Foundation of Canada, InterAmerican Heart Foundation, Resuscitation Council of Southern Africa, Resuscitation Council of Asia). *Resuscitation.* 2019;144:166-177.
10. Aufderheide TP, Nolan JP, Jacobs IG, van Belle G, Bobrow BJ, Marshall J, Finn J, Becker LB, Bottiger B, Cameron P, Drajer S, Jung JJ, Kloeck W, Koster RW, Huei-Ming Ma M, Shin SD, Sopko G, Taira BR, Timmerman S and Eng Hock Ong M. Global health and emergency care: a resuscitation research agenda--part 1. *Acad Emerg Med.* 2013;20:1289-96.
11. Kooij FO, van Alem AP, Koster RW and de Vos R. Training of police officers as first responders with an automated external defibrillator. *Resuscitation.* 2004;63:33-41.
12. Lee CC, Im M, Kim TM, Stapleton ER, Kim K, Suh GJ, Singer AJ and Henry MC. Comparison of traditional advanced cardiac life support (ACLS) course instruction vs. a scenario-based, performance oriented team instruction (SPOTI) method for Korean paramedic students. *J Emerg Med.* 2010;38:89-92.
13. Bergman S, Deckelbaum D, Lett R, Haas B, Demyttenaere S, Munthali V, Mbembati N, Museru L and Razek T. Assessing the impact of the trauma team training program in Tanzania. *J Trauma.* 2008;65:879-83.
14. Meaney PA, Sutton RM, Tsima B, Steenhoff AP, Shilkofski N, Boulet JR, Davis A, Kestler AM, Church KK, Niles DE, Irving SY, Mazhani L and Nadkarni VM. Training hospital providers in basic CPR skills in Botswana: acquisition, retention and impact of novel training techniques. *Resuscitation.* 2012;83:1484-90.
15. Moretti MA, Cesar LA, Nusbacher A, Kern KB, Timmerman S and Ramirez JA. Advanced cardiac life support training improves long-term survival from in-hospital cardiac arrest. *Resuscitation.* 2007;72:458-65.