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## Cardiac Arrest - An Introduction

### Summary

Out-of-hospital cardiac arrest is a leading cause of death, with an estimated 15,000 people suffering a cardiac arrest in Australia every year. Between 6% and 13% of cardiac arrest victims in Australia will survive more than one year past the event<sup>i ii</sup>. This dismal survival rate has remained unchanged for over three decades<sup>iii</sup>, however during the past 50 years the fundamentals of early recognition and activation, early CPR, early defibrillation, and early access to emergency medical care have saved hundreds of thousands of lives around the world<sup>iv</sup>.

Receiving early CPR can increase the odds of surviving a cardiac arrest by a factor of five, according to studies.

Certain types of cardiac arrest only respond effectively to defibrillation and if delivered quickly, up to 75% can survive. Success declines at a rate of 10% with each minute delayed.

The greatest chance of survival is when CPR / BLS and defibrillation are administered by the nearest person, although CPR is only attempted for about 30% of patients. Those that had undertaken training were seven more times likely to attempt CPR than those without.

BLS is the foundation for saving lives following cardiac arrest. This includes:

- Immediate recognition of cardiac arrest and activation of emergency response system
- Early performance of CPR
- Rapid defibrillation when appropriate.

Early recognition is the key to survival and relies on using the most accurate method to determine cardiac arrest.

The definition of cardiac arrest has changed to "...combination of unresponsiveness and absent or abnormal breathing..." which means it is now easier to identify and should encourage CPR.

Chest compressions should be performed in adults at a rate of at least 100 compressions per minute. Rescuers do not now need to check for a pulse, which results in concentration on compressions.

Lay rescuers only need to perform compressions, as this has been shown to be effective alone; ND takes into account the reluctance of bystanders to deliver mouth-to-mouth resuscitation.

Health professionals are still encouraged to perform ventilations as well as compressions.

[Full version \(link to full version of the paper\)](#)

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<sup>i</sup> Berdowski J, Berg RA, Tijssen JGP, Koster RW. Global incidences of out-of-hospital cardiac arrest and survival rates: Systematic review of 67 prospective studies. *Resuscitation*. 2010;81:1479-87

<sup>ii</sup> Cheung W, Flynn M, Thanakrishnan G, Milliss DM, Fugaccia E. Survival after out-of-hospital cardiac arrest in Sydney, Australia. *Crit Care Resusc*. 2006;8:321-27

<sup>iii</sup> Nicol G, Thomas E, Callaway CW, Hedges J, Powell JL, Aufderheide TP, Rea T, Lowe R, Brown T, Dreyer J, Davis D, Idris A, Stiell I. Regional Variation in Out-of-Hospital Cardiac Arrest Incidence and Outcome. *JAMA*. 2008;300(12):1423-31

<sup>iv</sup> Field JM, Hazinski MF, Sayre MR, Chameides L, Schexnayder SM, Hemphill R, Samson RA, Kattwinkel J, Berg RA, Bhanji F, Cave DM, Jauch EC, Kudenchuk PJ, Neumar RW, Peberdy MA, Perlman JM, Sinz E, Travers AH, Berg MD, Billi JE, Eigel B, Hickey RW, Kleinman ME, Link MS, Morrison LJ, O'Connor RE, Shuster M, Callaway CW, Cucchiara B, Ferguson JD, Rea TD, Vanden Hoek TL. Part 1: Executive Summary. 2010 American Heart Association Guidelines for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care. *Circulation* 2010; 122 [suppl 3]: S640 -S656.