

Introduction

Guidelines 2010 marks the 50th Anniversary of modern CPR.¹ These new guidelines are the culmination of many years of international collaboration to improve the practice and teaching of resuscitation medicine.² Guidelines 2000 for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care provided the basis for the first international resuscitation guidelines.³ Representatives from the world's major resuscitation organisations reached this consensus only after exhaustive review of the published literature and extensive debate at consensus meetings. The review process was thorough and provided the best evidence-based approach to the resuscitation of patients of all ages. The guidelines that arose from this process were adopted internationally with only minor modifications required by local custom, practice, or availability of drugs.

This review process, led by the International Liaison Committee on Resuscitation (ILCOR), was repeated during 2004/5 and culminated in the 2005 International Consensus Conference on Emergency Cardiovascular Care (ECC) and Cardiopulmonary Resuscitation (CPR) Science with Treatment Recommendations (C2005). The summary science statements and treatment recommendations from this conference were published: *2005 International Consensus on Cardiopulmonary Resuscitation and Emergency Cardiovascular Care Science with Treatment Recommendations (CoSTR)*.⁴ This document formed the scientific basis for the European Resuscitation Council (ERC) and Resuscitation Council (UK) (RC(UK)) Guidelines for Resuscitation 2005. Five years later, the whole review process has been repeated. The 2010 CoSTR⁵ is the product of the most recent Consensus on CPR Science Conference that took place in February 2010 and forms the basis of the 2010 ERC⁶ and RC(UK) Guidelines. Treatment recommendations derived directly from the ILCOR systematic reviews are formulated by consensus. The precise wording of the recommendations is agreed by an international task force of 8-12 individuals before being presented to an International Editorial Board of 25 individuals representing resuscitation organisations. Using a web-based system, writing group members have to vote for every treatment recommendation in their section of the consensus on CPR science document. This is consistent with nominal group consensus methods. Each section of the CoSTR manuscript is peer reviewed by four reviewers and individual responses are made to all comments from the reviewers; amendments are made to the final manuscript before publication in the journals *Circulation* and *Resuscitation*.

The ERC and RC(UK) derive their guidelines by taking ILCOR source statements and by applying nominal group methods, then translating them into treatment and practice recommendations that are relevant for European and UK populations respectively. The RC(UK) Guidelines are peer reviewed by the Executive Committee of the RC(UK),

which comprises 24 individuals and includes lay representation and representation of the key stakeholder groups.

These latest guidelines contain some treatment recommendations and changes in practice based on new scientific evidence that has accrued since 2005. Consistency in practice among countries provides the basis for the large trials necessary to establish best practice, and the further development of such international collaboration is encouraged. Similarly, consistent collection and reporting of audit data in registries that enable comparison between systems does much to improve practice and ensure that the victims of sudden cardiac arrest are given the best chance of successful resuscitation. These current guidelines reflect improvements in practice resulting from research and audit, encouraged by the co-operation that exists within the international resuscitation community.

The adult basic life support algorithm is unchanged from 2005. The adult advanced algorithms and paediatric resuscitation algorithms have been updated to reflect changes in the guidelines. The changes are relatively minor and every effort has been made to keep the algorithms simple, yet applicable to cardiac arrest victims in most circumstances.

Rescuers begin CPR if the victim is unconscious or unresponsive and not breathing normally (ignoring occasional gasps). A single compression-ventilation (CV) ratio of 30:2 is used by the single rescuer of an adult or child (excluding newborn) out of hospital, and for all adult CPR. This single ratio is designed to simplify teaching, promote skill retention, increase the number of compressions given, and decrease interruption to compressions. Once a defibrillator is attached, if a shockable rhythm is confirmed, a single shock is delivered. Irrespective of the resultant rhythm, chest compressions and ventilations (2 min with a CV ratio of 30:2) are resumed immediately after the shock to minimise the 'no-flow' time.

Several studies indicate that unnecessary interruptions to chest compressions occur frequently both in and out of hospital. Resuscitation instructors must emphasise the importance of minimising interruptions to chest compression.

Several of the treatment recommendations in these guidelines represent significant changes in the way resuscitation is delivered. It will take time for courses and training materials to be updated and for this change in practice to be disseminated to healthcare professionals and laypeople by resuscitation trainers. As this transition is made there will inevitably be some variation in practice between individuals and healthcare organisations. Healthcare organisations should implement those components of Guidelines 2010 relevant to them by the end of 2011.

Guidelines 2010 do not define the only way that resuscitation should be achieved; they merely represent a widely accepted view of how resuscitation can be undertaken both safely and effectively. The publication of new treatment recommendations does not imply that current clinical care is either unsafe or ineffective.

The process leading to the publication of the guidelines has entailed considerable work by many individuals over a protracted period. The RC(UK) would like to thank all the individuals and organisations that have contributed to the process and made this publication possible.

All those who undertook systematic reviews and participated in the 2010 Consensus on CPR Science Conference signed and adhered to a strict conflict of interest (COI) policy. The details of this ILCOR COI policy are published elsewhere.⁷ All the individuals contributing to the writing of these guidelines have signed and adhered to the [RC\(UK\) COI Policy](#). The COI declarations of all authors are listed in Appendix 1.

The RC(UK) Guidelines undergo a major revision every 5 years (synchronised with the International Consensus on Cardiopulmonary Resuscitation Science Conferences and new ERC Guidelines) with occasional interim amendments to reflect very important new science. These interim amendments are generally made only if delaying guideline changes until a major revision is thought to put patients at risk. The decision to publish interim 'advisory statements' is made by the ILCOR delegates. Thus, the next major review of these guidelines will be in 2015.

Abbreviations used

The following abbreviations have been used in these guidelines:

h	hour, hours
h ⁻¹	per hour
min	minute, minutes
min ⁻¹	per minute
s	second, seconds
s ⁻¹	per second.