



ELSEVIER



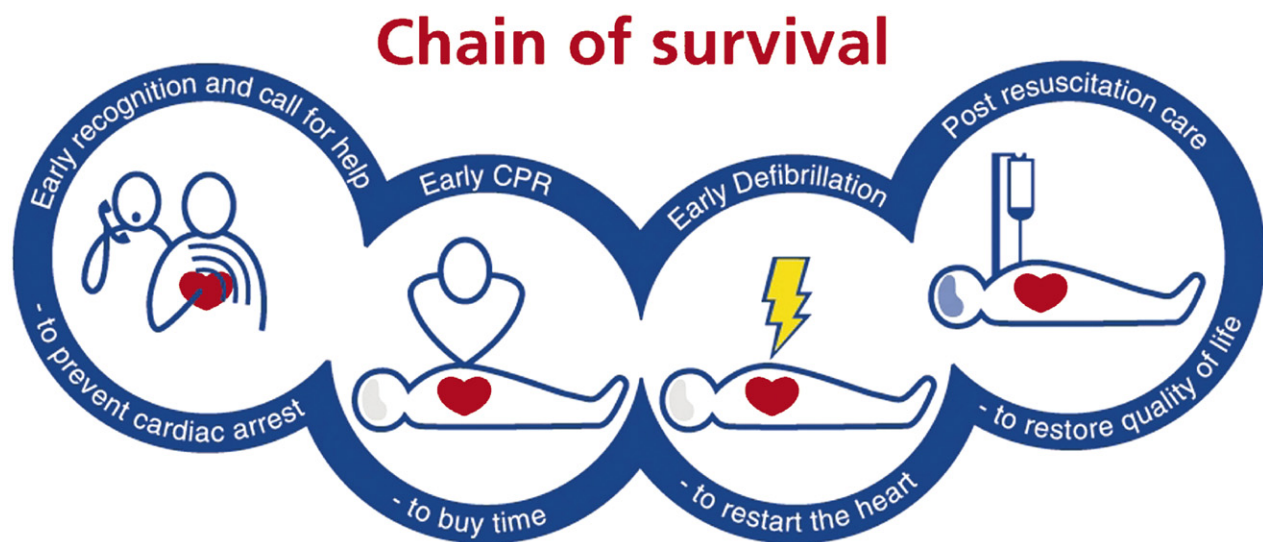
IMAGE IN RESUSCITATION

The chain of survival

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Survival from cardiac arrest depends on a sequence of interventions. The chain of survival concept emphasises that all these time-sensitive interventions must be optimised to maximise the chance of survival—a chain is only as strong as its weakest link.¹ The original four links of the chain of survival comprised: (1) early access—to activate the emergency medical services (EMS); (2)

early basic life support (BLS) to slow the rate of deterioration of the brain and heart, and buy time to enable defibrillation; (3) early defibrillation—to restore a perfusing rhythm; (4) early advanced life support (ALS)—to stabilise the patient. This chain is a prominent symbol of resuscitation services in many parts of the world. Designs depicting the chain of survival have been updated frequently, but until recently the message conveyed in each link has remained unchanged.

In 2005, the chain of survival was revised to reflect the importance of: (a) recognising critical

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illness and/or angina and preventing cardiac arrest (in- or out-of-hospital), and (b) post resuscitation care. Considerable thought and discussion was put into the design of the new chain and there were proposals for 3-, 4-, 5- and 6-ring versions! The final 4-ring version appeared in the 2005 European Resuscitation Council (ERC) Resuscitation Guidelines (Figure).² It includes messages about prevention and post resuscitation care, while retaining simplicity. The first link indicates the importance of recognising those at risk of cardiac arrest and calling for help in the hope that early treatment can prevent arrest. It has long been recognised that up to 80% of patients show signs of physiological deterioration in the hours before cardiac arrest. A recent study has also shown that the majority of patients sustaining out-of-hospital cardiac arrest have warning symptoms for a significant duration before the event.³ The central links of the chain depict the integration of cardiopulmonary resuscitation (CPR) and defibrillation as the fundamental components of early resuscitation in an attempt to restore life.

The final link, effective post resuscitation care, is targeted at preserving function, particularly of the brain and heart, and recognises the importance of restoring quality of life to the cardiac arrest survivor. In contrast to the grey brains depicted in the central links, the blue brain of the final link indicates the potential benefit provided by therapeutic hypothermia.

References

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