EUROPEAN RESUSCITATION COUNCIL

Guidelines 2025

Guideline title	Chapter 1: Executive summary
Guideline objective	To provide a summary of evidence informed guidance for the prevention and management of cardiac arrest for all ages. To summarise key changes in Guidelines 2025 from previous ERC guidelines. To provide the description of the guideline development process and COI management
Intended audience	Laypersons, healthcare professionals, stakeholders, governments
Setting	Out of hospital cardiac arrest In hospital cardiac arrest Lower resource settings and remote areas
Writing group members	Robert Greif, Gavin D Perkins, Jan-Thorsten Gräsner, Federico Semeraro, Mike Smyth, Jas Soar, Jana Djakow, Marije Hogeveen, Carsten Lott, Jerry Nolan, Sabine Nabecker, Violetta Raffay, Therese Djärv, Theresa M Olasveengen, Joyce Yeung, Natasa Spartinou, Kasper G Lauridsen, Vix Monnelly, Nikolaos Nikolaou, Koen Monsieurs

Section headings	Key Content and main changes
Epidemiology	Community response systems, IHCA
Systems Saving Lives	Low Resource Settings, New Technology, AI
Basic Life Support (adults)	Video assisted dispatch, drones
Advanced Life Support (adults)	Anticipatory charging, FONA, physiology guided CPR
Paediatric life support (BLS & ALS)	Post resuscitation care and post-discharge care
Neonatal Life Support	Special Circumstances, Discontinuing/ Withholding
Special Circumstances	Sports, Drowning and Water rescue, ECPR
Post Resuscitation Care	Investigating sudden unexplained CA, CA centres
Education	Education tailored for different providers, assessment
Ethics	Ethical challenges of bystanders and first responders
First Aid	Conditions that might lead to CA if first aid is not done

Guideline title	Chapter 2: Epidemiology in Resuscitation
Guideline objective	To summarise the evidence on the epidemiology and outcome of in and out of hospital cardiac arrest and to discuss differences in EMS organisation, community response and hospital systems among different countries. To provide recommendations about the development of cardiac arrest registries by health systems for measurement of patients' and systems' characteristics, improvement of the quality of care and the responses to cardiac arrest.
Intended audience	Laypersons, healthcare professionals, stakeholders, governments
Setting	Out of hospital cardiac arrest In hospital cardiac arrest

Writing group members	Jan-Thorsten-Graesner, Enrico Baldi (Co-chairs), Jan Wnent (joint first co-authorship), Siobhan Masterson, Gisela Lilja, Maria Luce Caputo, Kirstie Haywood, Fernando Rosell-Ortiz, Anneli Strömsöe, Ingvild B.M. Tjelmeland, Ziad Nehme, Gavin D Perkins

Section headings	**Key content / considerations**
OHCA – incidence	To discuss about the incidence of OHCA in Europe in the context to the situation of the other part of the world
OHCA - characteristics and presenting rhythms	To evaluate the characteristics of the cardiac arrest, with an especial focus on the presenting rhythms, also evaluating eventual differences among different countries
OHCA - EMS organisation	To evaluate differences concerning EMS organization in different countries, looking especially to the different EMS response time
OHCA - Community response	To evaluate the community response (i.e. bystanders and First Responders) in the different European countries in an epidemiological shape highlighting also the differences among different contexts
OHCA – Outcome	To analyse the patients' outcome after an OHCA in the European countries, also in the context to the situation of the other part of the world
OHCA – Paediatric population	To evaluate the peculiar aspect of OHCA in children focusing also the incidence and the outcome
IHCA – Incidence	To evaluate the incidence of IHCA in the European countries
IHCA - Response organization	To discuss about the system configuration to detect critical illness and to respond to an IHCA, also looking to the response times
IHCA – Outcome	To evaluate the outcome after an IHCA taking into account the different patients' characteristics and ILCOR Ten-Steps for IHCA
Long-term survival and return to society - Measurement of outcome and recovery	To look at the different reporting systems for outcome and patients' recovery after a cardiac arrest
Long-term survival and return to society - Rehabilitation and return to society	To evaluate the different pathways in European countries for patients' rehabilitation after a cardiac arrest with a special focus to the return to society
Genetic variants in cardiac arrest patients	To explore the impact of genetic and epigenetic factors in the predisposition of patients to cardiac arrest
Low Resource Settings and Remote Areas	Evidence on epidemiology the lower-resource setting on resuscitation success and activities. Addresses the challenges and strategies for cardiac arrest response in areas with limited resources or in remote areas.

Guideline title	**Chapter 3 : Systems Saving Lives**
Guideline objective	To guide governments, managers of health and education systems, healthcare professionals, teachers, students, survivors communities and the general population on the evidence and

	best practices that improve survival and outcome in patients who have a cardiac arrest.
Intended audience	Interested and/or involved in resuscitation implementation
Setting	Communities, In-Hospital and Out-of-Hospital
Writing group members	Federico Semeraro, Sebastian Schnaubelt (Co-chairs), Theresa M. Olasveengen, Carolina Malta Hansen, Elena G Bignami, Nino Fijačko, Lorenzo Gamberini, Andrew Lockey, Bibiana Metelmann, Camila Metelmann, Hans van Schuppen, Kaushila Thilakasiri, Giuseppe Ristagno, Bernd W. Böttiger, Koenraad G Monsieurs.

Section headings	**Key content / considerations**
Chain of Survival & the Formula of Survival	Description of the traditional chain of survival and revised representation. Discusses the critical steps and strategies needed to increase the survival rate from cardiac arrest.
Measuring the Performance of Resuscitation Systems	The evidence available to improve survival is based on the quality indicators and cardiac arrest management models. Focuses on evaluating how effective resuscitation systems are in saving lives (e.g. dashboard, data registry to improve survival).
EMS Organization in Response to Cardiac Arrest	Look at how Emergency Medical Services are structured and operate during cardiac arrest (e.g. Role of dispatcher, Dispatch-assisted CPR, Dispatch-assisted chest compression-only CPR compared with standard CPR, etc.).
First Responders	Highlights the role and importance of the initial responders to a cardiac arrest (e.g. FRs community, engagement, apps).
Awareness Campaign to Promote CPR	Evidence available on awareness of the community with the activities of the ERC campaigns. Describes efforts to increase public knowledge and skills in CPR (e.g. ERHD, WRAH, UEFA, EFA, etc.)
Advocacy and Survivors	Evidence available on advocacy. Focuses on advocacy for better cardiac arrest management and the experiences of those who have survived cardiac arrest (e.g. advocacy and laws at EU levels, survivors' community and awareness).
Kids Save Lives (KSL)	The evidence available on awareness in Europe and outside Europe with the activities of the KSL campaign. The schoolchildren training about CPR and first aid techniques (e.g. Europe map, experiences in Europe, ILCOR narrative review).
Low Resource Settings and Remote Areas	Evidence on activities in the lower-resource setting to improve survival. Addresses the challenges and strategies for cardiac arrest response in areas with limited resources (e.g. ILCOR review and collaboration with other LR scientific societies, etc.).
Rapid Response Systems and In-Hospital Cardiac Arrest	The evidence available on the implementation of NEWS, RRS and MET to improve survival. Explores the systems in place within hospitals to quickly respond to cardiac arrests that occur

	within their facilities. (e.g. NEWS and ILCOR In-hospital publication, etc.).
Cardiac arrest centres	Evidence on CAC dedicated to the treatment and management of cardiac arrest patients (e.g. update about CAC, ILCOR, joint statement with other scientific societies, etc.).
Social media	Evidence on social media's role in improving science and survival communication. Looks at how social media platforms are used in the context of cardiac arrest awareness and response (e.g. experience with the use of SoMe, the good communication of science and education with SoMe, etc.).
New Technology and Artificial Intelligence	Evidence on the new technologies to survival. Examines the emerging role of technology and AI in improving responses to cardiac arrest and resuscitation efforts (e.g., wearable devices, big data, wide monitoring, AI, etc.).

Guideline title	**Chapter 4: Basic Life Support (adult)**
Guideline objective	To provide evidence informed guidance for members of the public on the initial stages of resuscitation before advanced support is started
Intended audience	Lay persons, first responders Health care professionals Basic life support and AED trainers / instructors
Setting	Out of hospital cardiac arrest
Writing group members	Mike Smyth, Sander van Goor (co-chair), Giuseppe Ristagno, Violetta Raffay, Natasa Spartinou, Siobhan Masterson, Nino Fijačko, Carolina Malta Hansen, Tommaso Scquizzato, Christopher Smith, Jessica Rogers, Naomi Nakagawa, Gavin Perkins

Section headings	**Key content / considerations**
Adult BLS sequence	Summary algorithm
Cardiac arrest recognition	How to recognize cardiac arrest; how to open the airway; Unconscious and not breathing normally, agonal breathing; Convulsions and confusion with epileptic seizure
Alert emergency services	How to summon help; Prioritization of initial tasks; Single emergency number; using smartphone in hands free mode
Role of dispatcher	Dispatcher recognition CA; Video assisted dispatch; Dispatcher assisted CPR; Dispatch of lay responders; Dispatch of AEDs; Using AI to improve recognition
Chest compressions	How to deliver chest compressions (position of rescuer, hand position, rate, depth, duty cycle, recoil, alternating rescuer) CPR feedback technology including smartphones and watches
Rescue breaths	How to assess; How to manage the airway; How and when to do rescue breathing; compression ventilation ratio

AED	What is an AED; Evidence on outcome; How to find an AED including smartphone apps; How and when to use an AED; Where to place AEDs?; role of drones in AED delivery. Intervals/timing; Compressions before defibrillation Fully automated AED; Safety of AEDs; AED signage; Limited information on in-hospital AED use; shaving the chest; pad size; emphasis on correct placement/positioning of pads
CPR quality measurement	Importance of measuring rate, depth, recoil, pauses for quality of care and outcome. Role of smart technology (phones/watches etc.)
Safety	Risk to lay responders (fatigue, risk of defibrillation, disease transmission, psychological); Risk to person receiving CPR (persons in arrest and persons NOT in arrest); welfare of responders; welfare of bystanders; ethical challenges.
Foreign body airway obstruction	Recognition and treatment, (both for responsive and unresponsive persons) including: Backslaps; Abdominal Thrusts; Chest compressions; Use of suction and other devices intended to manage airway obstruction
Extended scope for individuals with a duty to respond (firefighters, life guards etc)	Supraglottic airways Bag valve mask ventilation and ventilation feedback devices Mechanical CPR devices Vector change Naloxone
Low Resource Settings and Remote Areas	Advice (maybe good practice statement) on implementation, response and practice of BLS in lower-resource setting. Addresses the challenges and strategies of BLS in areas with limited resources or in remote areas.

Guideline title	**Chapter 5: Advanced Life Support (adults)**
Guideline objective	These European Resuscitation Council Advanced Life Support guidelines, are based on the 2025 International Consensus on Cardiopulmonary Resuscitation Science with Treatment Recommendations. This section provides guidelines on the prevention of and ALS treatments for both in-hospital cardiac arrest and out-of-hospital cardiac arrest. Adult advanced life support (ALS) includes the advanced interventions that follow basic life support (BLS) and use of an automated external defibrillator (AED). Adult BLS and AED use are addressed in Chapter 4. Basic life support continues during and overlaps with ALS interventions. This ALS section includes the prevention and treatment of both in-hospital cardiac arrest (IHCA) and out-of-hospital cardiac arrest cardiac arrest (OHCA), the ALS algorithm, manual defibrillation, airway management during cardiopulmonary resuscitation (CPR), drugs and their delivery during CPR, and the treatment of peri-arrest arrhythmias.
Intended audience	ALS providers
Setting	Any settings

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Writing group members	Jasmeet Soar (Chair), Bernd Böttiger, Pierre Carli, Keith Couper, Peter Paal, Claudio Sandroni, Joyce Yeung, Nikolaos Nikolaou, Tommaso Scquizzato, Francesc Carmona, Jacqueline Eleonora, Diana Cimpoesu, Markus B. Skrifvars, Mathias Holmberg, Helen Pocock, Sonia D'Arrigo, Francesca Verginella, Aurora Magliocca, Charles Deakin, Jerry Nolan

Section headings	**Key content / considerations**
Prevention of cardiac arrest	Prevention of in-hospital cardiac arrest Prevention of out-of-hospital cardiac arrest
Treatment of cardiac arrest	Treatment of in-hospital cardiac arrest [IHCA ALGORITHM] ALS considerations for out-of-hospital cardiac arrest including transport to cardiac arrest centres (overlap with systems) ALS ALGORITHM NEW 2025 – ALS Witnessed and closely monitored cardiac arrest in clinical settings (overlap with special circumstances) NEW 2025 – CPR induced consciousness
Defibrillation	Manual v AED Safe and effective defibrillation Energy levels and number of shocks Recurrent or refractory VF [including double shock] Paddles v pads NEW 2025 – Anticipatory charging Waveform guided defibrillation/monitoring during compressions Patients with ICDs
Airway and ventilation	Basic versus Advanced (SGAs v TT, DL v VL) Correct tube placement Optimal ventilation strategies/oxygen Ventilator v bag NEW 2025 – FONA [front of neck access]
Drugs and fluids	Parenteral access [IV, IO, IM] Vasopressor drugs [adrenaline, vasopressin, noradrenaline] Antiarrhythmic drugs [amiodarone, lidocaine, beta-blockers] Thrombolytic drugs Fluids (crystalloid, colloid, blood/blood products) Other drugs (steroids, calcium, magnesium, bicarbonate, atropine)
Monitoring and investigations during ALS	Waveform capnography during advanced life support Use of ultrasound imaging during advanced life support NEW 2025 – Physiology guided CPR (including continuous arterial BP) NEW 2025 – Brain monitoring (NIRS, EEG)
Devices	Mechanical chest compression devices ITD

	NEW 2025 –Head-up CPR (overlap BLS) NEW 2025 – ventilators - synchronised compressions] NEW 2025 –REBOA NEW 2025 – Intra-arrest cooling (overlap post resuscitation care)
ECPR	ECPR align with ERC/Euro ELSO/ESICM guideline
Peri-arrest arrhythmias	Tachycardia [+ ALGORITHM] Bradycardia [+ ALGORITHM]
Organ donation	'Uncontrolled' organ donation after circulatory death
Debriefing	Debriefing (overlap topic systems)
Duration of ALS/Termination of Resuscitation	When to stop ALS
Low Resource Settings and Remote Areas	Advice (maybe good practice statement) on implementation, response and practice of ALS in lower-resource setting. Addresses the challenges and strategies of ALS in areas with limited resources or in remote areas.

Guideline title	**Chapter 6: Paediatric Life Support (basic and advanced)**
Guideline objective	To provide evidence-based GL for management of children in cardiac arrest and in critical conditions
Intended audience	Bystanders, parents and other carers, health care professionals at different levels of care (EMS, emergency departments, paediatric wards, paediatric ICUs, post-discharge care physicians etc.), hospital and EMS management, government structures
Setting	In-field, out-of-hospital, in-hospital, post-cardiac arrest care
Writing group members	Jana Djakow, Dominique Biarent (co-chair), Nieves de Lucas, Abel Martinez Mejias, Nigel Turner, Olivier Brissaud, Kasper Glerup Lauridsen, Corinne Buysse, Francesco Cardona, Jimena Del Castillo, Panu Kiviranta, Inge Roggen, Sophie Skellett, Franziska Markel Wagner

Section headings	**Key content / considerations**
Recognition and management of critically ill children	Assessment of the seriously ill or injured child
	Management of the seriously ill or injured child
	Management of respiratory failure: general approach (AB)
	Management of status asthmaticus
	Management of anaphylaxis
	Management of circulatory failure [C]
	Management of neurological and other medical emergencies [D] [E]
	Status epilepticus
	Hypoglycaemia
	Hypokalaemia and Hyperkalaemia

	Hyperthermia
Paediatric basic life support	Sequence of actions in PBLS
	Rescuers only trained in adult BLS
	Untrained lay rescuers
	Use of an automated external defibrillator (AED)
	PBLS in case of traumatic cardiac arrest (TCA)
	Recovery position
	Paediatric foreign body airway obstruction (FBAO)
Paediatric advanced life support	Sequence of actions in PALS
	Defibrillation during paediatric PALS
	Oxygenation and ventilation during PALS
	Measurable factors during PALS
	Special circumstances and reversible causes in PALS
	Traumatic cardiac arrest (TCA)
	Hypothermic arrest
	Extracorporeal life support
Post resuscitation care and post-discharge care for paediatric patients after CA and their families	
Low Resource Settings and Remote Areas	Advice (maybe good practice statement) on implementation, response and practice of PLS in lower-resource setting. Addresses the challenges and strategies of PLS in areas with limited resources or in remote areas.

Guideline title	**Chapter 7: Neonatal Life Support**
Guideline objective	To provide evidence informed guidance for the assessment of, and management of babies of any gestation at birth who require either resuscitation, or help with transition.
Intended audience	Any health professional who may be involved with the management of babies at birth
Setting	Anywhere a baby may be born including hospital and community settings
Writing group members	Marije Hogeveen, John Madar (co-chair), Charles Christoph Roehr, Mario Rüdiger, Tomas Szczapa, Arjan Te Pas, Daniele Trevisanuto, Dominic Wilkinson, Vix Monnelly, Mathijs Binkhorst Jonathan Cusack, Eva Schwindt, Michael Wagner, Joe Fawke, Darjan Kardum, Anne Lee Solevåg

Section headings	**Key content / considerations**
Introduction	
Algorithm	Algorithmic approach to resuscitation.
Epidemiology	Need for resuscitation and interventions.

Education	Methods of training in resuscitation.
Preparation, Briefing Human Factors	Difference between home deliveries and hospital (including risks). Equipment, environment and personnel to successfully resuscitate babies, non-technical skills (Human factors)
Thermal control	Hypo/hyperthermia, optimal methods of keeping warm and measuring temperature.
Cord clamping	Which babies benefit from delayed cord clamping, optimal timing and methods, benefit/harms. Clamping vs milking.
Initial Actions and assessment	Stimulation and assessment of babies at birth including colour, tone, breathing, heart rate and how these help determine the approach adopted during resuscitation/stabilization.
Airway	Optimal position to establish and maintain an airway and Interventions to alleviate physiological and physical airway obstruction including suction. Interventions for aspiration, including the use of surfactant and/or lavage.
Breathing	Need for respiratory support; optimal timing, methods, sequence.
Airway adjuncts Assisted ventilation devices PEEP/CPAP	Airway adjuncts (e.g. oropharyngeal airway/nasal airway/supraglottic device/tracheal tube), positive pressure respiratory support (e.g. Self-inflating bag/Flow-inflating bag/T-piece), indications and methods for positive pressure (PEEP/CPAP) (e.g. Face Mask/Nasal Prong)
Air/oxygen	Use of supplemental oxygen and the differences between preterm and term babies.
Monitoring	Monitoring including saturation, ECG, end tidal CO2 and flow/volume monitoring.
Cardiac Compression	Indications and methods for providing circulatory support through cardiac compressions, ratios between compression and ventilation, determining an effective response, continuous or synchronized after intubation.
Vascular access	Indications, optimal methods for securing vascular access (e.g. umbilical vein, intraosseous needle)
Drugs & Fluids	Indications for drugs used during resuscitation including adrenaline, bicarbonate, fluids, blood and glucose.
Special Circumstances	Condition specific guidance for managing transition in identified conditions e.g. surgical abnormalities, cardiac problems
Discontinuing/ Withholding	Withholding and/or discontinuation of resuscitation.
Post resuscitation care Prognosis	Post resuscitation care including glucose management and the use of therapeutic hypothermia.
Parent communication Debriefing	Management of and communications with parents and relatives. Managing the team and any debriefing following resuscitation.
Ethics	The ethical dimensions surrounding resuscitation of the new-born.

Low Resource Settings and Remote Areas	Advice (maybe good practice statement) on implementation, response and practice of NLS in lower-resource setting. Addresses the challenges and strategies of NLS in areas with limited resources or in remote areas.

Guideline title	**Chapter 8: Special Circumstances in Resuscitation**
Guideline objective	To provide guidance and recent evidence on the management of patients being at risk or suffering from cardiac arrest under special circumstances. To describe and explain deviations from the standard algorithms
Intended audience	Healthcare professionals, stakeholders
Setting	Out of hospital cardiac arrest In hospital cardiac arrest
Writing group members	Carsten Lott, Charles Deakin (co-chair), Anatolij Truhlář, Annette Alfonzo, Violeta Gonzalez-Salvado, Peter Paal, Karl Thies, Natasa Spartinou, Robert Greif, Bibiana Metelmann, Camilla Metelmann, David Peran, Vlasios Karageorgos, Cristian Abelairas-Gomez, Andrea Scapigliati, Tim Meyer, Matthias Fischer, Joost Bierens, Guillaume Debaty

Section headings	**Key content / considerations**
Trauma	Differences in TCA, role of chest compressions, HOT principles
Anaphylaxis	Management and prevention of CA, Based on existing and updated guidelines
Electrolytic Disorders	Update on management of CA in electrolyte disorders, Hyperkalaemia and all relevant electrolytic disorders
Hypothermia	Management of CA in hypothermic pts., Avalanche, drowning, ECMO, low resource/remote & urban areas
Hyperthermia	Management of CA pts in hyperthermia, include hyperthermic syndromes: malignant hyperthermia (not a focus), malignant neuroleptic & serotoninergic syndromes
Asthma, COPD	Management and prevention of CA, Based on existing and updated guidelines
Toxic agents	Management and prevention of CA due to toxic agents, antidotes, elimination, removal
Thrombosis	Management of pts in CA caused by pulmonary Embolism & Coronary thrombosis
Cardiac arrest in OR	Specific problems in General surgery (+laparoscopic/robotic), Prone position, Cath Lab, Cardiac surgery, LVAD/BIVAD patients, Local Anaesthetic Toxicity Syndrome
Dialysis	Differences in management of CA pts during dialysis, prevention and follow up
Pregnancy	Management of CA in pregnancy, amniotic embolism

Obesity	Relevant additional problems in obese CA patients
EMS transport + Inflight emergencies	Management of CA during EMS transportation and inflight
Sports	Management of CA in sports, include football awareness programs
Drowning and Water rescue	Management of CA in drowning pts, based on ILCOR statement
ECPR, Mechanical chest compressions	ELSO-ERC collaboration
Low Resource Settings and Remote Areas	These are special circumstances per se. Advice (maybe good practice statement) on implementation, response and practice in lower-resource setting. Addresses the challenges and strategies in areas with limited resources or in remote areas.

Guideline title	**Chapter 9: Post Resuscitation Care**
Guideline objective	This section of the guidelines is a collaboration between the European Resuscitation Council and the European Society of Intensive Care Medicine. It will provide recommendations for the treatment of the cardiac arrest patient after return of spontaneous circulation has been achieved. It will include some aspects of treatment out of hospital but the main focus is on in-hospital management. It will include investigations and diagnosis of the cause of cardiac arrest and all aspects of the intensive care management of the post-cardiac arrest patient (temperature control, blood pressure targets, oxygenation and ventilation targets, and temperature control). The approach to prognostication will be discussed, as will rehabilitation, organ donation, long-term outcomes and investigation of sudden cardiac death.
Intended audience	All clinicians who treat post-cardiac arrest patients
Setting	Any setting after return of spontaneous circulation
Writing group members	Jerry Nolan, Claudio Sandroni, Alain Cariou, Tobias Cronberg, Sonia D'Arrigo, Kirstie Haywood, Astrid Hoedemaekers, Gisela Lilja, Nikolaos Nikolaou, Theresa Olasveengen, Chiara Robba, Markus B. Skrifvars, Jas Soar

Section headings	**Key content / considerations**
Post-cardiac arrest syndrome	Will draw on material from the recent ILCOR brain injury review
Diagnosis of cause of cardiac arrest	To included relevant investigations – including pan CT
Airway and breathing	Oxygenation and ventilation targets
Circulation	To include PCI, BP targets etc.
Disability	To include temperature control and control of seizures

General Intensive Care Management	Nutrition, infection control etc.
Prognostication	Including all aspects of multimodal approach
Withdrawal of life-sustaining therapy	Timing and indications. Will link with ethics section
Long-term outcomes	All aspects of long-term outcome including societal participation
Rehabilitation	Latest evidence for impact of rehabilitation programs
Organ donation	Will draw on some of the ILCOR Organ Donation paper
Investigating sudden unexplained cardiac arrest	This will be expanded from the 2021 guidelines to include latest recommendations
Cardiac arrest centres	Although this is covered in systems we will have a short section to link to that chapter.
Low Resource Settings and Remote Areas	Advice (maybe good practice statement) on implementation, response and practice of post-resuscitation care in lower-resource setting. Addresses the challenges and strategies of post-resuscitation care in areas with limited resources or in remote areas.

Guideline title	**Chapter 10: Education of Resuscitation**
Guideline objective	This chapter delineates the multifaceted aspects of resuscitation education, addressing varied target groups and providers, and encompassing a spectrum of methodologies from traditional to technology-enhanced techniques. It underscores the significance of tailored educational strategies to enhance the quality of resuscitation outcomes, integrating simulation, faculty development, assessment, and feedback mechanisms. The chapter also highlights existing research gaps, setting a roadmap for future investigations in resuscitation education.
Intended audience	Instructors, educators, course centres, healthcare professionals, stakeholders,
Setting	Instruction, training, education (basic to advanced life support)
Writing group members	Sabine Nabecker, Timo de Raad (co-chair), Patricia Conaghan, Joyce Yeung, Lucas Pflanzl-Knizacek, Jan Breckwoldt, Sebastian Schnaubelt, Cristian Abelairas-Gomez, Barbara Farquharson, Kevin Mackie, Olfa Chakroun, Silvija Hunyadi-Anticevic, Carsten Lott, Andrew Lockey, Robert Greif

Section headings	**Key content / considerations**
Introduction	The medical educational foundation to teach and learn resuscitation: expanding the GL2021 with new evidence.
Resuscitation education for different target groups:	Explores resuscitation training's nuances across different demographics, focusing on unique challenges in low-income regions, disparities in education, the EMS's role, specialized BLS

	training for high-risk groups, and the impact of team-based CPR training on patient outcomes.
Resuscitation education tailored for different providers	Discusses the customization of resuscitation education, its prevalence, and the necessity for mandatory programs. It covers diverse sectors, including water rescue, in-hospital cardiac arrest responses, and specialized training for dental professionals.
High-quality resuscitation skill development	Examines comprehensive approaches to resuscitation education, emphasizing the role and importance of feedback devices, varied instructional methodologies, and the integration of spaced and blended learning for skill mastery.
Technology-enhanced resuscitation education	Investigates the role of innovative technologies in resuscitation education, including immersive simulations, gamification, and cognitive aids to enhance learning outcomes and provider readiness.
Simulation-based resuscitation training	Details the application of in-situ and high-fidelity simulations in resuscitation training, highlighting their effectiveness in replicating real-world scenarios and enhancing procedural proficiency.
Faculty development to improve education for resuscitation	Addresses the development of resuscitation instructors, focusing on managing provider workload, and stress, and fostering team competencies to improve training quality.
Impact of resuscitation education on clinical outcomes	Reviews evidence linking resuscitation education to improved patient outcomes, including the role of family presence during adult resuscitation, the establishment of cardiac arrest centres, and public willingness to perform CPR.
Debriefing and feedback in resuscitation education	Emphasizes the importance of structured debriefing and feedback, comparing different approaches and their effectiveness in reinforcing learning and improving resuscitation performance.
Assessment strategies for resuscitation competences	Summarizes the current literature on assessment methods within resuscitation training programs, providing insights into effective evaluation practices and future directions. (conclave results or outlook on conclave results)
Research in education and gaps and future directions in educational research.	Based upon upcoming ILCOR statement on Educational Outcomes
Low Resource Settings and Remote Areas	Advice (maybe good educational statement) on implementation, response and practice of education resuscitation in lower-resource setting. Addresses the challenges and strategies of education in areas with limited resources or in remote areas.

Guideline title	**Chapter 11: Ethics in Resuscitation**

Guideline objective	To provide evidence-based guidance for members of the public and healthcare professionals on ethical aspects of resuscitation and end of life decisions in adults and children.
Intended audience	Laypersons, healthcare professionals, other stakeholders
Setting	All settings
Writing group members	Violetta Raffay, Johannes Wittig (co-chair), Spyros D. Mentzelopoulos, Jana Djakow, Patrick Van de Voorde, Ileana Lulic, Angel Estella Garcia, Leo Bossaert, Therese Djärv, Kasper Glerup Lauridsen, Koen Monsieurs

Section headings	**Key content / considerations**
Advance directives and advance care planning - DNACPR/DNR	OHCA, IHCA, Paediatrics
When to stop/when to transport	OHCA, IHCA, Paediatrics
When and how to involve family/relatives/other in (shared) decision making	OHCA, IHCA, Paediatrics (diversity throughout Europe: law, religion, organisation, socio-economics)
Patient and family representatives	TBD (e.g., official representatives of organisations, societies, clubs, etc.)
Ethical challenges of bystanders and first responders involvement	Bystanders: Good Samaritan law; possible psychological consequences Ethical considerations for first responders
Research	Interventional and non-interventional research (all settings):
Education/Systems	Narrative review-based, updated guidance concerning patient outcomes, education and system organisation
Low Resource Settings and Remote Areas	Advice (maybe good practice statement) on implementation, response and practice of ethics in resuscitation in lower-resource setting. Addresses the challenges and strategies of ethics in areas with limited resources or in remote areas.

Guideline title	**Chapter 12: First Aid**
Guideline objective	To provide practical hands-on advice based on science on life-threatening conditions that might lead to a cardiac arrest if first aid is not done or on time-critical conditions where first aid can reduce severe morbidity
Intended audience	1. Trained first aiders (lifeguards, ski patrol etc.- their main task is to solve these kind of problems but without medical education)

	2. First aid on duty (teachers, security staff etc. where the society expect them to act but not their main task) 3. First aiders on scene (anyone)
Setting	European, out-of-hospital
Writing group members	Therese Djärv, Jessica Rogers (co-chair), David Zideman, Pascal Cassan, Diana Cimpoesu, Barry Klaassen, Daniel Meyran, Eunice Singletary, Adam Mellett-Smith, Jorien Laermans, Sander van Goor, Kaushila Thilakasiri, Federico Semeraro

Section headings	**Key content / considerations**
Definition of first aid	Differentiate first aid into trained first aiders, first aid on duty, first aiders on scene
Being a first aider	Legal aspects and common reactions/feelings about doing harm, meeting a person appearing dead and its relatives
Mental health crisis	First aid when a person has suicide thoughts or in a suspected suicide attempt
Drowning	Initial actions in water and on land incl. rescue breaths and CPR
Prevention	• Pre-syncope and Counter-Pressure Manoeuvres • Recognition of stroke • Recovery position and position of victims in shock • Prevention of hypothermia • Recognition of concussion
Medical emergencies	• Airway foreign body, initial actions such as back blows, abdominal thrusts and when to call for help • Anaphylaxis, recognition and initial treatment with adrenaline (epinephrine) • Use of supplemental oxygen and pulse oximetry in dyspnoea, stroke and known COPD • Bronchodilator administration for asthma (incl. harm of) • Chest pain/symptoms of arrhythmias incl. initial treatment with aspirin • Management of hypoglycaemia • Intoxication incl. treatment with nasal naloxone • Management of heat stroke/hyperthermia by cooling • Snake bite- (only European once needing antidote)
Trauma emergencies	• Control of life-threatening bleeding with pressure bandage, haemostatic agents, and tourniquets • Basic airway manoeuvres- jaw thrust • Cervical spine motion restriction (for trained first aiders) • Management of open chest wounds • Cooling of thermal burns • Eye injury from chemical exposure • Preservation of amputated body part

Low Resource Settings and Remote Areas	Advice (maybe good practice statement) on implementation, response and practice of FA in lower-resource setting. Addresses the challenges and strategies of FA in areas with limited resources or in remote areas.