Puls.at

Gemeinsam gegen den plötzlichen Herztod

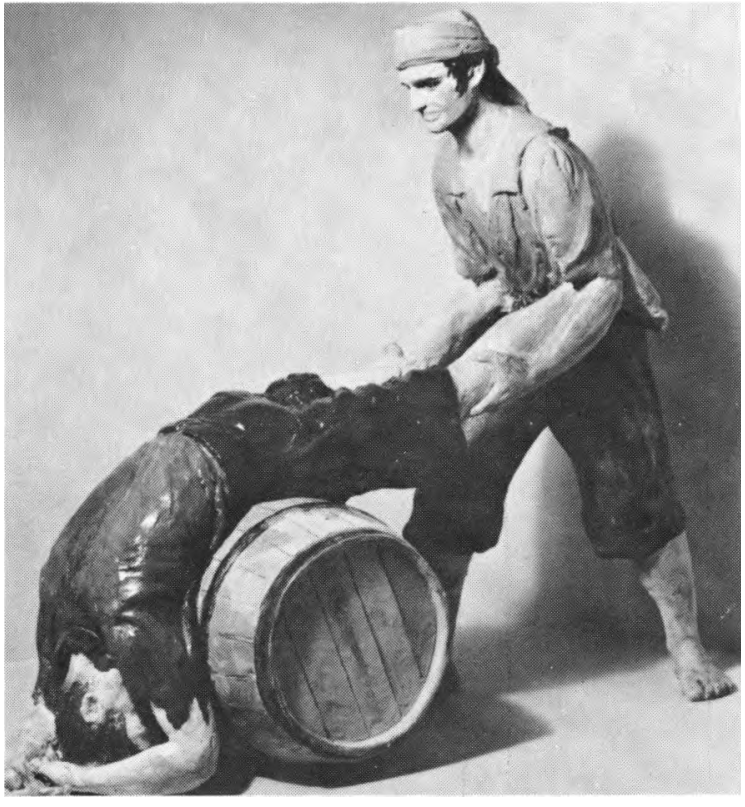
Wie entstehen Guidelines?

Der Leitlinienprozess

Matthias Müller, 29.03.2021

Reanimation ohne Guidelines...

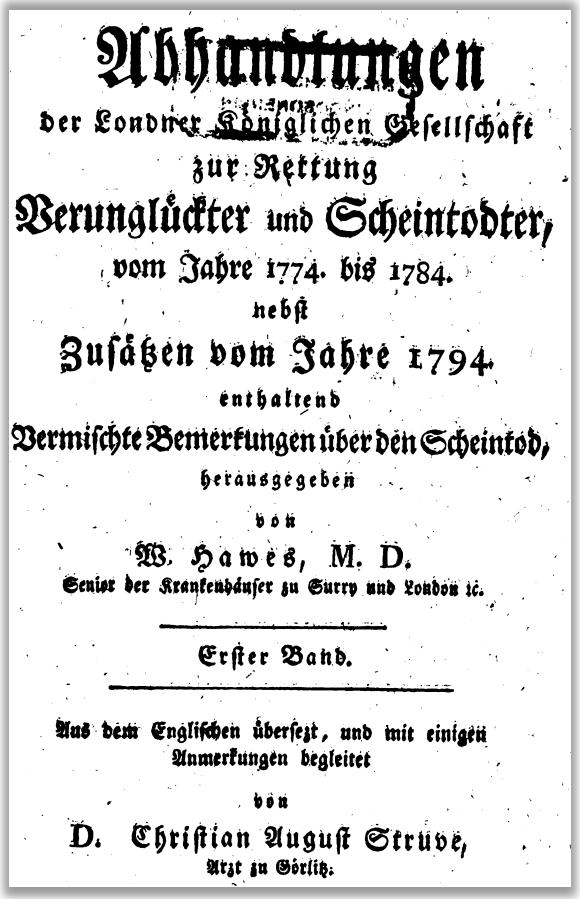
Reanimation ohne Guidelines...



Reanimation ohne Guidelines...

Guidelines ohne Evidenz...

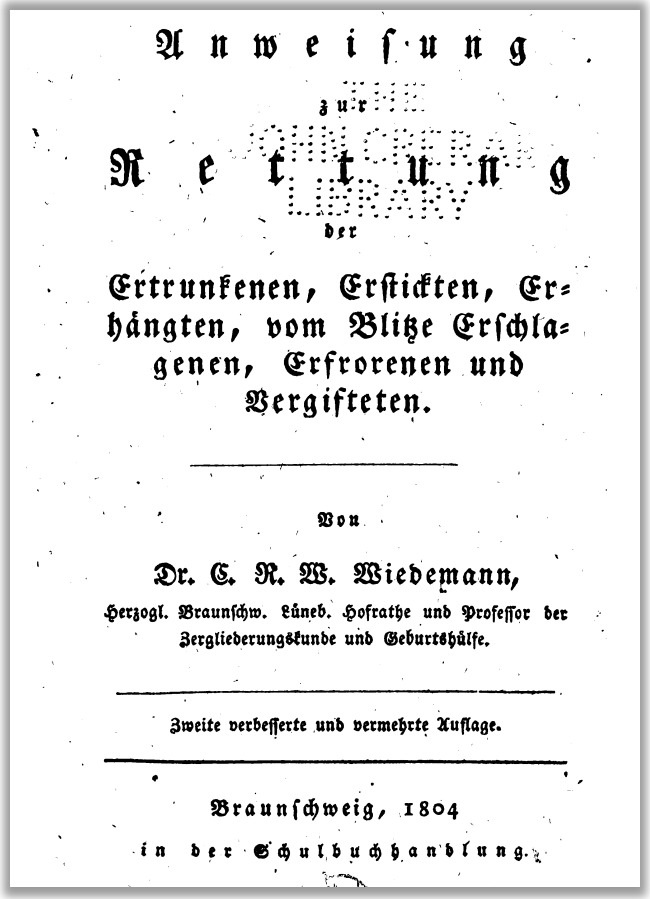
Puls.at



Abhandlungen
der Londner Königlichen Gesellschaft
zur Rettung
Verunglückter und Scheintodter,
vom Jahre 1774. bis 1784.
nebst
Zusätzen vom Jahre 1794.
enthaltend
Vermischte Bemerkungen über den Scheintod,
herausgegeben
von
W. Hawes, M. D.
Senior der Krankenhäuser zu Surry und London ꝛc.

Erster Band.

Aus dem Englischen übersezt, und mit einigen Anmerkungen begleitet
von
D. Christian August Struve,
Arzt zu Görlitz.



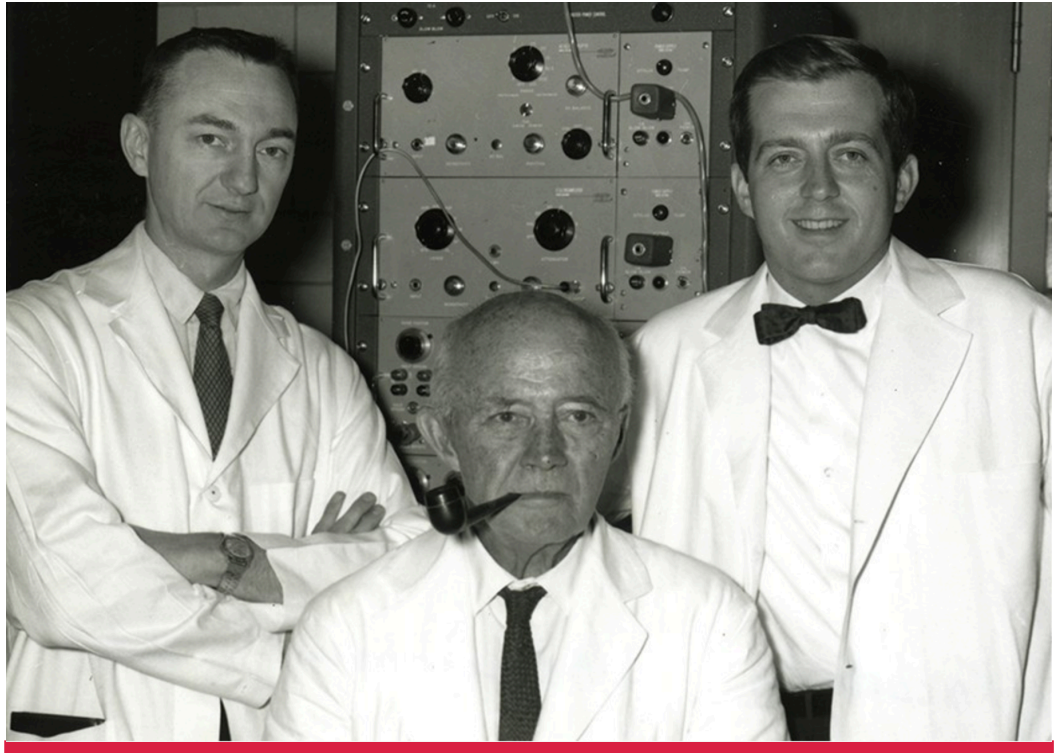
Anweisung
zur
Rettung
der
Ertrunkenen, Erstickten, Erhängten, vom Blitze Erschlagenen, Erfrorenen und Vergifteten.

Von
Dr. C. R. W. Wiedemann,
Herzogl. Braunschw. Lüneb. Hofrathe und Professor der Zergliederungskunde und Geburtshülfe.

Zweite verbesserte und vermehrte Auflage.

Braunschweig, 1804
in der Schulbuchhandlung.

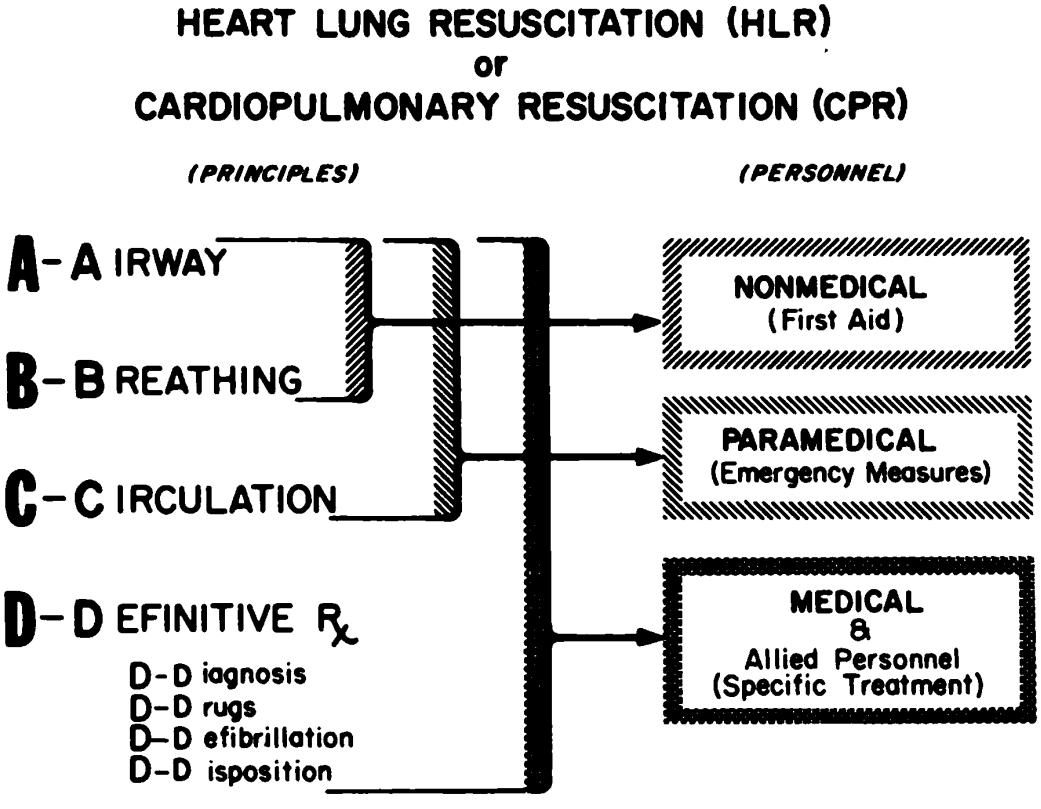
50er Jahre: Erste Evidenz



J. Jude, W. Kouwenhoven, G. Knickerbocker

P. Safar

Das ABC der Reanimation



Safar P, Brown TC et al. JAMA 1961

1966: Die ersten Reanimationsguidelines

Puls.at

Special Contribution

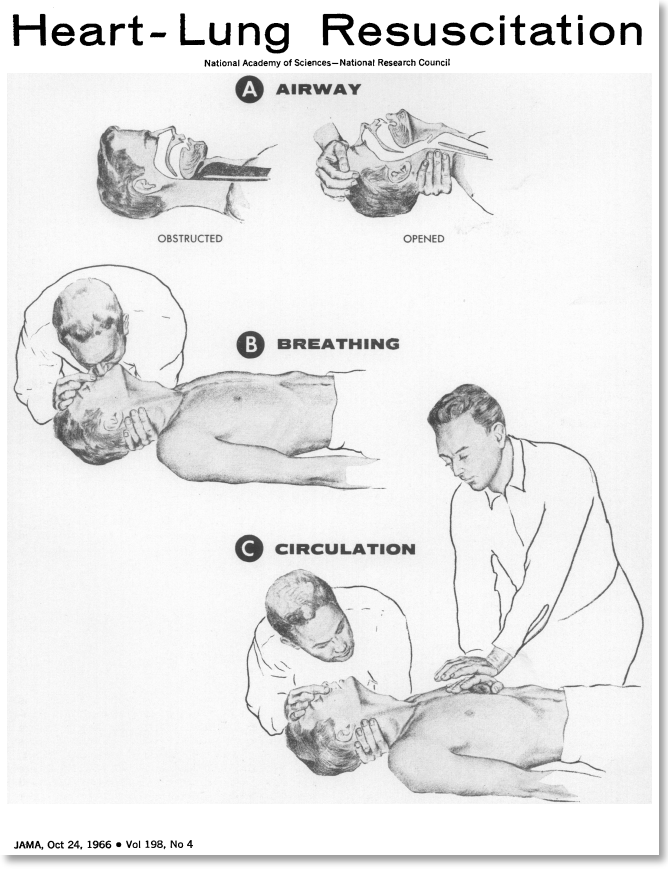
Cardiopulmonary Resuscitation

Statement by the Ad Hoc Committee on Cardiopulmonary Resuscitation of the Division of Medical Sciences, National Academy of Sciences–National Research Council

In May 1966, the work of an ad hoc Committee on Cardiopulmonary Resuscitation culminated in a Conference on Cardiopulmonary Resuscitation at the National Academy of Sciences-National Research Council (NAS-NRC). This study was undertaken in response to inquiries

In an editorial in *Circulation* in September 1962,[1] closed-chest cardiopulmonary resuscitation was endorsed as a *medical* procedure. Subsequently, the method was reclassified as an *emergency* procedure in a second editorial in *Circulation* in May 1965.[2]

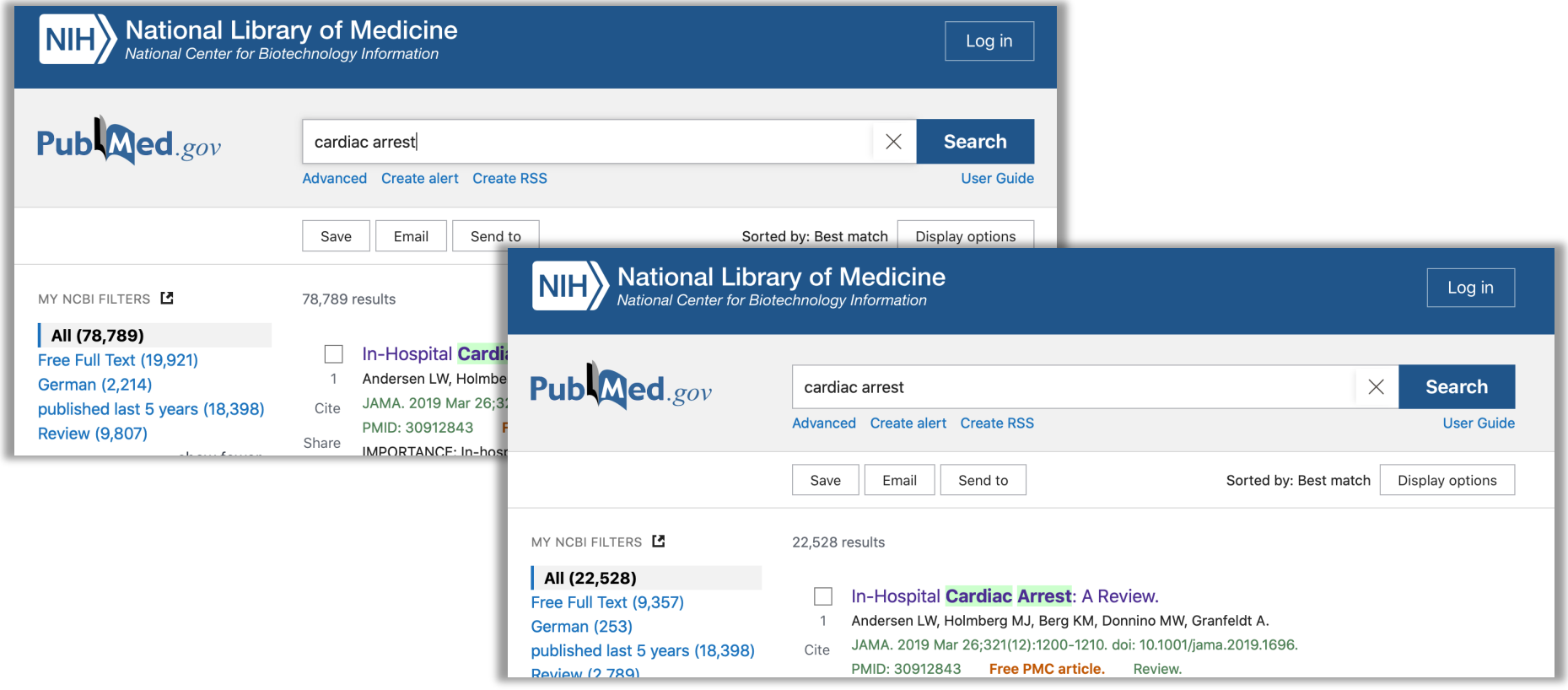
7 Seiten, 2 Referenzen, 1 Grafik



Wozu eigentlich Guidelines?

Pubmed-Suche: „Cardiac arrest“

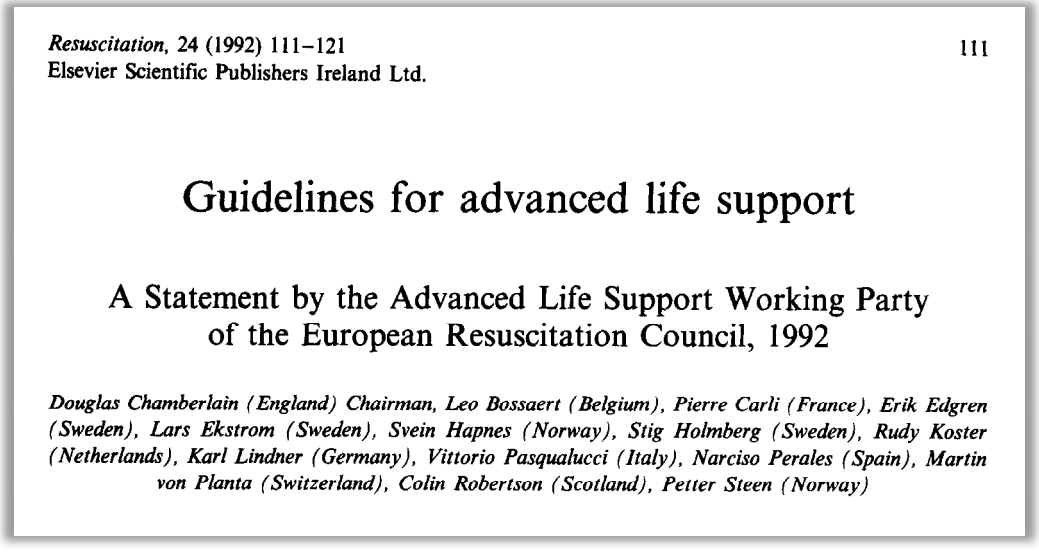
Puls.at



Die Lösung: Fachgesellschaften

Puls.at

EUROPEAN RESUSCITATION COUNCIL



Resuscitation, 24 (1992) 111–121
Elsevier Scientific Publishers Ireland Ltd.

111

Guidelines for advanced life support

A Statement by the Advanced Life Support Working Party of the European Resuscitation Council, 1992

Douglas Chamberlain (England) Chairman, Leo Bossaert (Belgium), Pierre Carli (France), Erik Edgren (Sweden), Lars Ekstrom (Sweden), Svein Hapnes (Norway), Stig Holmberg (Sweden), Rudy Koster (Netherlands), Karl Lindner (Germany), Vittorio Pasqualucci (Italy), Narciso Perales (Spain), Martin von Planta (Switzerland), Colin Robertson (Scotland), Petter Steen (Norway)

American Heart Association®

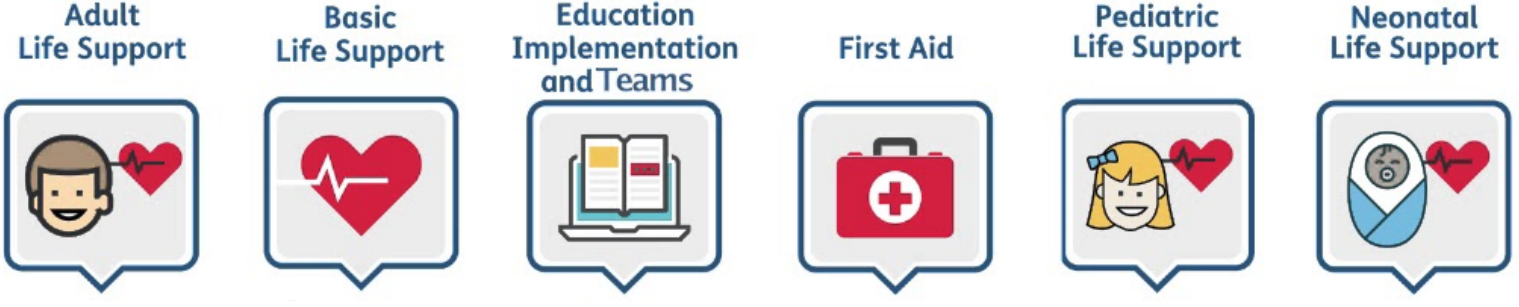
1992: International Liaison Committee on Resuscitation

Puls.at

ILCOR Task Forces

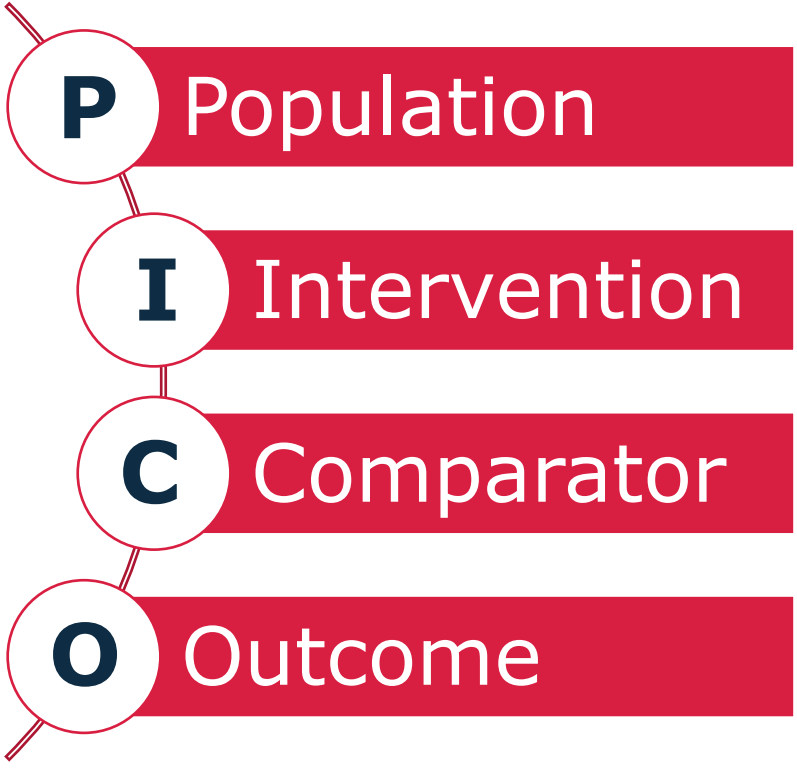
Puls.at

- Welche Fragen sind aktuell relevant?
- In welchen Bereichen gibt es neue Literatur?
- Wie ist diese Literatur zu bewerten?



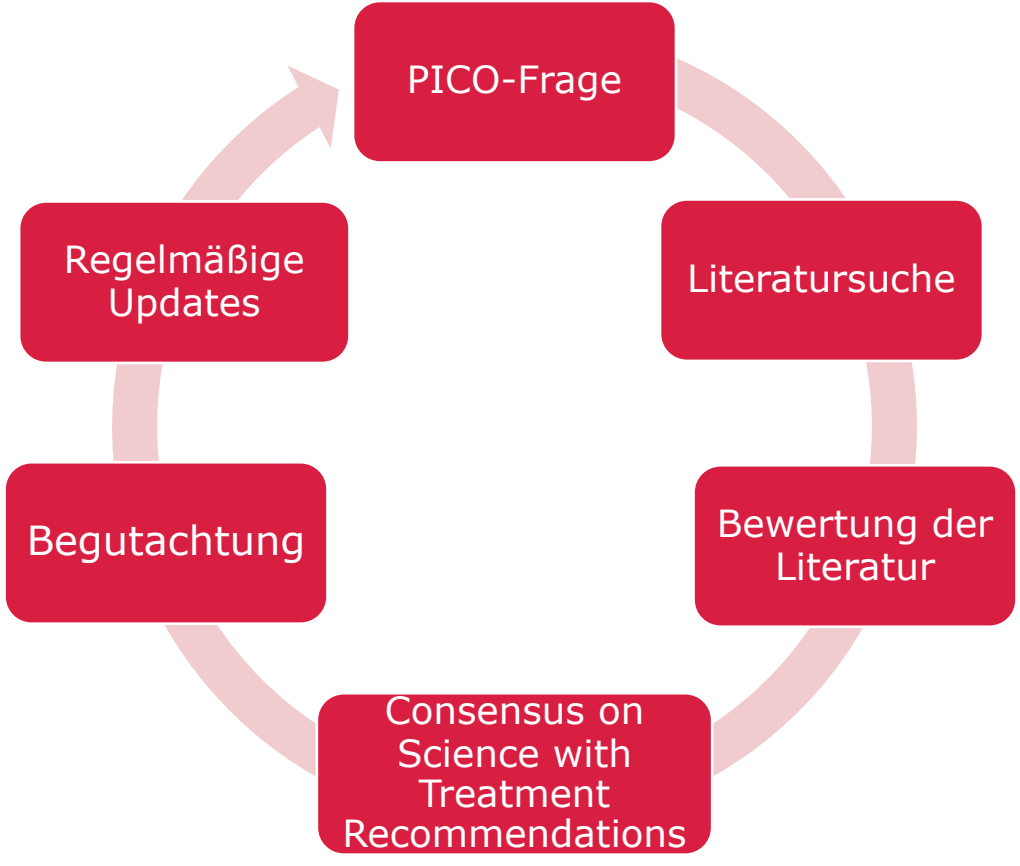
Von den Studien zur bestmöglichen Evidenz…

Puls.at



- **Führt bei PatientInnen mit präklinischem Kreislaufstillstand (P) Adrenalin (I) statt Kochsalzlösung (C) häufiger zu ROSC (O)?**

Von der PICO-Frage zur CoSTR



CoSTR 2020

Puls.at

Circulation
Volume 142, Issue 16_suppl_1, 20 October 2020, Pages S92-S139
https://doi.org/10.1161/CIR.0000000000000893

American Heart Association.

2020 INTERNATIONAL CONSENSUS ON CARDIOPULMONARY
R
W

184 strukturierte Reviews zu Fragestellungen der Reanimation

A
C

Emergency Cardiovascular Care Science With Treatment Recommendations

Katherine M. Berg, MD, Jasmeet Soar, MA, MB, BChir, Lars W. Andersen, MD, MPH, PhD, DMSc, Bernd W. Böttiger, MD, ML, DEAA, Sofia Cacciola, MD, Clifton W. Callaway,

ERC Writing groups

Puls.at

ERC Writing groups

Puls.at

Gewissheit und Empfehlungsgrad

Puls.at

- **GRADE der Gewissheit**
  - High
  - Moderate
  - Low
  - Very low
- **Empfehlungsgrad**
  - Stark: „we recommend“
  - Schwach: „we suggest“

chest compressions. Although the delivery of continuous chest compressions during face-mask ventilation was previously thought to increase the risk of regurgitation, a trial of continuous versus interrupted chest compressions during CPR (CCC Trial) that enrolled more than 23,000 patients showed no statistically significant difference in survival to discharge.[249] ILCOR has subsequently recommended that when using bag mask, EMS providers perform CPR either using a 30:2 compression-ventilation ratio (pausing chest compressions for ventilation) or continuous chest compressions without pausing while delivering positive pressure ventilation (strong recommendation, high-quality evidence).[250] In Europe, the most

Vom Draft zu den fertigen Guidelines

Puls.at

RESUS 8895 No. of Pages 60

ARTICLE IN PRESS

RESUSCITATION XXX (2021) XXX –XXX

Available online at www.sciencedirect.com

Resuscitation

journal homepage: www.elsevier.com/locate/resuscitation

ELSEVIER

EUROPEAN RESUSCITATION COUNCIL

European Resuscitation Council Guidelines 2021: Executive summary

Gavin D. Perkins[a,b,], Jan-Thorsen Graesner[c], Federico Semeraro[d], Theresa Olasveengen[e], Jasmeet Soar[f], Carsten Lott[g], Patrick Van de Voorde[h,i], John Madar[j], David Zideman[k], Spyridon Mentzelopoulos[l], Leo Bossaert[m], Robert Greif[n,o], Koen Monsieurs[p], Hildigunnur Svavarsdóttir[q,r], Jerry P. Nolan[a,s], on behalf of the European Resuscitation Council Guideline Collaborators[1]*

[a] *Warwick Clinical Trials Unit, Warwick Medical School, University of Warwick, Coventry CV4 7AL, UK*

[b] *University Hospitals Birmingham, Birmingham, B9 5SS, UK*

...ein Beispiel

Consensus on Science with Treatment Recommendations (CoSTR)

Puls.at

Consensus on Science with Treatment Recommendations (CoSTR)

Puls.at

PICOST

The PICOST (Population, I

Population: Adults in any

Intervention: Placement c
arrest.

Comparators: Placement
arrest.

Outcomes: Return of spor
with a favorable neurologi

Study Designs: Randomiz
and case-control studies) c
assessing the effect of spe
administration will also be
comments, letters to the e

Timeframe: All years and
studies (e.g., conference ab
2019.

Prospero Registration: CR

Consensus on Science

For the important outcome of return of spontaneous circulation, we have identified very low certainty evidence
(downgraded for r
588; Mody 2019
the use of IO acce
risk difference: -6
circulation with IO

For the critical ou
(downgraded for r
588; Mody 2019
the use of IO acce
risk difference: -1
with IO access co

For the critical ou
identified very lov
studies (Kawano 2
quality of evidence
meta-analysis was

Treatme

We suggest IV acc
arrest (weak reco

If attempts at IV access are unsuccessful or IV access is not feasible, we suggest IO access as a route for drug administration during adult cardiac arrest (weak recommendation, very low-certainty evidence).

Justification and Evidence to Decision Framework Highlights

Although the overall certainty in the evidence is very low, the current evidence suggests that outcomes might be better when drugs are administered intravenously as compared to intraosseously.

Current guidelines suggest that IO access should only be used if IV access is "difficult or impossible" (Soar 2015 110) or "not readily available" (Link 2015 S459). There is no new evidence to support a change to these guidelines.

Knowledge Gaps

- There are no randomized clinical trials that directly compare IO vs. IV drug administration during cardiac arrest.
- There are no randomized clinical trials that directly compare the different sites of IO access (e.g. tibial, humeral) during cardiac arrest.
- It is unclear whether the effectiveness of an IO access is dependent on the drug administered (e.g. epinephrine vs. amiodarone/lidocaine), the dose, or the volume of injection and flush.

Guideline writing groups – Scope documents

Puls.at

EUROPEAN RESUSCITATION COUNCIL

Guidelines 2020

Guideline title	Chapter 5: Adult advanced life support
Guideline objective	Provide evidence informed ALS guidance for healthcare professionals
Intended audience	All those involved in ALS
Setting	All settings
Writing group members	Jasmeet Soar (Chair), Bernd Böttiger, Pierre Carli, Keith Couper, Charles Deakin, Therese Djärv, Carsten Lott, Jerry Nolan, Theresa Olasveengen, Peter Paal, Thomas Pellis, Gavin Perkins, Claudio Sandroni

Section headings	Key content / considerations
Prevention of cardiac arrest In-hospital	Rapid response systems, early warning scores.
Prevention of cardiac arrest Out-of-hospital	Focus on premonitory signs and symptoms as opposed to screening for sudden cardiac death. Overlap with BLS and dispatch
Pre-hospital cardiac arrest	Includes, prehospital cardiac arrest care bundles, TOR rules (overlap with Ethics), transportation modes. Transport to cardiac arrest centres (overlap with post-resuscitation care).
In-hospital cardiac arrest	Starting CPR in-hospital and clinical settings, manual defibrillator v AED.
ALS treatment algorithm	Includes ECPR (ECMO, ECLS), mechanical CPR, monitoring during CPR, capnography, Ultrasound, Refractory VF options, debriefing of teams, High quality CPR, Awakening/awareness during CPR, 'pseudo-PEA'. Link to training and education section and human factors.
Defibrillation	Manual defibrillation, defibrillation strategies, double sequence defibrillation, safety, timing, pad placement, waveforms and energies
Airway	Basic versus advanced airways
Drugs and Fluids	Includes IV v IO, vasopressors, antiarrhythmics, thrombolytic drugs.
Peri-arrest arrhythmias	Limit to immediate post arrest/pre-arrest period. Link with existing cardiology guidelines and ERC Post resuscitation care guidelines
Organ donation	– uncontrolled donation after circulatory death

Nix is‘ fix – der Guidelineprozess ist öffentlich! ♥ Puls.at

EUROPEAN RESUSCITATION COUNCIL

Guidelines 2020

Guideline title	Chapter 5: Adult advanced life support
Guideline objective	Provide evidence informed ALS guidance fo… professionals
Intended audience	All those involved i…
Setting	All setti…
Writing group members	

Section heading
Prevention of … arrest In-hospital
Prevention of ca… arrest Out-of-hospi…

Pre-hospital cardia… arrest	…ules …e). …illator …uring …fing …n
	…mbolytic
	…est/pre-arrest period. …g cardiology guidelines and ERC Post …scitation care guidelines
	– uncontrolled donation after circulatory death

Guidelines Scope Documents Open For Public Comment

MAY 16, 2019

In 2020, ERC is publishing a new version of its Guidelines. These guidelines provide specific instructions for how resuscitation should be practiced and take into account ease of teaching and learning, as well as the science.

Our writing groups are already hard at work to produce these guidelines and have created scope documents for each of the chapters. In the scope documents, every writing group has outlined the objective of their chapter and the topics they will address. These documents are now available for public comment over at our Guidelines website.

We very much appreciate your input in making the 2020 Guidelines the best product they can be!

Read the scope documents at our Guidelines website and share your thoughts with us in this survey. Commenting is possible until 6 June 2019.

EUROPEAN RESUSCITATION COUNCIL

Guidelines 2020

Guideline title	**Chapter 6: Special circumstances**
Guideline objective	To provide evidence informed guidance for healthcare professionals on modifications to advanced life support in special circumstances
Intended audience	All those involved in resuscitation in special circumstances
Setting	Defined in relevant sections
Writing group members	Carsten Lott (chair), Anatolij Truhlář, Annette Alfonzo, Alessandro Barelli, Violeta Gonzalez-Salvado, Jochen Hinkelbein, Jerry Nolan, Peter Paal, Gavin D Perkins, Jas Soar, Karl Thies, Joyce Yeung, David Zideman

Section headings	**Key content / considerations**
Hypoxia	Pathophysiology and causes of asphyxial cardiac arrest, treatment and outcome
Hypovolaemia Traumatic cardiac arrest (TCA)	To cover all aspects of TCA (blood loss, tension pneumothorax, asphyxia, tamponade), priorisation of interventions, role of chest compressions,role of sonography, when to start and stop CPR, peri

Vom Scope zum Draft – oder auch nicht

Puls.at

	BLS, ALS, training
Cruise ships	Environmental and management decisions, required modifications to BLS, ALS, Training
Space	Microgravity implications, rpidemiology, histo environmental/management factors,required ALS, training, consequences
Cardiac arrest during sport events	Brief description of frequency and epidemiolo on the FoP; immediate response and manager cardiac screening (could apply to everyone no preparation – have someone who is available/

[h5] Cardiac Arrest on a cruise ship

If a cardiac arrest is recognised on a cruise ship, all medical resources should be used immediately. A medical first-responder team should be available 24/7, all equipment necessary for ALS should be available onboard and readily accessible. An AED should be onboard and requested immediately, since time to defibrillation is one of the most important factors for survival after cardiac arrest.[403] Where there are insufficient numbers of crew health care professionals, an onboard announcement should be made to call for further medical professional help.[404] Depending on the resources available telemedicine should be used as early as possible.[405] Qualified medical air transportation is an option to cover long distances to medical facilities.

[h3] Cardiac arrest in sport

The incidence of sudden cardiac death (SCD) associated with sport or exercise in the general population is 0.46 per 100,000 person-years.[406] There is a wide range in the incidence of SCD in those below 35 years of age (1.0 to 6.4 cases per 100,000 participant-years)[407] depending on the study parameters and the incidence is markedly higher in those

Vom CoSTR via Scopes zum Guideline Draft
„Was wird aus dem i.o.-Zugang?“

Puls.at

[h2] Drugs and fluids

[h3] Vascular access

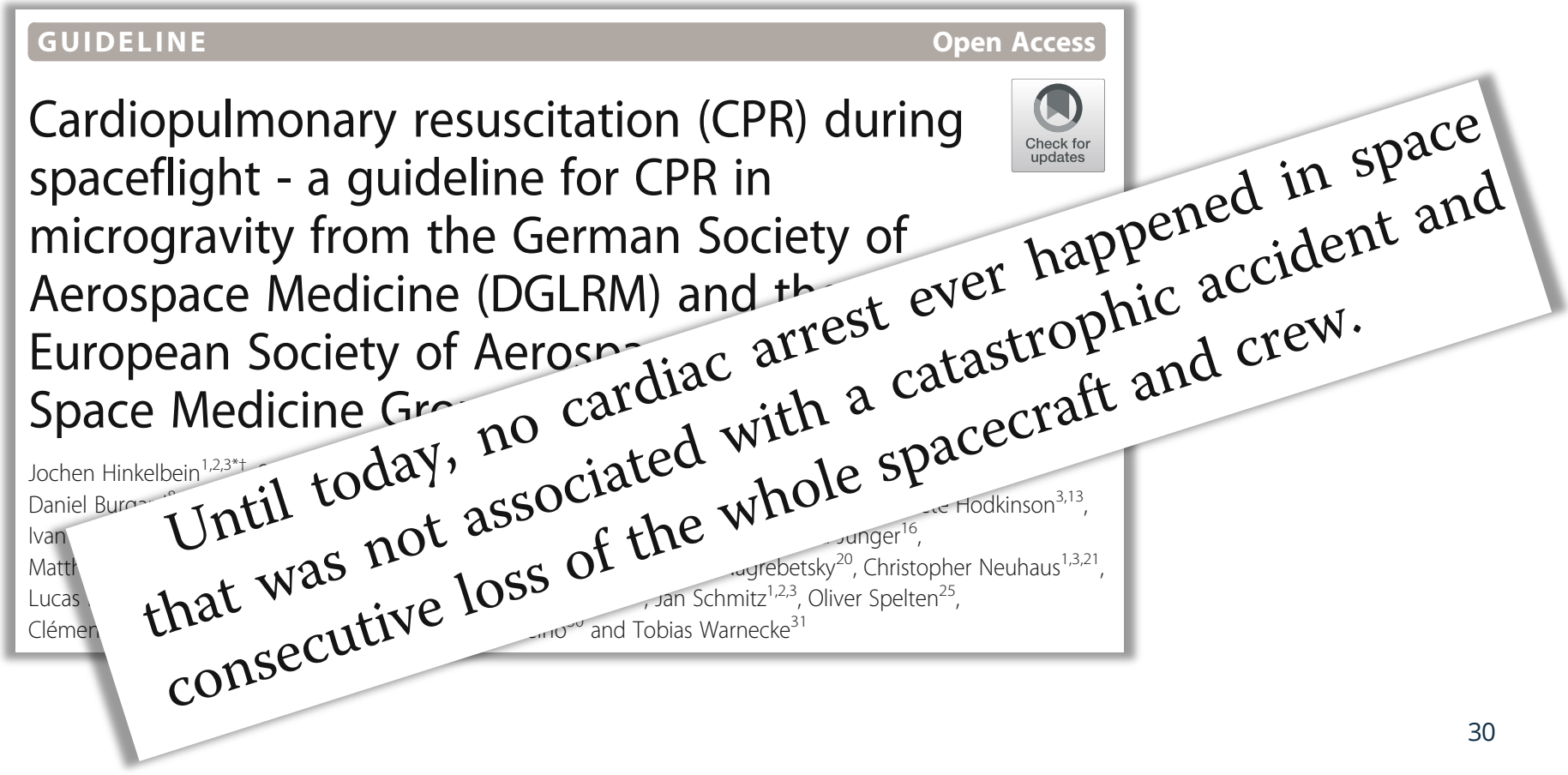
ILCOR suggests the intravenous route as opposed to the intraosseous route is used as the first attempt for drug administration during adult cardiac arrest.[1,283] This weak recommendation is based on very low-certainty evidence drawn from three retrospective observational studies which included 34,686 adult out-of-hospital cardiac arrests which suggests worse outcomes when the IO route was used.[284-286] Since the ILCOR review, secondary analyses of the PARAMEDIC2.[287] and ALPS randomised trials[288] suggested no significant effect modification by drug administration route although the studies were underpowered to assess for differences between the IV and IO routes.

Consistent with ILCOR, the ERC suggests attempting IV access first to enable drug delivery in adults in cardiac arrest. IO access may be considered if unable to obtain IV access in adults in cardiac arrest.

…aber wie ist das jetzt im Weltraum?

Die Lösung für, die es kein Problem gibt:

Puls.at



GUIDELINE Open Access

Cardiopulmonary resuscitation (CPR) during spaceflight - a guideline for CPR in microgravity from the German Society of Aerospace Medicine (DGLRM) and th… European Society of Aerosp… Space Medicine Gr…

Jochen Hinkelbein[1,2,3*†]
Daniel Burg…[8]
Ivan …
Matth…
Lucas …
Clémen…
…Hodkinson[3,13],
…unger[16],
…ugrebetsky[20], Christopher Neuhaus[1,3,21],
…Jan Schmitz[1,2,3], Oliver Spelten[25],
…and Tobias Warnecke[31]

Check for updates

Until today, no cardiac arrest ever happened in space that was not associated with a catastrophic accident and consecutive loss of the whole spacecraft and crew.

Fragen?

matthias.mueller@meduniwien.ac.at