ALS A BLS GUIDELINES 2020

–

PŘÁNÍ A OČEKÁVÁNÍ

MUDr. Roman Škulec, Ph.D.

- *Klinika anesteziologie, perioperační a intenzivní medicíny, Masarykova nemocnice v Ústí nad Labem, Univerzita J. E. Purkyně v Ústí nad Labem*
- *Zdravotnická záchranná služba Středočeského kraje*
- *Klinika anesteziologie, resuscitace a intenzivní medicíny, UK v Praze, LFHK, FN Hradec Králové*

CO BUDE V ERC G 2020?

CO BUDE V ERC G 2020?

- netuším

děkuji za pozornost

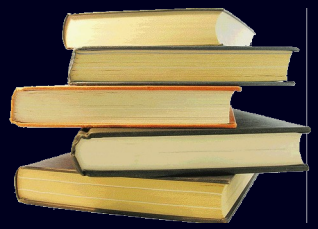
skulec@email.cz

MÁ PŘÁNÍ…

…která se bohužel nesplní

PARADOX ERC GUIDELINES

- základní postupy BLS a ALS se zjednodušují
  (méně léků, děti jsou děti, zbližování KPR dětí a dospělých)
- rozsah guidelines narůstá



2005
103 stránek

2015
103 stránek

?

2020

PARADOX ERC GUIDELINES

- **…kdo z vás přečetl ERC G 2015 celé?**

PARADOX ERC GUIDELINES

SECTION 1: EXECUTIVE SUMMARY	DOWNLOAD
SECTION 2: ADULT BASIC LIFE SUPPORT AND AUTOMATED EXTERNAL DEFIBRILLATION	DOWNLOAD
SECTION 3: ADULT ADVANCED LIFE SUPPORT	DOWNLOAD
SECTION 4: CARDIAC AREST IN SPECIAL CIRCUMSTANCES	DOWNLOAD
SECTION 5: GUIDELINES FOR POST-RESUSCITATION CARE	DOWNLOAD
SECTION 6: PAEDIATRIC LIFE SUPPORT	DOWNLOAD
SECTION 7: RESUSCITATION AND SUPPORT OF TRANSITION OF BABIES AT BIRTH	DOWNLOAD
SECTION 8: INITIAL MANAGEMENT OF ACUTE CORONARY SYNDROMES	DOWNLOAD
SECTION 9: FIRST AID	DOWNLOAD
SECTION 10: EDUCATION AND IMPLEMENTATION OF RESUSCITATION	DOWNLOAD
SECTION 11: THE ETHICS OF RESUSCITATION AND END-OF-LIFE DESCISIONS	DOWNLOAD

ESC
EuSEM

PARADOX ERC GUIDELINES

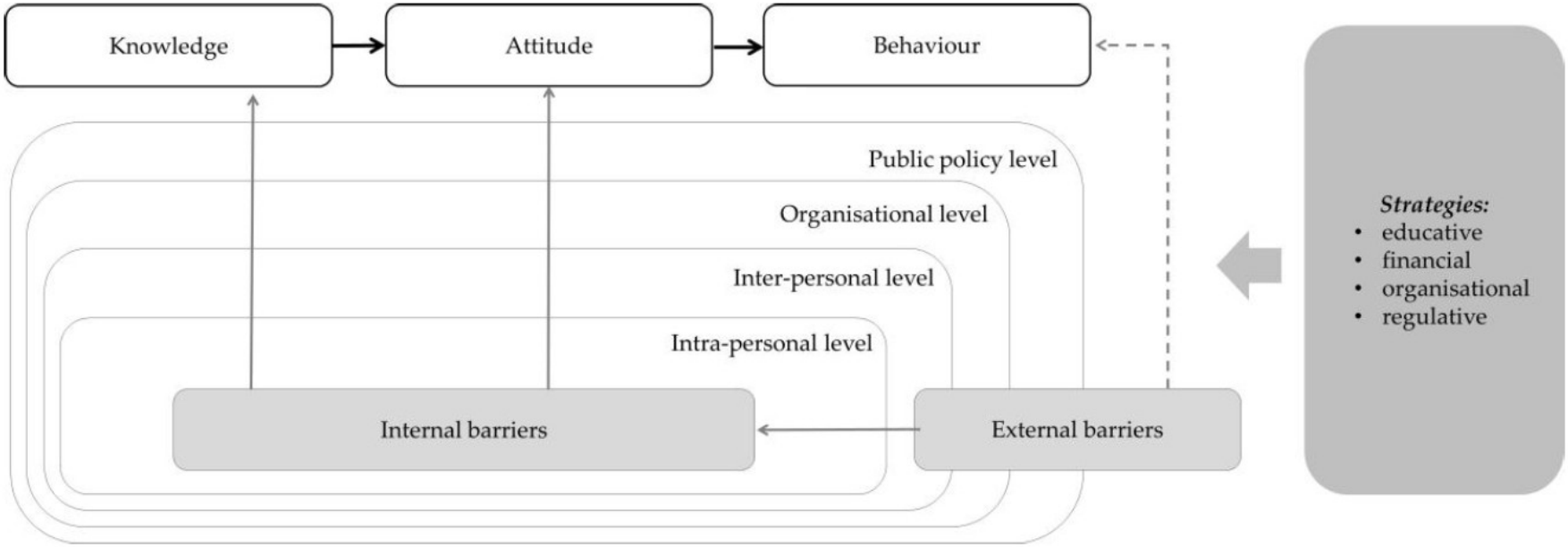
- cílem guidelines je zlepšení zdravotní péče
- publikace guidelines neznamená jejich používání
- 50% implementace guidelines trvá cca 2-3 roky
- 30-40% pacientů není léčeno podle posledních guidelines
- 20-25% pacientů obdrží zbytečnou, anebo škodlivou léčbu

PARADOX ERC GUIDELINES

Review

Barriers and Strategies in Guideline Implementation—A Scoping Review

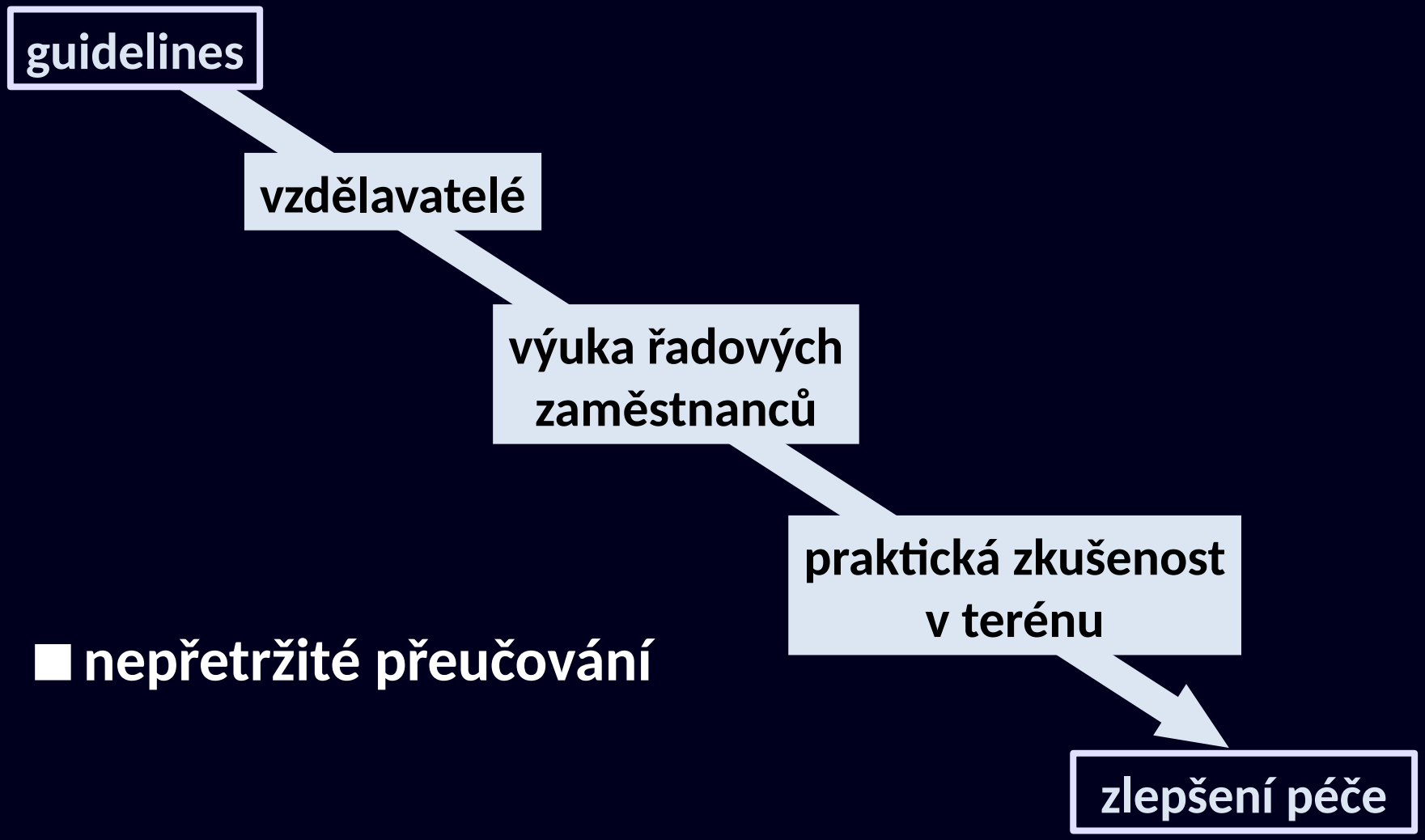
Florian Fischer [1,*], Kerstin Lange [1], Kristina Klose [2], Wolfgang Greiner [2] and Alexander Kraemer [1]



PARADOX ERC GUIDELINES

- je nutná aktualizace každých 5 let?
- je nutné aktualizovat každých 5 let všechny kapitoly?

PARADOX ERC GUIDELINES



- nepřetržité přeučování

PROCES AKTUALIZACE GUIDELINES

PICO Question Development

PICO question is created by the task force, and initial search strategy is completed by the information specialist.

Search Strategy Development

Initial search strategy is reviewed and approved by the task force and sent out for public comment. The full literature search is then completed by the information specialists and given to the evidence reviewers.

Evidence Reviewer Article Selection

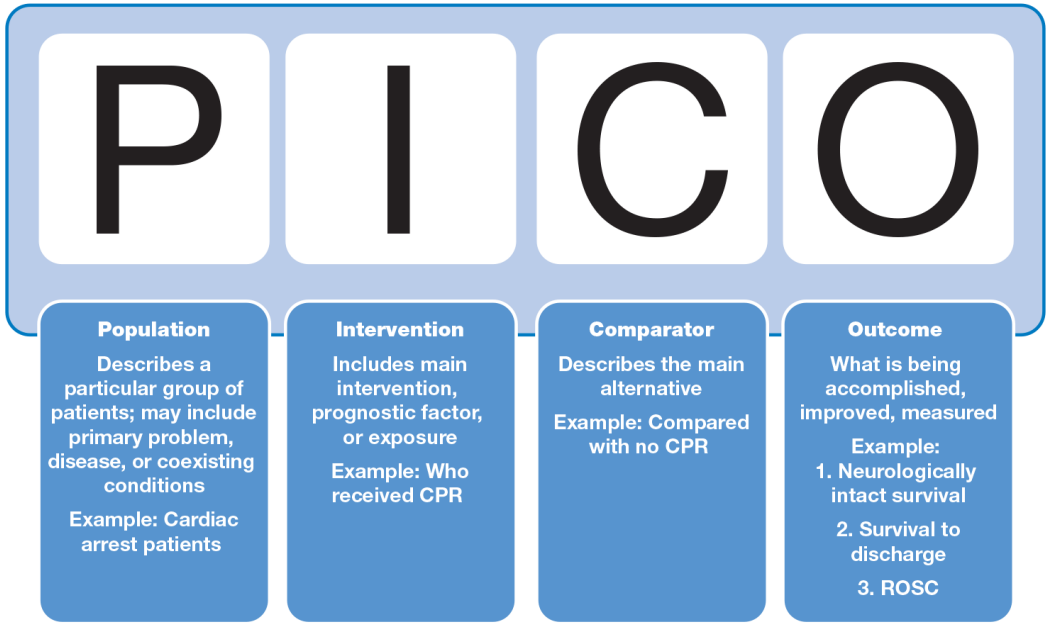
At least 2 evidence reviewers are selected by the task force to complete a single PICO question. They construct the review/bias tables.

GRADE Evidence Review

Evidence reviewers capture data in GRADEpro and complete GRADE analysis.

Development of CoSTR

Evidence reviewers draft the consensus on science and treatment recommendations. All PICO questions are presented by the evidence reviewers at ILCOR meetings, like 2015 Consensus on Science Conference. ILCOR approves all recommendations that are submitted for publication.



Structure of questions for evidence evaluation.

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CLASS (STRENGTH) OF RECOMMENDATION	
CLASS I (STRONG)	**Benefit >>> Risk**

Suggested phrases for writing recommendations:
▪ Is recommended
▪ Is indicated/useful/effective/beneficial
▪ Should be performed/administered/other
▪ Comparative-Effectiveness Phrases†:
  ▪ Treatment/strategy A is recommended/indicated in preference to treatment B
  ▪ Treatment A should be chosen over treatment B	

CLASS IIa (MODERATE)	**Benefit >> Risk**

Suggested phrases for writing recommendations:
▪ Is reasonable
▪ Can be useful/effective/beneficial
▪ Comparative-Effectiveness Phrases†:
  ▪ Treatment/strategy A is probably recommended/indicated in preference to treatment B
  ▪ It is reasonable to choose treatment A over treatment B	

CLASS IIb (WEAK)	**Benefit ≥ Risk**
Suggested phrases for writing recommendations: ▪ May/might be reasonable ▪ May/might be considered ▪ Usefulness/effectiveness is unknown/unclear/uncertain or not well established	
CLASS III: No Benefit (MODERATE)(Generally, LOE A or B use only)	**Benefit = Risk**
Suggested phrases for writing recommendations: ▪ Is not recommended ▪ Is not indicated/useful/effective/beneficial ▪ Should not be performed/administered/other	
CLASS III: Harm (STRONG)	**Risk > Benefit**
Suggested phrases for writing recommendations: ▪ Potentially harmful ▪ Causes harm ▪ Associated with excess morbidity/mortality ▪ Should not be performed/administered/other	

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↓

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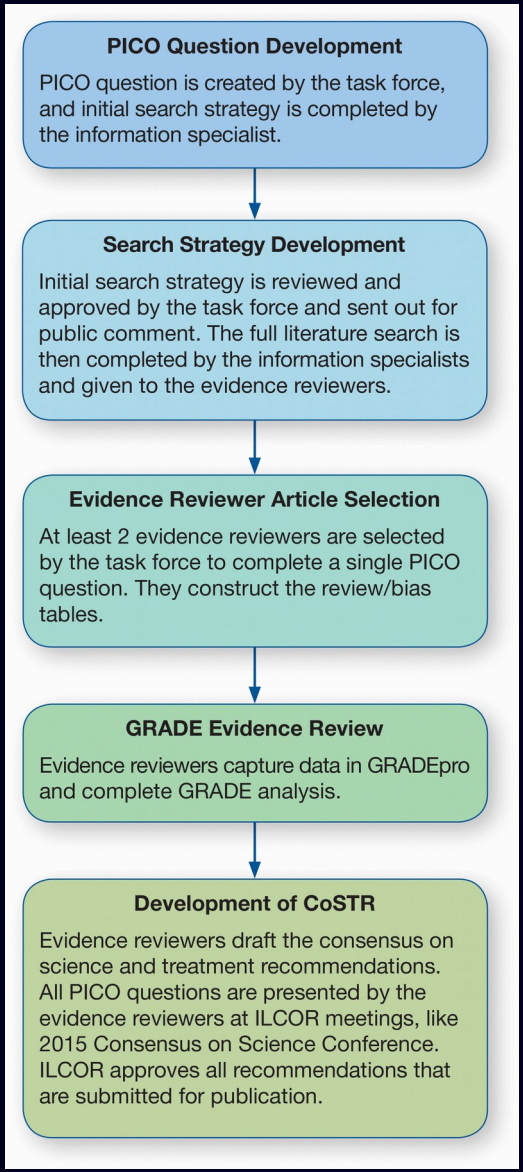
LEVEL (QUALITY) OF EVIDENCE‡	
Level A	
▪ High-quality evidence‡ from more than 1 RCTs ▪ Meta-analyses of high-quality RCTs ▪ One or more RCTs corroborated by high-quality registry studies	
Level B-R	**(Randomized)**
▪ Moderate-quality evidence‡ from 1 or more RCTs ▪ Meta-analyses of moderate-quality RCTs	
Level B-NR	**(Nonrandomized)**
▪ Moderate-quality evidence‡ from 1 or more well-designed, well-executed nonrandomized studies, observational studies, or registry studies ▪ Meta-analyses of such studies	
Level C-LD	**(Limited Data)**
▪ Randomized or nonrandomized observational or registry studies with limitations of design or execution ▪ Meta-analyses of such studies ▪ Physiological or mechanistic studies in human subjects	
Level C-EO	**(Expert Opinion)**
Consensus of expert opinion based on clinical experience	

PROCES AKTUALIZACE GUIDELINES



- ne vše nové lze vložit do guidelines
- obecný problém EBM posledních let
  - klinické studie „nevycházejí“

KRIZE EBM V RESUS. MEDICÍNĚ

- nová technická zařízení
- nové postupy
- neuroprotektivní metody

- máme či nemáme podávat adrenalin?

ADR

ELSEVIER

Review article

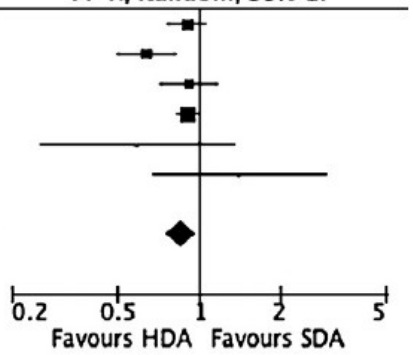
Adrenaline for out-
systematic review a

Steve Lin[a,b,*], Clifton W.
Joseph Beyene[d,g,4], Carol

ROSC

Study or Subgroup	SDA Events	SDA Total	HDA Events	HDA Total	Weight	Risk Ratio M-H, Random, 95% CI
Brown 1992	190	632	217	648	25.4%	0.90 [0.76, 1.05]
Callaham 1992	70	270	117	286	16.8%	0.63 [0.50, 0.81]
Choux 1995	85	265	96	271	17.4%	0.91 [0.71, 1.15]
Gueugniaud 1998	601	1650	678	1677	35.2%	0.90 [0.83, 0.98]
Sherman 1997	7	62	15	78	2.3%	0.59 [0.26, 1.35]
Stiell 1992	15	165	11	170	2.8%	1.40 [0.67, 2.97]
Total (95% CI)		**3044**		**3130**	**100.0%**	**0.85 [0.75, 0.97]**
Total events	968		1134			

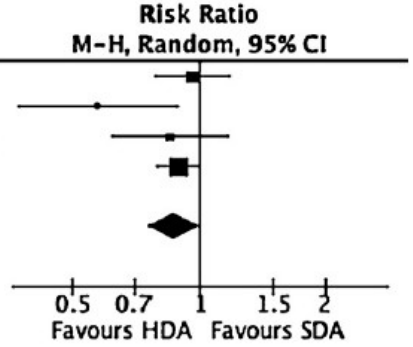
Heterogeneity: $Tau^2 = 0.01$; $Chi^2 = 9.70$, df = 5 (P = 0.08); $I^2 = 48\%$
Test for overall effect: Z = 2.42 (P = 0.02)



Survival to admission

Study or Subgroup	SDA Events	SDA Total	HDA Events	HDA Total	Weight	Risk Ratio M-H, Random, 95% CI
Brown 1992	136	632	145	648	28.0%	0.96 [0.78, 1.18]
Callaham 1992	27	270	50	286	8.9%	0.57 [0.37, 0.89]
Choux 1995	54	265	65	271	15.1%	0.85 [0.62, 1.17]
Gueugniaud 1998	389	1650	444	1677	48.0%	0.89 [0.79, 1.00]
Total (95% CI)		**2817**		**2882**	**100.0%**	**0.87 [0.76, 1.00]**
Total events	606		704			

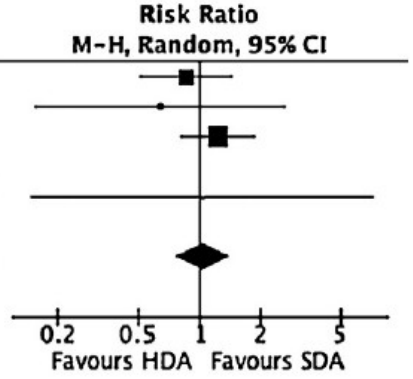
Heterogeneity: $Tau^2 = 0.01$; $Chi^2 = 4.52$, df = 3 (P = 0.21); $I^2 = 34\%$
Test for overall effect: Z = 1.98 (P = 0.05)



Survival to discharge

Study or Subgroup	SDA Events	SDA Total	HDA Events	HDA Total	Weight	Risk Ratio M-H, Random, 95% CI
Brown 1992	26	632	31	648	37.9%	0.86 [0.52, 1.43]
Callaham 1992	3	270	5	286	4.9%	0.64 [0.15, 2.63]
Gueugniaud 1998	46	1650	38	1677	54.7%	1.23 [0.80, 1.88]
Sherman 1997	0	62	0	78		Not estimable
Stiell 1992	2	165	2	170	2.6%	1.03 [0.15, 7.23]
Total (95% CI)		**2779**		**2859**	**100.0%**	**1.04 [0.76, 1.42]**
Total events	77		76			

Heterogeneity: $Tau^2 = 0.00$; $Chi^2 = 1.60$, df = 3 (P = 0.66); $I^2 = 0\%$
Test for overall effect: Z = 0.22 (P = 0.83)



ADRENALIN ANO ČI NE?

The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

A Randomized Trial of Epinephrine in Out-of-Hospital Cardiac Arrest

G.D. Perkins, C. Ji, C.D. Deakin, T. Quinn, J.P. Nolan, C. Scomparin, S. Regan, J. Long, A. Slowther, H. Pocock, J.J.M. Black, F. Moore, R.T. Fothergill, N. Rees, L. O'Shea, M. Docherty, I. Gunson, K. Han, K. Charlton, J. Finn, S. Petrou, N. Stallard, S. Gates, and R. Lall, for the PARAMEDIC2 Collaborators*

ADRENALIN ANO ČI NE?

- **prosinec 2014- říjen 2017, 8014 pacientů**
- **multicentrická, randomizovaná, dvojitě zaslepená studie adrenalin vs placebo**

ADRENALIN

Table 3. Primary and Secondary Outcomes.*

Outcome	Epine
Primary outcome	
Survival at 30 days — no./total no. (%)‡	130/40
Secondary outcomes	
Survival until hospital admission — no./total no. (%)§	947/397
Median length of stay in ICU (IQR) — days	
Patients who survived	7.5 (3.(
Patients who died¶	2.0 (1.
Median length of hospital stay (IQR)	
Patients who survived	21.0 (10
Patients who died‖	(
Survival until hospital discharge — no./total no. (%)	128/40(
Favorable neurologic outcome at hospital discharge — no./total no. (%)	87/400
Survival at 3 mo — no./total no. (%)	121/40(
Favorable neurologic outcome at 3 mo — no./total no. (%)	82/398

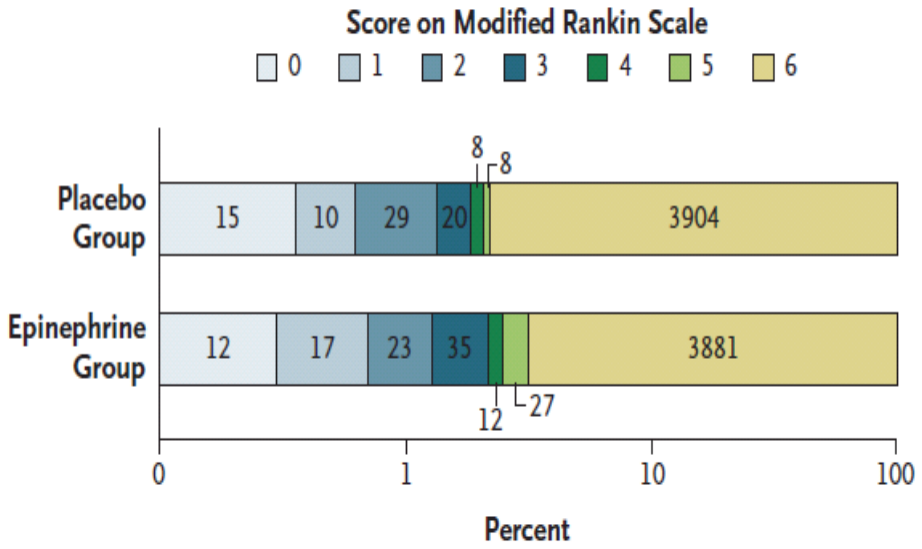


Figure 2. Survival with a Favorable Neurologic Outcome at Hospital Discharge.

Shown is the distribution of patients' scores on the modified Rankin scale, which ranges from 0 (no symptoms) to 6 (death). Survival until hospital discharge with a favorable neurologic outcome, as indicated by a score of 3 or less on the modified Rankin scale, occurred in 87 of 4007 patients (2.2%) in the epinephrine group and in 74 of 3994 patients (1.9%) in the placebo group. However, severe neurologic impairment (a score of 4 or 5) was more frequent in the epinephrine group than in the placebo group (39 of 126 patients [31.0%] vs. 16 of 90 patients [17.8%]). The patients who died before hospital discharge are indicated by a score of 6 on the scale. The data are presented on a $\log_{10}$ scale of the percentages of patients in each group.

ADRENALIN ANO ČI NE?

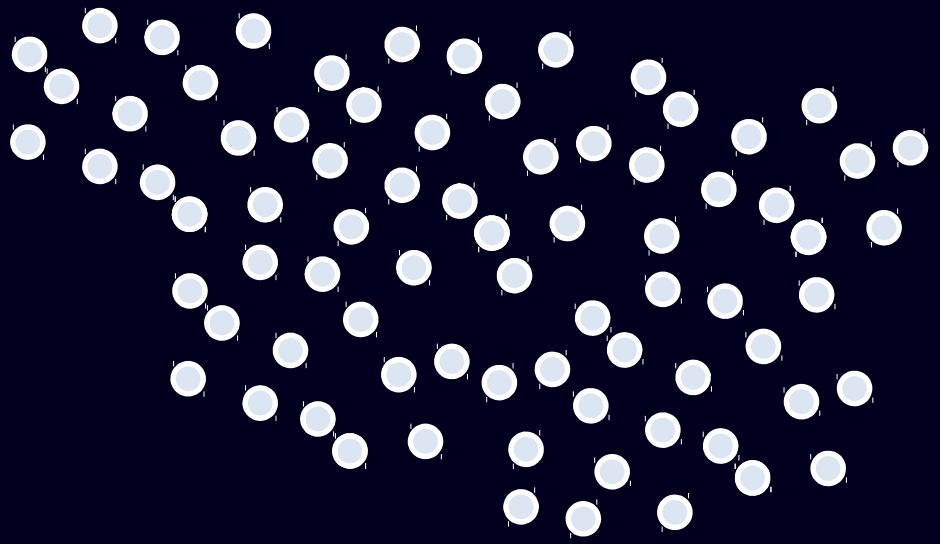
Table 2. Intervals between Key Events and Initial Response to Resuscitation.*

Variable	Epinephrine (N=4015)	Placebo (N=3999)
Interval between emergency call and ambulance arrival at scene		
No. of patients in analysis	4015	3999
Median (IQR) — min†	6.7 (4.3–9.7)	6.6 (4.2–9.6)
Interval between emergency call and administration of trial agent		
No. of patients in analysis	3975	3949
Median (IQR) — min†	21.5 (16.0–27.3)	21.1 (16.1–27.4)

CONCLUSIONS In adults with out-of-hospital cardiac arrest, the use of epinephrine resulted in a significantly higher rate of 30-day survival than the use of placebo, but there was no significant between-group difference in the rate of a favorable neurologic outcome because more survivors had severe neurologic impairment in the epinephrine group. (Funded by the U.K. National Institute for Health Research and others; Current Controlled Trials number, ISRCTN73485024.)

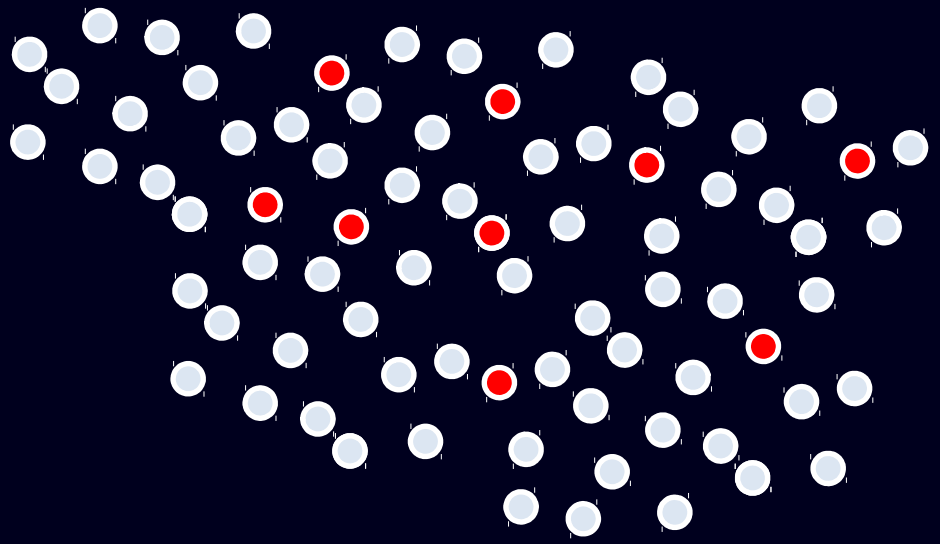
ADRENALIN ANO ČI NE?

- velmi nízké přežívání v obou skupinách



ADRENALIN ANO ČI NE?

- velmi nízké přežívání v obou skupinách



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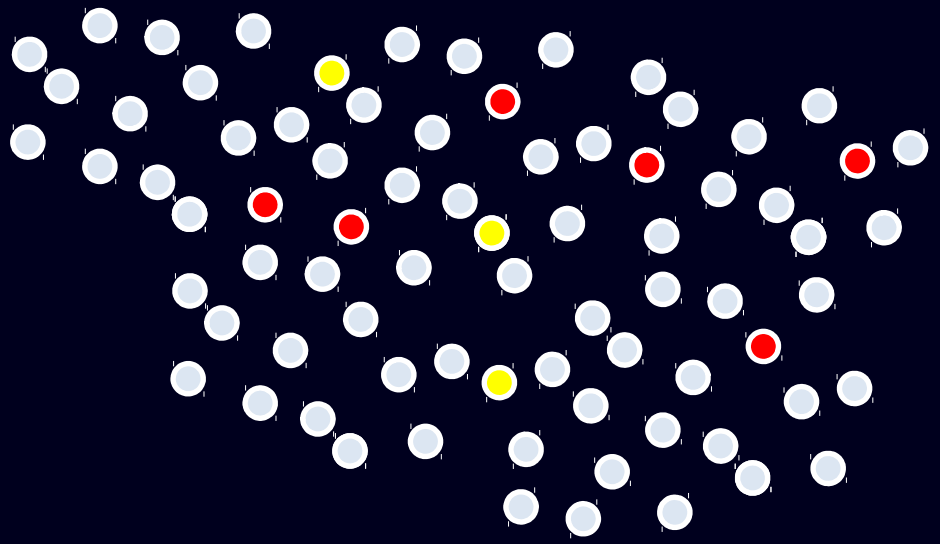

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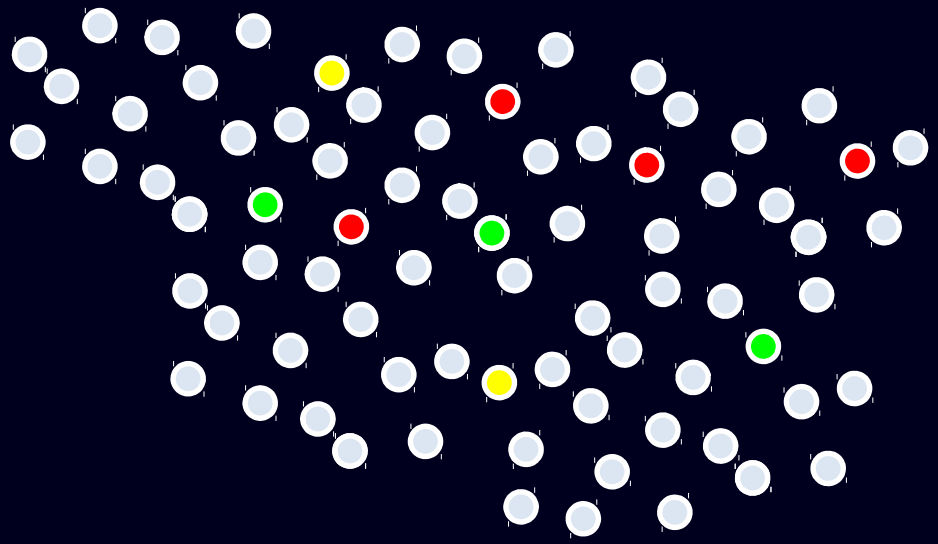
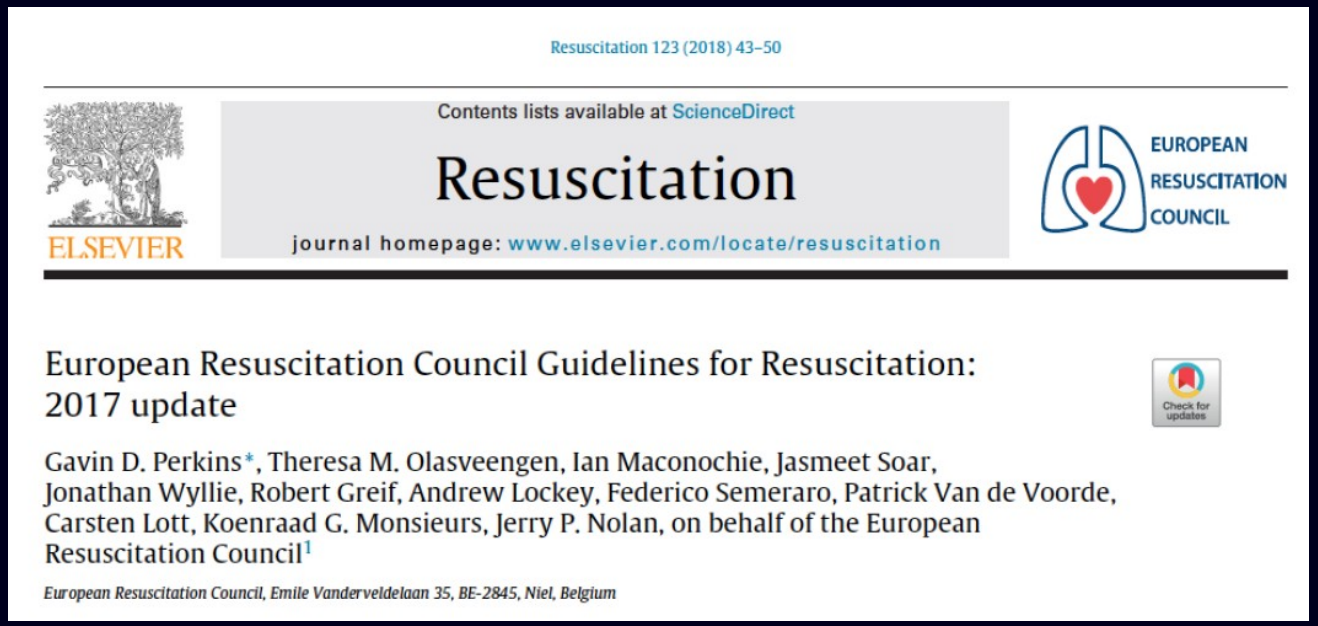


- žádná jednoznačná informace...

KRIZE EBM V RESUS. MEDICÍNĚ



Resuscitation 123 (2018) 43–50

Contents lists available at ScienceDirect

Resuscitation

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

European Resuscitation Council Guidelines for Resuscitation: 2017 update

Gavin D. Perkins*, Theresa M. Olasveengen, Ian Maconochie, Jasmeet Soar, Jonathan Wyllie, Robert Greif, Andrew Lockey, Federico Semeraro, Patrick Van de Voorde, Carsten Lott, Koenraad G. Monsieurs, Jerry P. Nolan, on behalf of the European Resuscitation Council[1]

European Resuscitation Council, Emile Vanderveldelaan 35, BE-2845, Niel, Belgium

- všichni pacienti s NZO by měli být léčeni kompresemi hrudníku
- umělé dýchání během BLS může mít přidanou hodnotu
  - děti, nekardiální NZO, delší dojezd ZZS
- věková hranice pro pediatrický algoritmu KPR 18 let

KRIZE EBM

Hazardous journey

Parachute use to prevent death and major trauma related to gravitational challenge: systematic review of randomised controlled trials

Gordon C S Smith, *professor*[1], **Jill P Pell**, *consultant*[2]

[1] Department of Obstetrics and Gynaecology, Cambridge University, Cambridge CB2 2QQ, [2] Department of Public Health, Greater Glasgow NHS Board, Glasgow G3 8YU

- potřebujeme na všechno EBM?

SCHRODINGEROVA KOČKA

SCHRODINGEROVA KOČKA

- problematika náhlé zástavy oběhu je tak složitá, že prokázat vliv jedné intervence na klinický výsledek je při respektování všeho prakticky nemožné

- zjednodušení situace na úroveň randomizované klinické studie činí studovaný problém nereálný a klinicky irelevantní

- *...co s tím?*

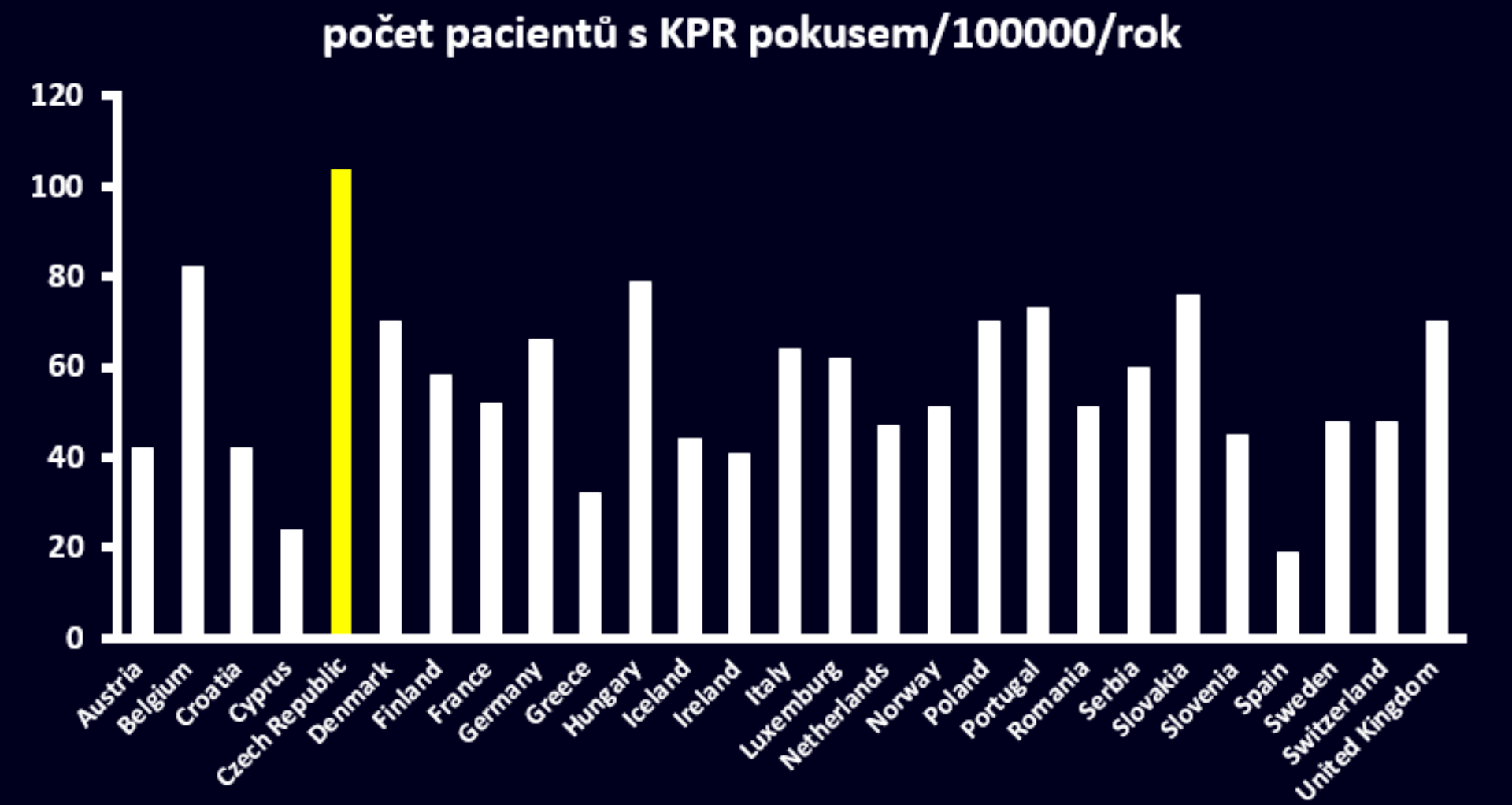
ONE SIZE FITS ALL?

Clinical paper

EuReCa ONE—27 Nations, ONE Europe, ONE Registry
A prospective one month analysis of out-of-hospital cardiac arrest outcomes in 27 countries in Europe☆

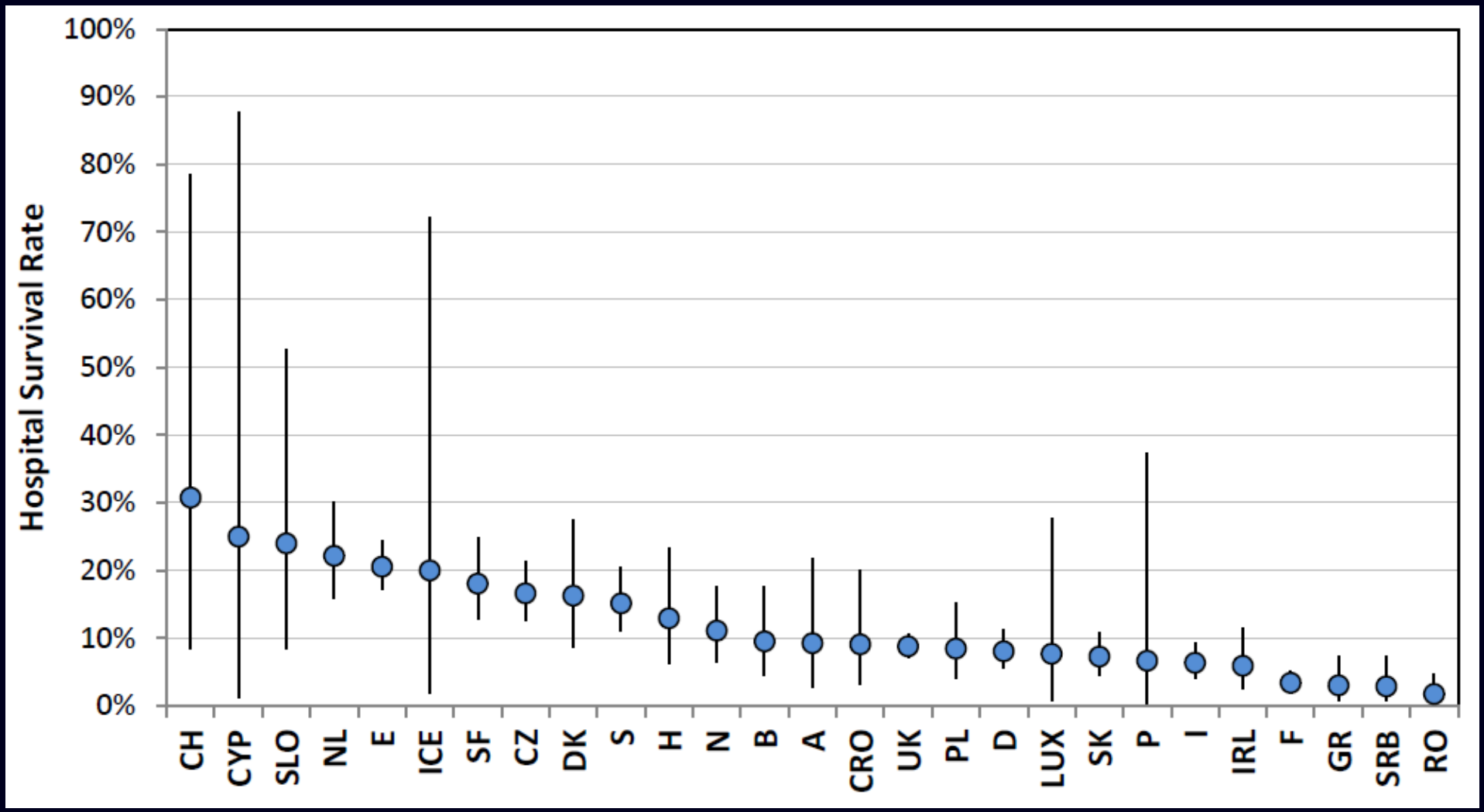
Jan-Thorsten Gräsner[a,b,*], Rolf Lefering[c], Rudolph W. Koster[d], Siobhán Masterson[e], Bernd W. Böttiger[f], Johan Herlitz[g], Jan Wnent[a,b], Ingvild B.M. Tjelmeland[h], Fernando Rosell Ortiz[i], Holger Maurer[j], Michael Baubin[k], Pierre Mols[l], Irzal Hadžibegović[m], Marios Ioannides[n], Roman Škulec[o], Mads Wissenberg[p], Ari Salo[q], Hervé Hubert[r], Nikolaos I. Nikolaou[s], Gerda Lóczi[t], Hildigunnur Svavarsdóttir[u], Federico Semeraro[v], Peter J. Wright[w], Carlo Clarens[x], Ruud Pijls[y], Grzegorz Cebula[z], Vitor Gouveia Correia[aa], Diana Cimpoesu[ab], Violetta Raffay[ac], Stefan Trenkler[ad], Andrej Markota[ae], Anneli Strömsöe[af], Roman Burkart[ag], Gavin D. Perkins[ah], Leo L. Bossaert[ai], on behalf of EuReCa ONE Collaborators[1]

ONE SIZE FITS ALL?



■ v ČR 104/100000/rok (379/měsíc) ■ v Evropě 19–104/100000/rok

ONE SIZE FITS ALL?



ONE SIZE FITS ALL?

- studujme, proč jsou mezi evropskými zeměmi rozdíly
- zjistíme, jak dál

NOVÝ PŘÍSTUP ILCOR

- **ILCOR: International Liaison Committee on Resuscitation**
- **CoSTR: Consensus on Science and Treatment Recommendations**
- **pětileté cykly guidelines**
- **kontinuální vyhodnocování nových poznatků na vybraná témata**

ZÁVĚRY

- nechte nás resuscitovat
- Evropské země jsou laboratoř pro identifikaci optimálních postupů
- zcela originální přístup k EBM

děkuji za pozornost

skulec@email.cz