

**ILCOR SCIENTIFIC ADVISORY STATEMENT PROPOSAL**

**1. Proposed Manuscript Title**

KIDS SAVE LIVES – ILCOR position statement on school children education in CPR

**2. Environmental Scan**

* *What other papers are already available on same/ similar topic area*

[KIDS SAVE LIVES BRAZIL: A successful pilot program to implement CPR at primary and high schools in Brazil resulting in a state law for a training CPR week.](https://www.ncbi.nlm.nih.gov/pubmed/31121207)

Nakagawa NK, Silva LM, Carvalho-Oliveira R, Oliveira KMG, Santos FRA, Calderaro M, Souza HP, Hajjar LA, Motta EV, Teixeira PWGN, Timerman S, Semeraro F, Carmona MJC, Böttiger BW.

Resuscitation. 2019 Jul;140:81-83. doi: 10.1016/j.resuscitation.2019.05.009. Epub 2019 May 20. No abstract available.

[KIDS SAVE LIVES-Three years of implementation in Europe.](https://www.ncbi.nlm.nih.gov/pubmed/30098386)

Semeraro F, Wingen S, Schroeder DC, Ecker H, Scapigliati A, Ristagno G, Cimpoesu D, Böttiger BW.

Resuscitation. 2018 Oct;131:e9-e11. doi: 10.1016/j.resuscitation.2018.08.008. Epub 2018 Aug 8. No abstract available.

['Kids save lives' in Hungary-Implementation, opportunities, programmes, opinions, barriers.](https://www.ncbi.nlm.nih.gov/pubmed/29966683)

Banfai B, Pandur A, Schiszler B, Radnai B, Banfai-Csonka H, Betlehem J.

Resuscitation. 2018 Sep;130:e3-e4. doi: 10.1016/j.resuscitation.2018.06.033. Epub 2018 Jun 30. No abstract available.

[KIDS SAVE LIVES: School children education in resuscitation for Europe and the world.](https://www.ncbi.nlm.nih.gov/pubmed/29087993)

Böttiger BW, Semeraro F, Altemeyer KH, Breckwoldt J, Kreimeier U, Rücker G, Andres J, Lockey A, Lippert FK, Georgiou M, Wingen S.

Eur J Anaesthesiol. 2017 Dec;34(12):792-796. doi: 10.1097/EJA.0000000000000713. No abstract available.

[["Kids Save Lives"-resuscitation training for schoolchildren : Systematic review].](https://www.ncbi.nlm.nih.gov/pubmed/28497243)

Schroeder DC, Ecker H, Wingen S, Semeraro F, Böttiger BW.

Anaesthesist. 2017 Aug;66(8):589-597. doi: 10.1007/s00101-017-0319-z. Epub 2017 May 11. Review. German.

[Kids (learn how to) save lives in the school with the serious game Relive.](https://www.ncbi.nlm.nih.gov/pubmed/28476478)

Semeraro F, Frisoli A, Loconsole C, Mastronicola N, Stroppa F, Ristagno G, Scapigliati A, Marchetti L, Cerchiari E.

Resuscitation. 2017 Jul;116:27-32. doi: 10.1016/j.resuscitation.2017.04.038. Epub 2017 May 2.

["Kids Save Lives": Educating Schoolchildren in Cardiopulmonary Resuscitation Is a Civic Duty That Needs Support for Implementation.](https://www.ncbi.nlm.nih.gov/pubmed/28292747)

Böttiger BW, Semeraro F, Wingen S.

J Am Heart Assoc. 2017 Mar 14;6(3). pii: e005738. doi: 10.1161/JAHA.117.005738. Review. No abstract available.

[Resuscitation Training for Schoolchildren Worldwide: Kids Save Lives.](https://www.ncbi.nlm.nih.gov/pubmed/28181935)

Van Aken H, Hessler M, Brinkrolf P, Bohn A, Böttiger BW, Gottschalk A.

Anesth Analg. 2017 Apr;124(4):1354-1356. doi: 10.1213/ANE.0000000000001745. No abstract available. Erratum in: [Anesth Analg. 2017 Sep;125(3):1084](https://www.ncbi.nlm.nih.gov/pubmed/29064379).

["Kids Save Lives" campaign in Italy: A picture from a nationwide survey on the web.](https://www.ncbi.nlm.nih.gov/pubmed/27914231)

Semeraro F, Scapigliati A, De Marco S, Boccuzzi A, De Luca M, Panzarino B, Cataldi W, Scelsi S, Ristagno G.

Resuscitation. 2017 Feb;111:e5-e6. doi: 10.1016/j.resuscitation.2016.11.013. Epub 2016 Nov 30. No abstract available.

[Teaching school children basic life support improves teaching and basic life support skills of medical students: A randomised, controlled trial.](https://www.ncbi.nlm.nih.gov/pubmed/27576085)

Beck S, Meier-Klages V, Michaelis M, Sehner S, Harendza S, Zöllner C, Kubitz JC.

Resuscitation. 2016 Nov;108:1-7. doi: 10.1016/j.resuscitation.2016.08.020. Epub 2016 Aug 27.

[KIDS SAVE LIVES implementation in Europe: A survey through the ERC Research NET.](https://www.ncbi.nlm.nih.gov/pubmed/27562946)

Semeraro F, Wingen S, Schroeder DC, Ecker H, Scapigliati A, Ristagno G, Böttiger BW.

Resuscitation. 2016 Oct;107:e7-9. doi: 10.1016/j.resuscitation.2016.08.014. Epub 2016 Aug 22. No abstract available.

[Kids Save Lives - ERC position statement on school children education in CPR.: "Hands that help - Training children is training for life".](https://www.ncbi.nlm.nih.gov/pubmed/27339096)

Böttiger BW, Bossaert LL, Castrén M, Cimpoesu D, Georgiou M, Greif R, Grünfeld M, Lockey A, Lott C, Maconochie I, Melieste R, Monsieurs KG, Nolan JP, Perkins GD, Raffay V, Schlieber J, Semeraro F, Soar J, Truhlář A, Van de Voorde P, Wyllie J, Wingen S; Board of European Resuscitation Council (ERC).

Resuscitation. 2016 Aug;105:A1-3. doi: 10.1016/j.resuscitation.2016.06.005. Epub 2016 Jun 22. No abstract available.

[Kids save lives: a six-year longitudinal study of schoolchildren learning cardiopulmonary resuscitation: Who should do the teaching and will the effects last?](https://www.ncbi.nlm.nih.gov/pubmed/26868079)

Lukas RP, Van Aken H, Mölhoff T, Weber T, Rammert M, Wild E, Bohn A.

Resuscitation. 2016 Apr;101:35-40. doi: 10.1016/j.resuscitation.2016.01.028. Epub 2016 Feb 8.

[Kids save lives -Training school children in cardiopulmonary resuscitation worldwide is now endorsed by the World Health Organization (WHO).](https://www.ncbi.nlm.nih.gov/pubmed/26209417)

Böttiger BW, Van Aken H.

Resuscitation. 2015 Sep;94:A5-7. doi: 10.1016/j.resuscitation.2015.07.005. Epub 2015 Jul 21. No abstract available.

['Kids save lives': why schoolchildren should train in cardiopulmonary resuscitation.](https://www.ncbi.nlm.nih.gov/pubmed/25922895)

Bohn A, Lukas RP, Breckwoldt J, Böttiger BW, Van Aken H.

Curr Opin Crit Care. 2015 Jun;21(3):220-5. doi: 10.1097/MCC.0000000000000204.

Böttiger BW, Lockey A, Aickin R, Castren M, de Caen A, Escalante R, Kern KB, Lim SH, Nadkarni V, Neumar RW, Nolan JP, Stanton D, Wang TL, Perkins GD. "All citizens of the world can save a life" - The World Restart a Heart (WRAH) initiative starts in 2018. Resuscitation. 2018 Jul;128:188-190.

* Previous systematic reviews: NONE
* *What ILCOR and member council guidelines will be cross-referenced? ALL*

**3. Need for the Paper -** Please provide a subject summary (delete yellow text when actioned). How will the paper support ILCOR’s mission, vision and values?

Sudden out-of-hospital cardiac arrest (OHCA) with unsuccessful cardiopulmonary resuscitation (CPR) is the third leading cause of death in industrialized nations. After OHCA, the overall survival rates are 2–10%. In Europe and in the US together, 700,000 people die of OHCA every year. The same applies to other industrialized regions of the world. Many of these lives could be saved if more lay people provided immediate CPR. Emergency medical services (EMS) response times can be several (6–12) minutes or even longer. Unfortunately, following cardiac arrest, the brain starts to die after only 3–5 min without blood ﬂow.

Up to 70% of OHCA are witnessed by family members, friends and other bystanders. Thus, the potentially lethal gap in time before EMS personnel reach the patient can be successfully bridged by laypeople. During the ﬁrst minutes after OHCA in adults there is still oxygen in the blood and lungs, and immediate bystander chest compressions can save hundreds of thousands of lives each year. Effective CPR is quite easy – laypeople are very unlikely to cause harm by attempting CPR. Bystander CPR increases the patient’s chances of survival two- to four-fold. However, bystander CPR rates are 60–80% in only a very few countries; in most countries the rate is far below 20%.

Mandatory nationwide training of school children has the highest impact for improving the bystander CPR rate. This appears to be the most successful way to reach the entire population. The highest bystander CPR rates are in some Scandinavian countries where education of school children in CPR has been mandatory for decades, and this concept is starting to spread.

In support, the World Health Organization (WHO) has endorsed the “Kids Save Lives” Statement in 2015, a joint statement from the European Resuscitation Council (ERC), the European Patient Safety Foundation (EPSF), the International Liaison Committee on Resuscitation (ILCOR) and the World Federation of Societies of Anesthesiologists (WFSA). This statement recommends two hours of CPR training annually from the age of 12 years in all schools worldwide. At this age, children are more responsive to instructions and they learn more easily to help others. Starting at a young age also means that CPR is like swimming or riding a bike: children will not forget how to save a life. Healthcare professionals, teachers trained to teach CPR and others can successfully teach school children, and all can serve as multipliers. CPR knowledge and skills can be spread further by asking children to teach their family and friends.

With the “Kids Save Lives” initiative, we can help to improve the survival rate of people with OHCA by the factor of two- to fourfold. We can easily save 300,000 additional lives worldwide every year, nearly a thousand every day, and nearly one life every minute.

**4. Audience -** Intended audience (e.g.: healthcare professionals, lay, policy makers, outside societies)

All – healthcare professionals, lay people, schoolchildren, teachers, students policy makers, outside societies

**5. Lay Summary** - Write a lay summary of 200 words or less (include clinical relevance)

Sudden out-of-hospital cardiac arrest (OHCA) with unsuccessful cardiopulmonary resuscitation (CPR) is the third leading cause of death in industrialized nations. Many of these lives could be saved if more lay people provided immediate CPR. Up to 70% of OHCA are witnessed by family members, friends and other bystanders. Thus, the potentially lethal gap in time before EMS personnel reach the patient can be successfully bridged by laypeople. Mandatory nationwide training of school children has the highest impact for improving the bystander CPR rate. This appears to be the most successful way to reach the entire population. The highest bystander CPR rates are in some Scandinavian countries where education of school children in CPR has been mandatory for decades, and this concept is starting to spread. Starting at a young age also means that CPR is like swimming or riding a bike: children will not forget how to save a life. With the “Kids Save Lives” initiative, we can help to improve the survival rate of people with OHCA by the factor of two- to fourfold. We can easily save 300,000 additional lives worldwide every year, nearly a thousand every day, and nearly one life every minute.

**6. Implications** – Will there be implications in this guideline/statement for public health and/or are there recommendations that will change the practice of clinicians? If so, please summarize.

Huge implications on public health, since lay resuscitation is the key factor for good survival following sudden cardiac arrest.

**7. Proposed Writing Group** – 8-10 members in total. Provide full name, institution, and email address for each proposed member. Please consider ILCOR’s values of collaboration and diversity when making nominations.

Bernd W. Böttiger, University Hospital of Cologne, Germany; [bernd.boettiger@uk-koeln.de](mailto:bernd.boettiger@uk-koeln.de)

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Naomi Kondo Nakagawa, University of Sao Paulo Medical School, Brazil; naomi.kondo@fm.usp.br

Federico Semeraro, Maggiore Hospital of Bologna, Italy; [f.semeraro@118er.it](mailto:f.semeraro@118er.it)

**Writing Group Chair** (confirm that writing group chair has no relevant COI. 51% of proposed writing group members must be free of COI.)

Bernd W. Böttiger

The writing group chair has nor related COI. All other proposed authors have are free of any related COI.

**Writing Group Vice Chair**

Federico Semeraro

**Writing Group Members**

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I confirm that I have no conflict of interest to declare. Naomi K. Nakagawa

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N.N.

**Minority Member**

\*\*All ILCOR member councils will be invited to nominate a writing group member if proposal is accepted\*\*

**8. Timetable for Completion of Paper** – 6-9 months to time of peer review

**Months 0-1: Literature search**

**Months 1-3: Discussion of content, goals, key statements**

**Months 3-6: Writing up the Statement**

**Months 6-9: Final Statement for approval**