

Congresso Nazionale IRC

2019

11 • 12 OTTOBRE

Centro Congressi Veronafiere



Italian
Resuscitation
Council

Almanacco dei 25 anni: una storia di scienza e formazione

Fulvio KETTE

Co-fondatore IRC (1994)

Membro ERC Executive Committee (1994 – 1998)

Membro Comitato Direttivo IRC (1997 – 1999)

Coordinatore Commissione ALS (2000 – 2002)

Membro Esperto ILCOR (Consensus Conferences 2000, 2005, 2010)

Fellow European Resuscitation Council (2018)

**Ovvero:
come condensare
25 anni di storia
in 30 minuti**





University of Health Science
The Chicago Medical School
North Chicago, IL



March 1988 - March 1990



*“Whoever saves one life it is as
he or she had saved the entire
world”*

is the sentence from the
Talmud’s book that inspired
Doctor Max Harry Weil
throughout his life as man,
clinician, scientist, teacher, and
friend.



Peter Safar and Max Harry Weil

Giants of Critical Care and of
Cardio-Pulmonary Resuscitation



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Villaggio Alimini, (Otranto), giugno 1990

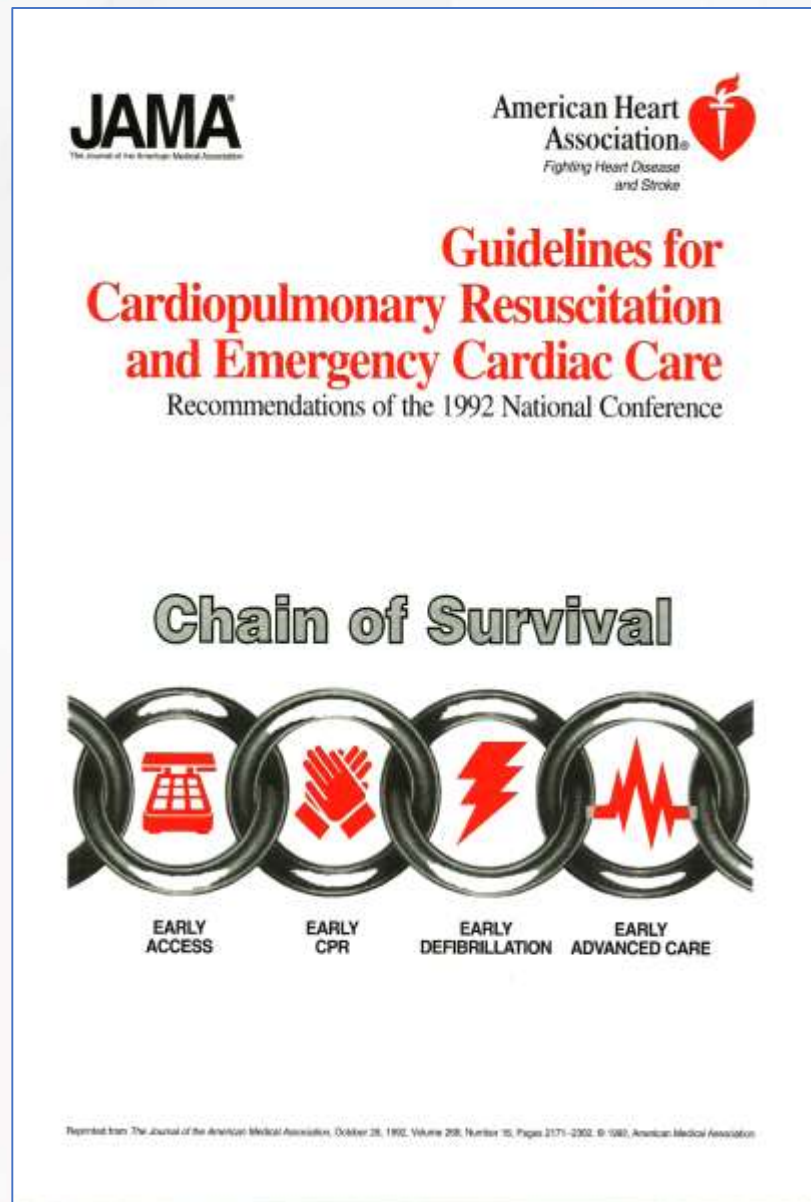


Rinaldo Cantadore, Fellow di Peter Safar
Pittsburgh Research Center

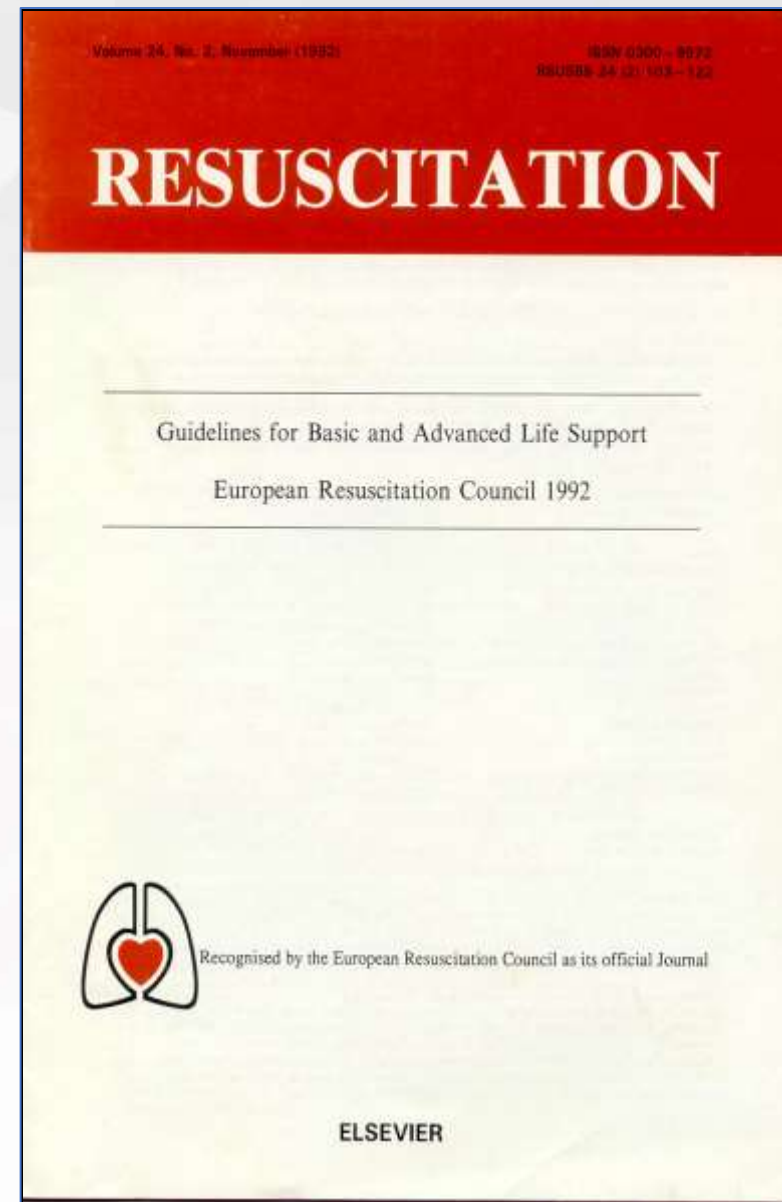


Erga Laura Cerchiari, Fellow di Peter Safar
Pittsburgh Research Center

Inizio coinvolgimento di medici ed infermieri attivi
nel campo della CPR
per la creazione di un
libro sulla Rianimazione Cardio-Polmonare



1992



1990-2000

1990: Prima Centrale Operativa «modello 118»

1992: d. lgs. 27/3/92

1992-1999: nascita e diffusione dei sistemi 118

Friuli Venezia Giulia Cardiac Arrest Cooperative Study

1993 - 1994



- **Rodolfo Sbrojavacca**, Medicina d'Urgenza e Pronto Soccorso, Gemona d.F. (UD)
- **Fulvio Kette**, Anestesia e Rianimazione TS
- **Gianluigi Rellini**, Cardiologia PN



Epidemiology and survival rate of out-of-hospital cardiac arrest in
north-east Italy: The F.A.C.S. study

Resuscitation 1998;36:153-159

Fulvio Kette ^{a,*}, Rodolfo Sbrojavacca ^b, Gianluigi Rellini ^c, Gino Tosolini ^d, Marina Capasso ^d,
Domenico Arcidiacono ^b, Guglielmo Bernardi ^e, Paolo Frittitta ^f

Partecipanti: Arnetoli, Issam, Cerchiari, D'Este, Destro, Giono-Calvetto, Gordini, Kette, Lapucci, Punzo, Radeschi, Rellini, Sbrojovacca e Valagussa.



Milano, SUEM 118,
Niguarda, 28 aprile 1994



Roma, Ambasciata di
Norvegia, maggio 1994

Partecipanti: Barelli, Bussani, Ciccone, Costa, De Medici, De Martinis, Golino, Marinosci, Paoletti, Sandroni, Satriano e Schiraldi.



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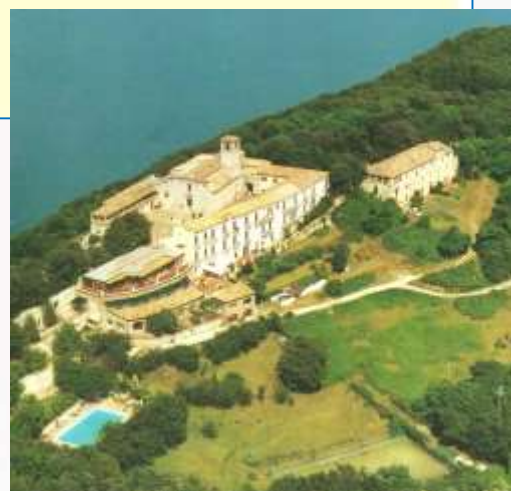
**CPCR METHODOLOGY
CONSENSUS MEETING
BLS E FORMAZIONE**

Monte Conero, Sirolo (Ancona)
24 - 25 giugno 1994

Fulvio Kette



Formazione Ricerca e Training nell'Emergenza



**CPCR METHODOLOGY CONSENSUS MEETING
BLS E FORMAZIONE**
Monte Conero, Sirolo (Ancona) 24 - 25 giugno 1994

Su iniziativa dell'Associazione FoRT.E, il giorno 24 giugno 1994 si è riunito a Monte Conero (Ancona) un Gruppo di lavoro multidisciplinare costituito da medici (rianimatori, cardiologi, medici di pronto soccorso, chirurghi) attivi nell'emergenza sanitaria pre- ed intraospedaliera e con esperienza in programmi di formazione nel Basic Life Support (BLS). I componenti del Gruppo di Lavoro sono elencati nella Tab. 1.

Lo scopo del Gruppo di lavoro era esprimere un consenso su tre ordini di questioni tutte centrate sul problema della formazione nel BLS:

- I. modalità tecniche di esecuzione delle procedure di BLS raccomandate dall'American Heart Association (AHA) e dall'European Resuscitation Council (ERC).
- II. pianificazione e modalità degli interventi di formazione nel BLS.
- III. criteri per la formazione degli istruttori di BLS.

Vengono qui sintetizzate le conclusioni del Gruppo su questi tre punti. Mentre per il secondo ed il terzo sono state formulate delle raccomandazioni, in merito al primo punto il Gruppo ha effettuato un lavoro di analisi, confronto e commento delle linee guida dell'AHA e dell'ERC.

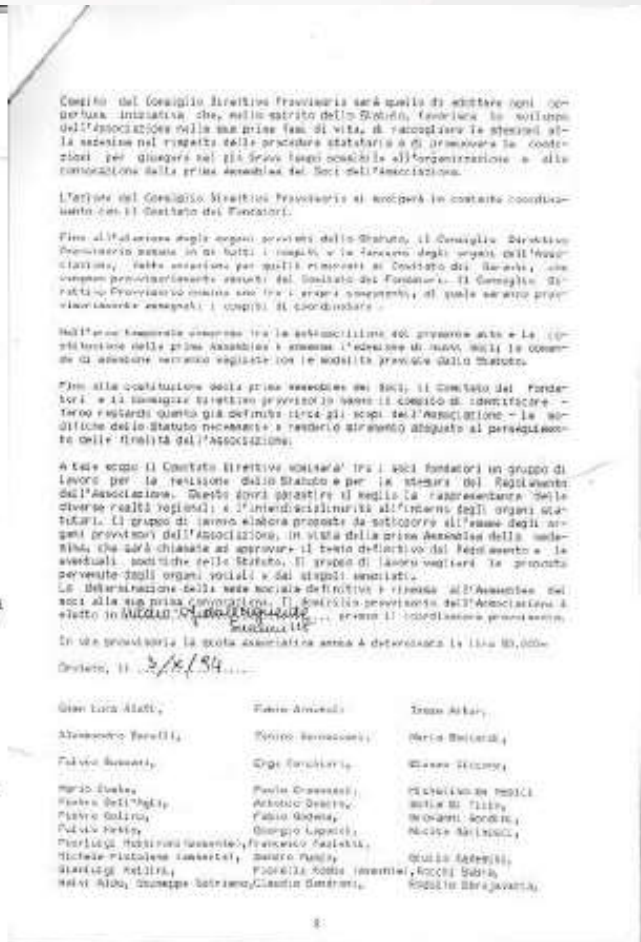


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3 ottobre 1994 Orvieto, Villa Ciconia,



Direttivo provvisorio

Franco Valagussa (Cardiologia Monza),
Rodolfo Sbrojavacca (Area d'Emergenza Gemona),
GianLuigi Rellini (Cardiologia Pordenone),
Sandro Punzo (Anestesia e Rianimazione Ancona),
Giorgio Lapucci (Med. Urgenza e PS Ravenna),
Piero Dell'Agli (Chirurgia Roma)
Erga Cerchiari (Anestesia e Rianimazione Milano).



Obiettivi preliminari ed essenziali

- Formalizzazione e riconoscimento delle due prime Commissioni (definizione degli standard in BLS e sviluppo di un Registro Italiano su ACC)
- Richiesta a ERC del riconoscimento di IRC;
- Inserimento nell'Executive Committee di ERC di due suoi rappresentanti
- Organizzazione (grazie a fattiva collaborazione con Laerdal), del primo corso istruttori in BLS (Convegno APICE, Trieste, 24 ottobre 1994)



Prima seduta del primo Direttivo

- Formalizzazione del programma biennio 1995-1997 (reso noto a tutti soci):
- Consolidamento raccolta dati nel database RIACE;
- Stampa delle raccomandazioni per la
- formazione del primo soccorso vitale;
- Censimento dei primi centri di riferimento;
- Organizzazione di consensus conference
- nazionali su ALS e defibrillazione
- Precoce
- Avvio delle attività per la RCP Pediatrica;
- Formalizzazione dei vari Gruppi di Lavoro in Commissioni;
- Stampa di un notiziario (IRC News) per la diffusione delle attività'



IRC, 1995 primo Direttivo (Gordini, Valagussa, Cerchiari, Bussani, Sbrojavacca e Punzo, assente Rellini)

CONSENSUS ALS Alzate Brianza 8, 9 e 10 ottobre 1995



Coordinatore della Consensus: Gino Tosolini
Moderatori delle sessioni: Cantadore, Destro, Kette, Peris, Rellini

Gruppi di lavoro: Barelli, Bertini, Bozano, Bussani, Cerchiari, Cremonesi, Delise, Di Pietro, Di Tizio, Gattinoni, Gordini, Lapucci, Marras, Moretti, Proietti, Radeschi, Rocchi, Roghi, Sandroni, Sbrojavacca, Scherillo, Valagussa

Abbiām speso, qui ad Alzate,
 due terribili giornate:
 ad ogni passo si è discussa
 l'opinione di **Valagussa**
 e ogni idea venuta a **Kotte**
 è poi stata fatta a fette;
 se **Bozano** e anche **Moretti**
 sempre ha **Marras** contraddetti,
 molte coliere improvviso
 son venute anche a **Delise**
 nel sentire le opinioni
 di **Retini** e di **Sandroni**,
 e ogni uscita di **Lapucci**
 procurato ha molti cruci
 al soave **Cantadore**
 che ha respinto con furore
 le ragioni di **Gordini**,
 che rifiuta anche **Bertini**.
 Molti pensan che **Cerchieri**
 spesso è uscita dai binari,
 ed è chiaro che **Scherillo**
 ha cercato ogni cavillo
 per dar conto a **Cremonesi**,
 di cui pare son le tesi
 un po' come anche a **Radeschi**,
 che ancor litiga – e siam freschi –
 sia con **Peris** che **Bussani**:
 quasi vengono alle mani

discutendo, un po' per stizza,
 una idea della **Di Tizio**.
 Molti insulti anche a **Di Pietro**,
 e anche a **Destro**, andato dietro
 alle idee, meglio agli sfoghi,
 che ci ha urlato **Alberto Roghi**,
 che ha concluso che son giacchi:
 sia **Barelli** che **la Rocchi**.
Sbrojavacca ha messo in verso
 quel che, è chiaro, è tempo perso.

Domandar se vi è consenso
 mi par proprio senza senso,
 e che Bosnia un po' ricalchi
 questa villa, la **Odescalchi**,
Tosolini riuscirà
 questo cerchio a riquadrar?

Rodolfo Sbrojavacca



*Abbiām speso, qui ad Alzate,
 due terribili giornate... RS*

CORSO PROVIDER-ISTRUTTORI ACLS

Pila (PG) - Villa Umbra 23, 24 e 25 marzo 1997

The Oxford Redcliff Hospital ALS Course Programme

P. Hombrey, M. Ward, K. Campbell, S. Shankar,
A. Harris, P. Howard, A. Lockey, M. Hedley

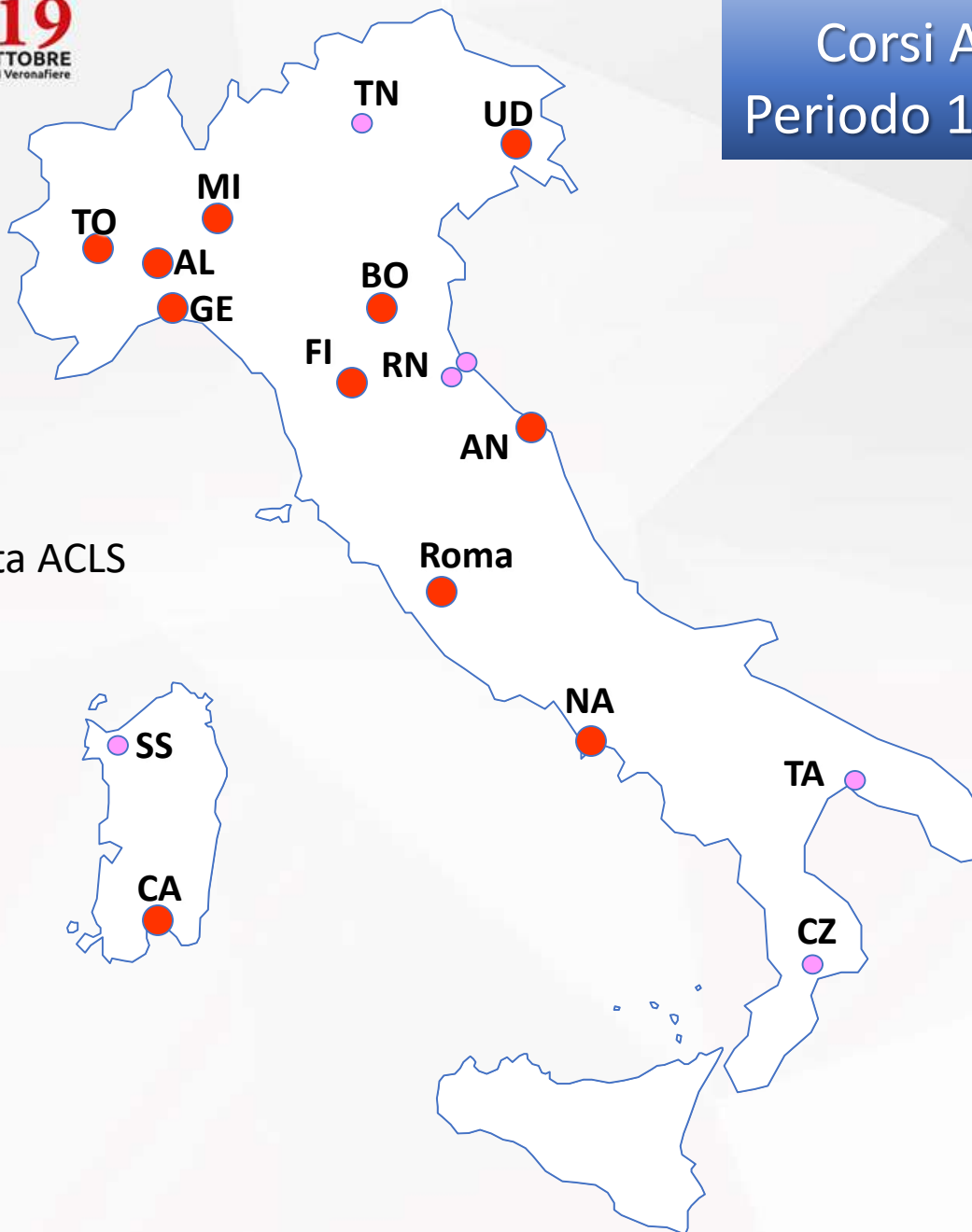
A. Barelli, M. Barbero, A. Beretta,
A. Bonanome, E. Cerchiari, F. Ciappi,
P. Cremonesi, M. Gianolio, G. Gordini,
G. Guizzardi, F. Kette, M. Magnani,
M. Menarini, S. Mingazzini, A. Monti,
S. Moretti, G. Nardi, M. Palmerini, A. Peris,
P. Quintarelli, S. Rocchi, A. Roghi,
C. Sandroni, R. Sbrojavacca, F. Schiraldi,
A. Sodero, C. Realini.





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Corsi ACLS IRC Periodo 1998 - 1999



Primi corsi pilota ACLS

Udine
Bologna
Milano
Firenze

Corsi ACLS

Firenze:	24
Milano-Monza:	13
Genova:	12
Ancona:	7
Udine:	7
Bologna:	6
Roma:	6
Torino:	6
Napoli-Salerno:	5
Alessandria:	3
Cagliari:	3
Trento:	2
Catanzaro:	1
Sassari:	1
S. Marino:	1
Taranto:	1

TOT.: 99



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[November 2015](#) Volume 96, Pages 246–251

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Advanced life support provider course in Italy: A 5-year nationwide study to identify the determinants of course success

[Federico Semeraro](#)^{a,b,*}  , [Andrea Scapigliati](#)^{a,c,1}, [Gaetano Tammaro](#)^{a,b,2}, [Umberto Olcese](#)^{d,3}, [Erga L. Cerchiari](#)^{a,b,4}, [Giuseppe Ristagno](#)^{a,e,5}

Studi epidemiologici ACC in Italia

Resuscitation (2007) 72, 52–58



ELSEVIER

CLINICAL PAPER

RESUSCITATION



www.elsevier.com/locate/resuscitation

Increased survival despite a reduction in out-of-hospital ventricular fibrillation in north-east Italy^{☆,☆☆}

Fulvio Kette*, Tommaso Pellis

The Pordenone Cardiac Arrest Cooperative Study Group (PACS)¹

Resuscitation. 2017 Oct;119:48-55. doi: 10.1016/j.resuscitation.2017.06.020. Epub 2017 Jun 24.

Incidence and outcome of in-hospital cardiac arrest in Italy: a multicentre observational study in the Piedmont Region.

Radeschi G¹, Mina A², Berta G³, Fassiola A⁴, Roasio A⁵, Urso F⁶, Penso R³, Zummo U⁷, Berchiolla P⁸, Ristagno G⁹, Sandroni C¹⁰; Piedmont IHCA Registry Initiative.

Eur J Emerg Med. 2010 Aug;17(4):234-6. doi: 10.1097/MEJ.0b013e328330b3ef.

Emergency Medical System response to out-of-hospital cardiac arrest in Milan, Italy.

Morici N¹, De Luca G, Lucenteforte E, Chatenoud L, Fontana G, La Vecchia C, Sesana G.

Acta Biomed. 2019 Sep 13;90(9-S):64-70. doi: 10.23750/abm.v90i9-S.8710.

Out-of-hospital cardiac arrest (OHCA) Survey in Lombardy: data analysis through prospective short time period assessment.

Villa GF¹, Kette F, Balzarini F, Riccò M, Manera M, Solaro N, Pagliosa A, Zoli A, Migliori M, Sechi GM, Odono A, Signorelli C.

Resuscitation. 2014 Dec;85(12):e193-4. doi: 10.1016/j.resuscitation.2014.09.015. Epub 2014 Oct 1.

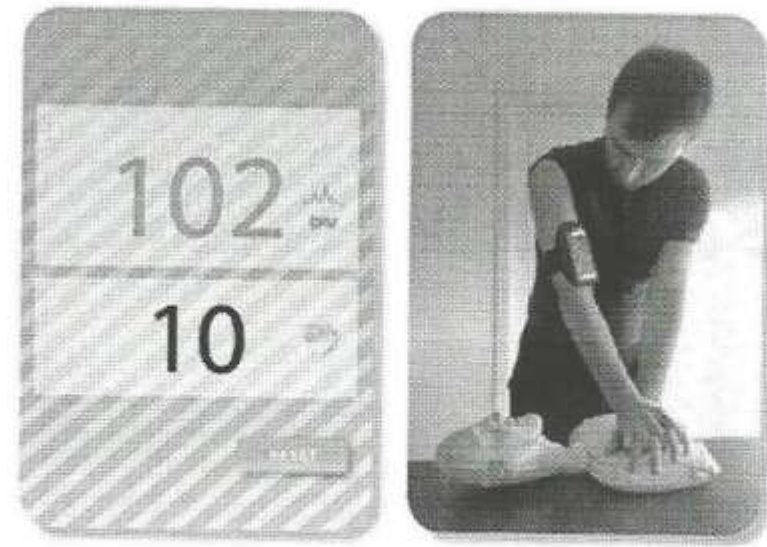
The "Italian Registry of Cardiac Arrest - RIAC", a National achievement to portrait the Italian reality and to contribute to the wider European vision by "EuReCa".

Ristagno G¹, Semeraro F², Radeschi G³, Pellis T⁴, Gordini G⁵, Ferro S⁶, Cerchiari E².

Author information

- 1 Italian Resuscitation Council, Bologna, Italy; IRCCS-Istituto di Ricerche Farmacologiche "Mario Negri", Milano, Italy. Electronic address: gristag@gmail.com.
- 2 Italian Resuscitation Council, Bologna, Italy; Anaesthesia and Intensive Care, Maggiore Hospital, Bologna, Italy.
- 3 Italian Resuscitation Council, Bologna, Italy; Anaesthesia and Intensive Care, S. Luigi Gonzaga Hospital, Torino, Italy.
- 4 Italian Resuscitation Council, Bologna, Italy; Anaesthesia, Intensive Care and Emergency Medical Service, Santa Maria degli Angeli Hospital, Pordenone, Italy.
- 5 Italian Resuscitation Council, Bologna, Italy; Intensive Care and Emergency Medical Service, Maggiore Hospital, Bologna, Italy.
- 6 Assessorato per la Salute Pubblica, Regione Emilia-Romagna, Bologna, Italy.

Basic Life Support e qualita' della CPR





[Resuscitation](#). 2014 Jul;85(7):e109-10. doi: 10.1016/j.resuscitation.2014.03.306. Epub 2014 Apr 4.

Relive: a serious game to learn how to save lives.

[Semeraro F](#)¹, [Frisoli A](#)², [Ristagno G](#)³, [Loconsole C](#)⁴, [Marchetti L](#)⁵, [Scapigliati A](#)⁶, [Pellis T](#)⁷, [Grieco N](#)⁸, [Cerchiari EL](#)⁹.



[Resuscitation](#). 2009 Apr;80(4):489-92. doi: 10.1016/j.resuscitation.2008.12.016. Epub 2009 Feb 8.

Virtual reality enhanced mannequin (VREM) that is well received by resuscitation experts.

[Semeraro F](#)¹, [Frisoli A](#), [Bergamasco M](#), [Cerchiari EL](#).

Author information

1 Department of Anaesthesia and Intensive Care, Ospedale Maggiore, Bologna, Italy. rareseed@mclink.it

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July 2017 Volume 116, Pages 27-32

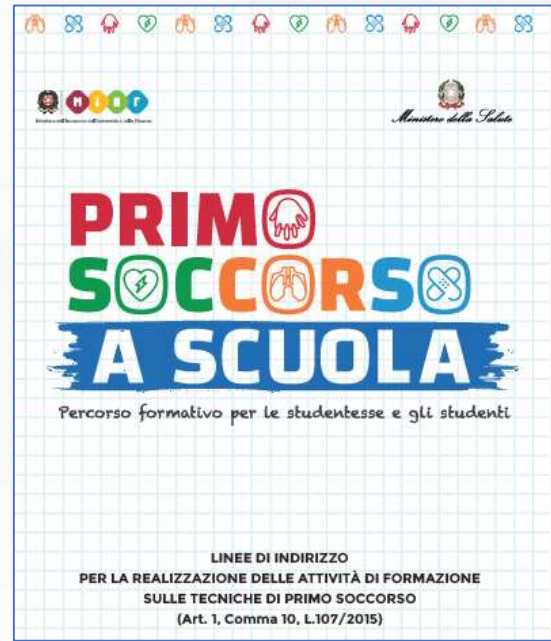
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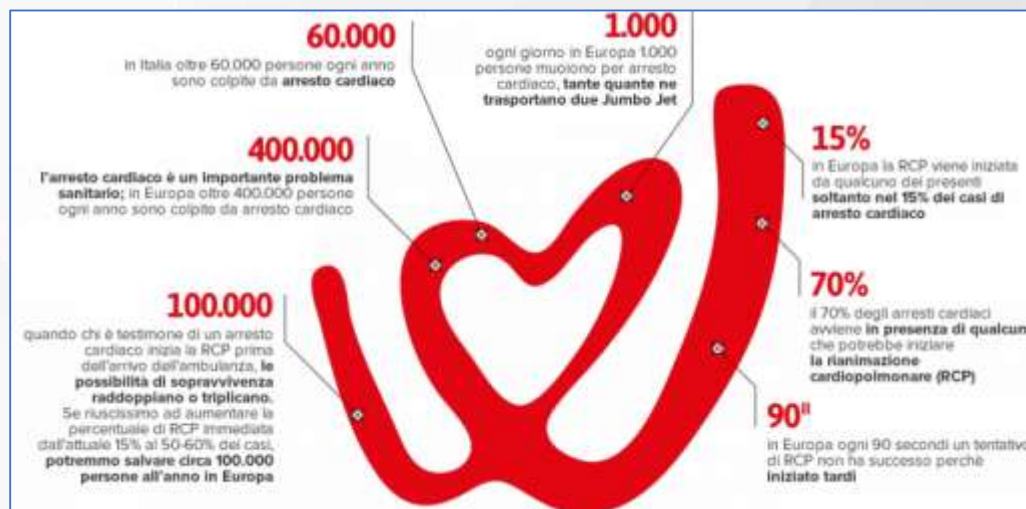
To read this article in full, please review your options for gaining access at the bottom of the page.

Kids (learn how to) save lives in the school with the serious game Relive

[Federico Semeraro](#)^{a,b,*}, [Antonio Frisoli](#)^c, [Claudio Loconsole](#)^c, [Nicola Mastronicola](#)^c, [Fabio Stroppa](#)^c, [Giuseppe Ristagno](#)^{a,d}, [Andrea Scapigliati](#)^{a,e}, [Luca Marchetti](#)^f, [Erga Cerchiari](#)^{a,b}

La Buona Scuola Legge 107/2015





Resuscitation. 2013 Aug;84(8):e85-6. doi: 10.1016/j.resuscitation.2013.03.033. Epub 2013 Apr 11.

Social networks as a tool to promote the week of cardiac arrest awareness "Viva!" in Italy.

Cerchiari EL, Grieco N, Pellis T, Ristagno G, Scapigliati A, Semeraro F.



Int J Cardiol. 2019 Jul 8. pii: S0167-5273(19)32072-8. doi: 10.1016/j.ijcard.2019.07.016. [Epub ahead of print]

Final-year medical students' knowledge of cardiac arrest and CPR: We must do more!

Baldi E¹, Contri E², Bailoni A³, Rendic K⁴, Turcan V⁵, Donchev N⁶, Nadareishvili I⁷, Petrica AM⁸, Yerolemidou I⁹, Petrenko A¹⁰, Franke J¹¹, Labbe G¹², Jashari R¹³, Pérez Dalí A¹⁴, Borg J¹⁵, Hertenberger N¹⁶, Böttiger BW¹⁷.

Author information

- 1 Department of Molecular Medicine, Section of Cardiology, University of Pavia, Pavia, Italy; Cardiac Intensive Care Unit, Arrhythmia and Electrophysiology and Experimental Cardiology, Fondazione IRCCS Policlinico San Matteo, Pavia, Italy; Pavia nel Cuore, Pavia, Italy; Robbio nel Cuore, Robbio, Italy. Electronic address: enrico.baldi@unipv.it.
- 2 Pavia nel Cuore, Pavia, Italy; Robbio nel Cuore, Robbio, Italy; AREU Azienda Regionale Emergenza Urgenza-AAT Pavia c/o Fondazione IRCCS Policlinico San Matteo Hospital, Pavia, Italy.
- 3 Segretariato Italiano Studenti in Medicina - SISM, Pavia, Italy.
- 4 Srpska Medical Students' International Committee-SaMSIC, Banja Luka, Bosnia and Herzegovina.
- 5 Asociația Studenților și Rezidenților în Medicină-ASRM, Chișinău, Republic of Moldova.
- 6 Association of Medical Students in Bulgaria-AMSB, Sofia, Bulgaria.
- 7 Georgian Medical Students Association-GMSA, Tbilisi, Georgia; David Tvildiani Medical University, Tbilisi, Georgia.
- 8 Federația Asociațiilor Studenților în Medicină din România-FASMR, Bucharest, Romania.
- 9 Cyprus Medical Students' Association-CyMSA, Nicosia, Cyprus.
- 10 Ukrainian Medical Students' Association-UKRMSA, Kiev, Ukraine.
- 11 Austrian Medical Students' Associations-AMSA, Wien, Austria.
- 12 Association Nationale des Etudiants en Médecine de France-ANEMF, Montrouge, France.
- 13 Kosova's Organization of Medical Students-KOMS, Pristina, Kosovo.
- 14 Federación Española de Estudiantes de Medicina para la cooperación internacional-IFMSA Spain, Valladolid, Spain.
- 15 Malta Medical Students' Association-MMSA, Msida, Malta.
- 16 German Medical Students' Association-BVMD, Berlin, Germany.
- 17 Department of Anaesthesiology and Intensive Care Medicine, University Hospital of Cologne, Köln, Germany; European Resuscitation Council, Niel, Belgium.

Defibrillazione Precoce (DP), DAE, Progetti PAD



Pistolese M: Esperienze cliniche con il defibrillatore automatico esterno. *Cardiostimolazione* 1990;8:1

Vergassola R et al: Semi-automatic external defibrillator (AED): the Italian experience. *Resuscitation* 1994;28:S18

Lotto A et al: Defibrillatori automatici esterni nel trattamento dell'arresto cardiaco improvviso. *Cardiologia* 1994;426-33

Destro A e al: Automatic external defibrillators in the hospital as well? *Resuscitation* 1996;31:39

DAE a polizia, VVFF, FFOO

DAE affidati a a polizia (Piacenza Progetto Vita PPV)
vs EMS.

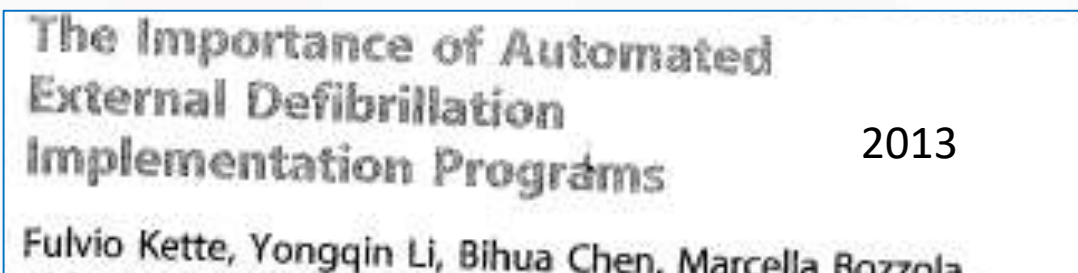
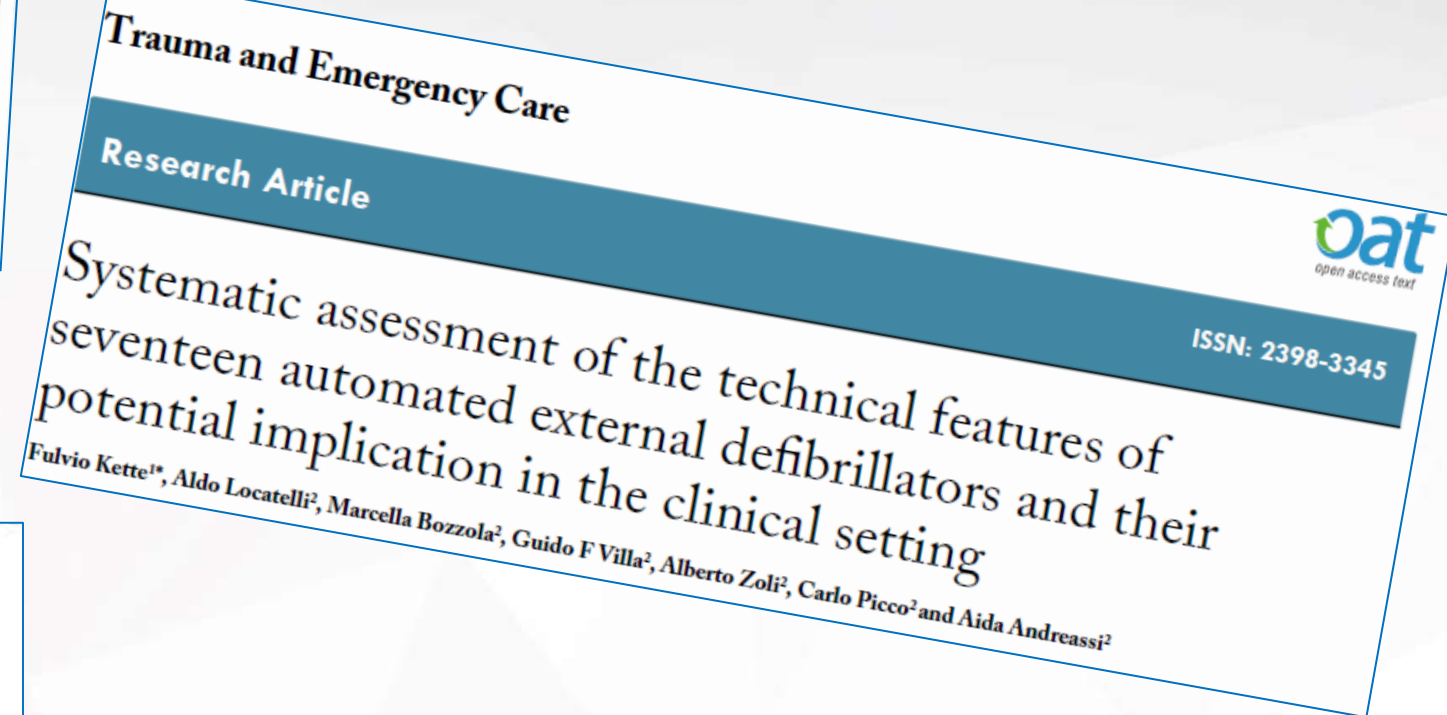
Tripling survival from SCA via early defibrillation
without traditional education in CPR.

Capucci A et al, Circulation 2002;106:1070.

Alla festa dell'Unità **Defibrillatore sulla «pantera» lo salva dall'infarto**

PIACENZA Deve la vita a un defibrillatore in dotazione alla polizia piacentina, un uomo di 73 anni colpito da infarto l'altra sera, mentre ballava alla festa dell'Unità di Podenzano, a una quindicina di chilometri da Piacenza.

I DAE: un mondo tecnologico ancora sconosciuto



Amplitude Spectrum Area (AMSA)

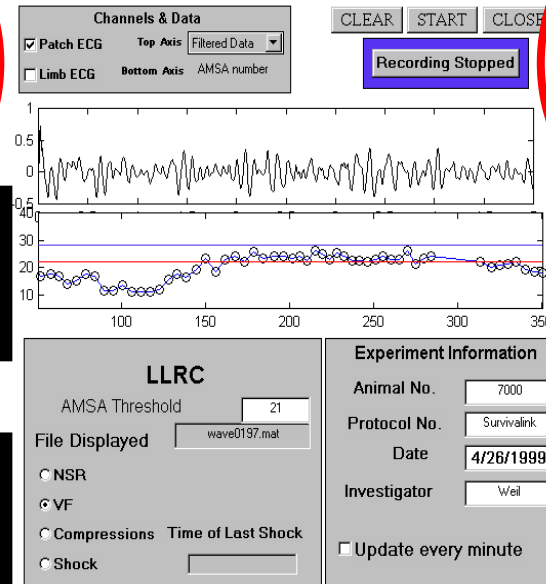


AMSA

18

SHOCK

COMPRESS

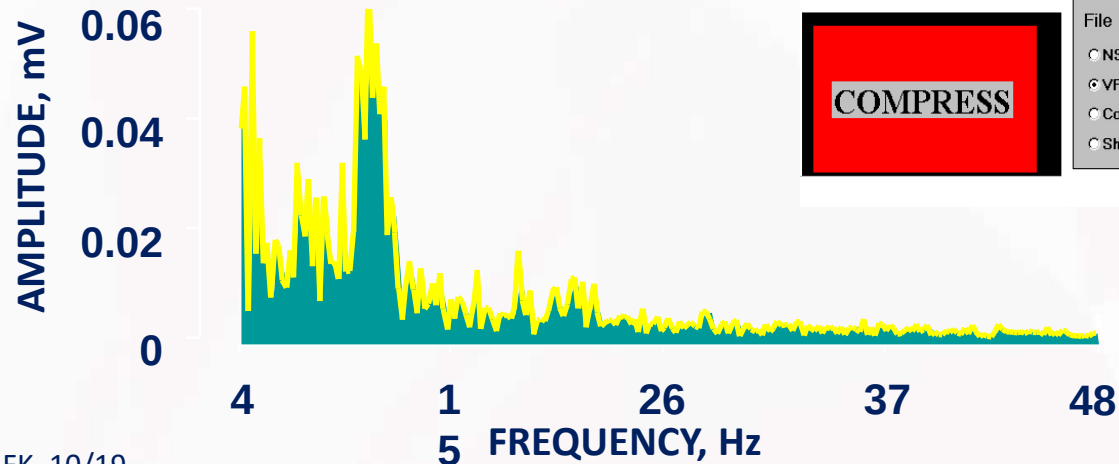
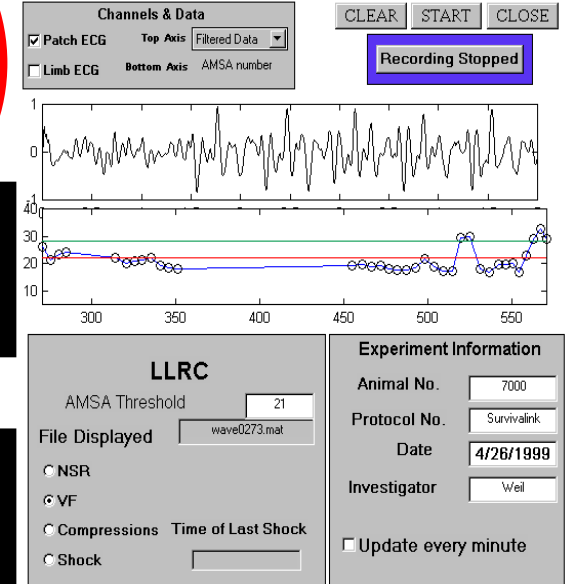


AMSA

29

SHOCK

COMPRESS



Resuscitation. 2013 Dec;84(12):1697-703. doi: 10.1016/j.resuscitation.2013.08.017. Epub 2013 Sep 1.

Amplitude spectrum area to guide resuscitation-a retrospective analysis during out-of-hospital cardiopulmonary resuscitation in 609 patients with ventricular fibrillation cardiac arrest.

Ristagno G¹, Li Y, Fumagalli E, Finzi A, Quan W.

Curr Opin Crit Care. 2016 Jun;22(3):199-205. doi: 10.1097/MCC.0000000000000297.

See through ECG technology during cardiopulmonary resuscitation to analyze rhythm and predict defibrillation outcome.

Affatato R¹, Li Y, Ristagno G.

Author information

¹ aLaboratory of Cardiopulmonary Pathophysiology, IRCCS - Istituto di Ricerche Farmacologiche "Mario Negri", Milan, Italy bSchool of Biomedical Engineering, Third Military Medical University and Chongqing University, Chongqing, China.

Resuscitation. 2017 Nov;120:A5-A6. doi: 10.1016/j.resuscitation.2017.09.011. Epub 2017 Sep 18.

Amplitude spectrum area: The "clairvoyance" during resuscitation in the era of predictive medicine.

Ruggeri L¹, Semeraro F², Ristagno G³.

Author information

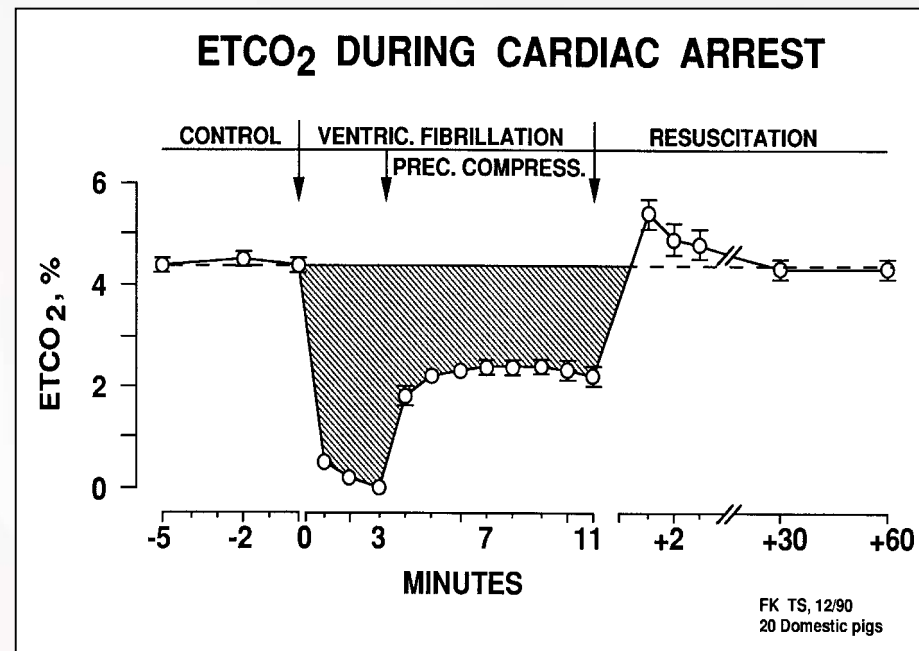
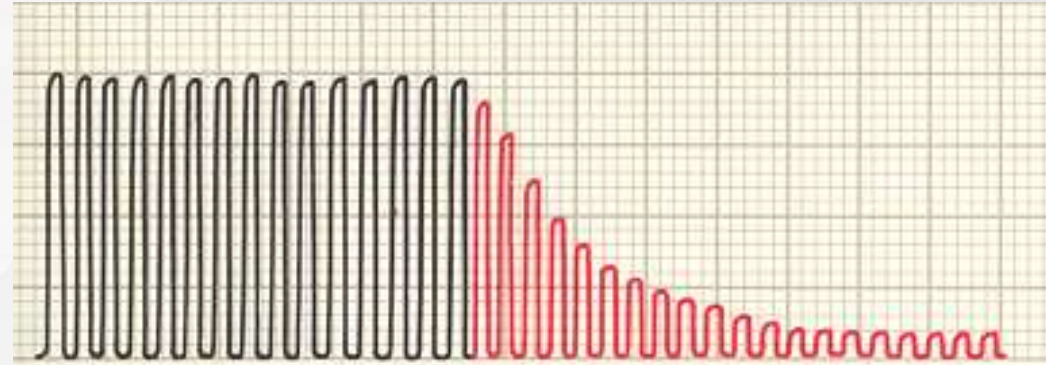
¹ IRCCS-Istituto di Ricerche Farmacologiche "Mario Negri", Milan, Italy.

² Department of Anesthesia and Intensive Care, Maggiore Hospital, Bologna, Italy.

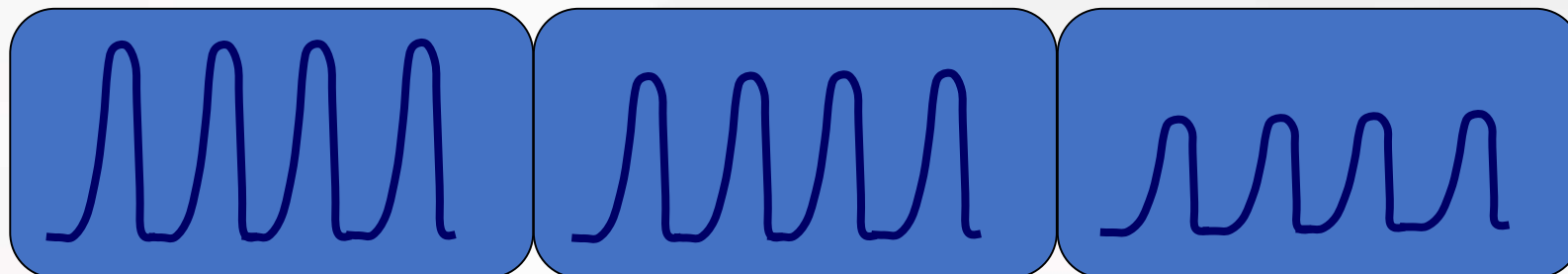
³ IRCCS-Istituto di Ricerche Farmacologiche "Mario Negri", Via La Masa 19, Milan 20156, Italy. Electronic address: gristag@gmail.com.

Capnography in cardiac arrest

- **Kalenda Z.** The capnogram as a guide to the efficacy of cardiac massage. Resuscitation, 1978;6:259.
- **Falk JL, Rackow EC, Weil MH.** End Tidal carbon dioxide concentration during cardiopulmonary resuscitation. NEJM, 1988;318:607



The condom experiment (MH Weil et al, 1987)



Pressione $\neq$ Flusso



ETCO₂



Resuscitation 27 (1994) 1–8

RESUSCITATION



Review article

ETCO₂ monitoring during low flow states: clinical aims and limits

Giulio Trillò^a, Martin von Planta^b, Fulvio Kette^c

^aDepartment of Research and Anaesthesia, ^bDepartment of Internal Medicine, University Hospital/Kantonsspital Basel, Petersgraben 4, CH-4031 Basel, Switzerland

^cDepartment of Anesthesia and Intensive Care, University Hospital of Cattinara, Strada di Fiume, 34100 Trieste, Italy

RESUSCITATION

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Capnography during cardiac arrest

Claudio Sandroni*, , Paolo De Santis, Sonia D'Arrigo

Istituto Anestesiologia e Rianimazione Università Cattolica del Sacro Cuore, Fondazione Policlinico Universitario "Agostino Gemelli" IRCCS, Largo Francesco Vito, 1 – 00168 Rome, Italy

November 2018 Volume 132, Pages 73–77



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Resuscitation

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

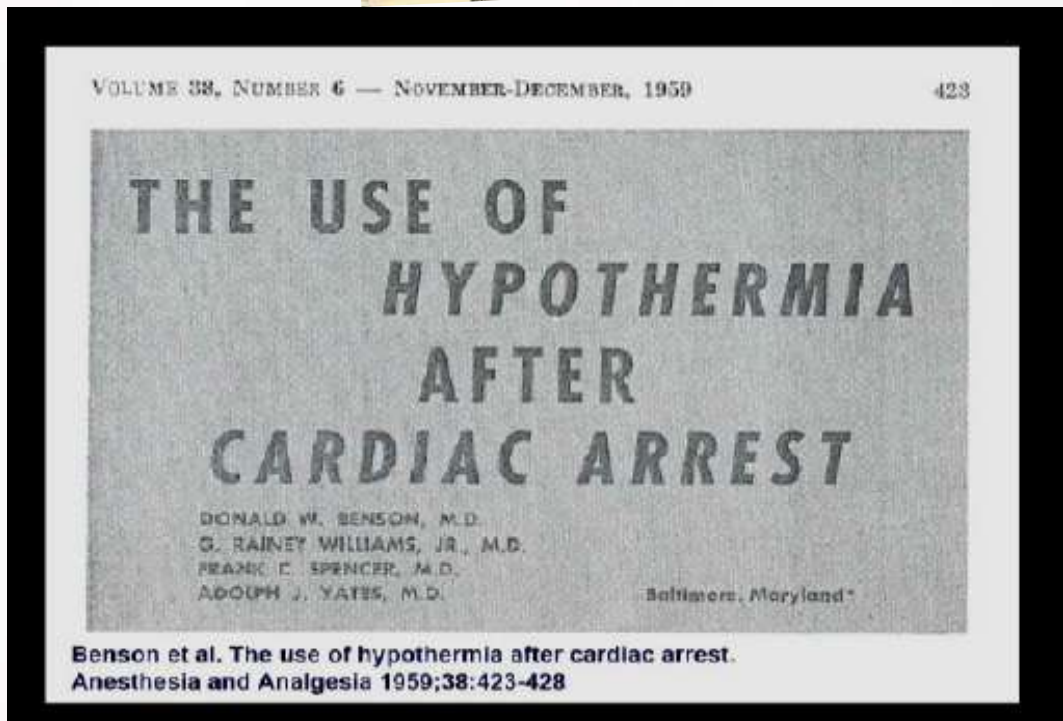
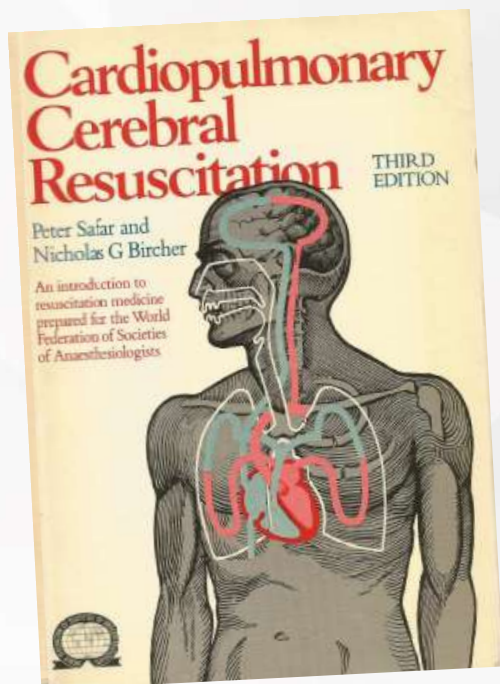


**EUROPEAN
RESUSCITATION
COUNCIL**

Editorial

End-tidal CO₂ to detect recovery of spontaneous circulation during cardiopulmonary resuscitation: We are not ready yet





HEART - LUNG RESUSCITATION

I FIRST AID: OXYGENATE THE BRAIN IMMEDIATELY

IF UNCONSCIOUS
 Airway - **TILT HEAD BACK**

IF NOT BREATHING
 Breathe - **INFLATE LUNGS 3-5 TIMES, MAINTAIN HEAD TILT**
MOUTH-TO-MOUTH, MOUTH-TO-NOSE, MOUTH-TO-ADJUNCT, BAG-MASK

• **FEEL PULSE**
 • IF PRESENT - CONTINUE LUNG INFLATIONS
 • IF ABSENT -

Circulate - COMPRESS HEART ONCE A SECOND.
 ALTERNATE 2-3 LUNG INFLATIONS WITH 15 STERNAL COMPRESSIONS UNTIL SPONTANEOUS PULSE RETURNS.

For 2 operators

for physicians only

II START SPONTANEOUS CIRCULATION

Drugs - EPINEPHRINE: 1.0mg (10 CC OF 1:1000) I.V. OR 0.5-mg INTRACARDIAC. REPEAT LARGER DOSE IF NECESSARY.
SODIUM BICARBONATE: APPROXIMATELY 3.75 G/50 CC (1/2 DOSE IN CHILDREN) I.V. REPEAT EVERY 5 MINUTES IF NECESSARY.

E. K. G. -
 • **FIBRILLATION:** EXTERNAL ELECTRIC DEFIBRILLATION. REPEAT SHOCK EVERY 1-3 MINUTES UNTIL FIBRILLATION REVERSED.
 • **IF ASYSTOLE OR WEAK BEATS:** EPINEPHRINE OR CALCIUM I.V.

Fluids - I.V. PLASMA, DEXTRAN, SALINE
Do not interrupt cardiac compressions and ventilation. Tracheal intubation only when necessary.
 AFTER RETURN OF SPONTANEOUS CIRCULATION USE VASOPRESSORS AS NEEDED.
 e.g. NOREPINEPHRINE (Levophed) I.V. DRIP

III SUPPORT RECOVERY

Gauge Hypothermia Intensive Care (circled in red)

EVALUATE AND TREAT CAUSE OF ARREST
START WITHIN 30 MINUTES IF NO SIGN OF CNS RECOVERY

SUPPORT VENTILATION: TRACHEOTOMY, PROLONGED CONTROLLED VENTILATION, GASTRIC TUBE AS NECESSARY

SUPPORT CIRCULATION
CONTROL CONVULSIONS
MONITOR

(physician-specialist)

Figure 1. Heart-lung resuscitation (cardiopulmonary-cerebral resuscitation). First composition in 1961, Pittsburgh, PA. Reproduced with permission from Safar P. Community-wide CPR. J Iowa Medical Society 1964 (Nov); pp 629-635.

Am J Emerg Med. 1998 Jan;16(1):17-25.

Mild protective and resuscitative hypothermia for asphyxial cardiac arrest in rats.

Xiao F¹, Safar P, Radovsky A.

— Author information

1 Safar Center for Resuscitation Research (SCRR), University of Pittsburgh, PA 15260, USA.

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Safar PJ, Kochanek PM.

ORIGINAL ARTICLE

Mild Therapeutic Hypothermia to Improve the Neurologic Outcome after Cardiac Arrest

The Hypothermia after Cardiac Arrest Study Group*

N Engl J Med. 2002 Feb 21;346(8):549-56



N Engl J Med. 2013 Dec 5;369(23):2197-206 **ORIGINAL ARTICLE**
Targeted Temperature Management at 33°C versus 36°C after Cardiac Arrest
Niklas Nielsen, M.D., Ph.D., Jørn Wetterslev, M.D., Ph.D., Tobias Cronberg, M.D., Ph.D., David Erlinge, M.D., Ph.D., Yvan Gasche, M.D., Christian Hassager, M.D., D.M.Sci., Janneke Horn, M.D., Ph.D., Jan Hovdenes, M.D., Ph.D., Jesper Kjaergaard, M.D., D.M.Sci., Michael Kuiper, M.D., Ph.D., Tommaso Pellis, M.D., Pascal Stammet, M.D., et al., for the TTM Trial Investigators*



Journal of the American College of Cardiology

Volume 65, Issue 19, 19 May 2015, Pages 2104-2114



Original Investigation

Neuron-Specific Enolase as a Predictor of Death or Poor Neurological Outcome After Out-of-Hospital Cardiac Arrest and Targeted Temperature Management at 33°C and 36°C

Pascal Stammet MD *✉, Olivier Collignon PhD †, Christian Hassager MD, DMSc ‡, Matthew P. Wise MD, DPhil §, Jan Hovdenes MD, PhD ¶, Anders Aneman MD, PhD ¶, Janneke Horn MD, PhD #, Yvan Devaux PhD **, David Erlinge MD, PhD ††, Jesper Kjaergaard MD, DMSc ‡, Yvan Gasche MD ‡‡, Michael Wanscher MD, PhD §§, Tobias Cronberg MD, PhD ||, Hans Friberg MD, PhD ¶¶, Jørn Wetterslev MD, PhD ‡‡‡, Tommaso Pellis MD ***, Michael Kuiper MD, PhD †††, Georges Gilson PhD ‡‡‡ ... Niklas Nielsen MD, PhD

RESEARCH

Critical Care

Open Access

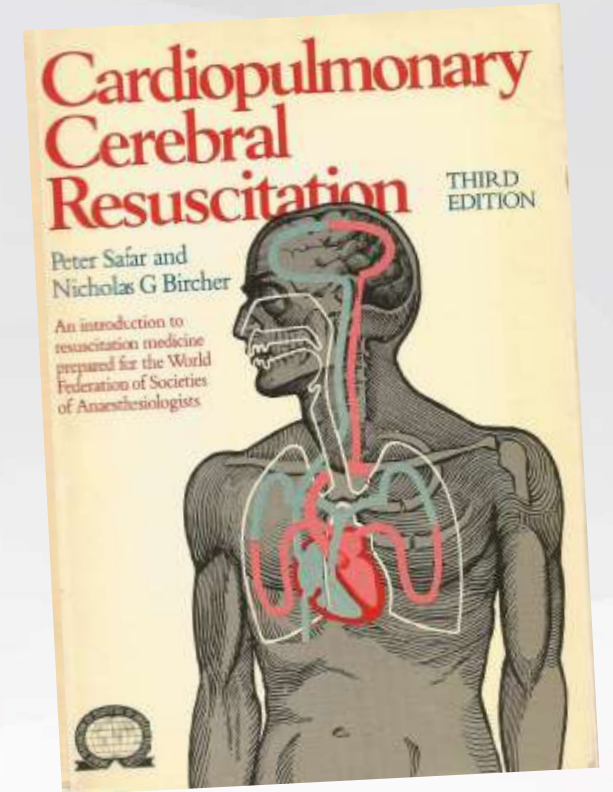
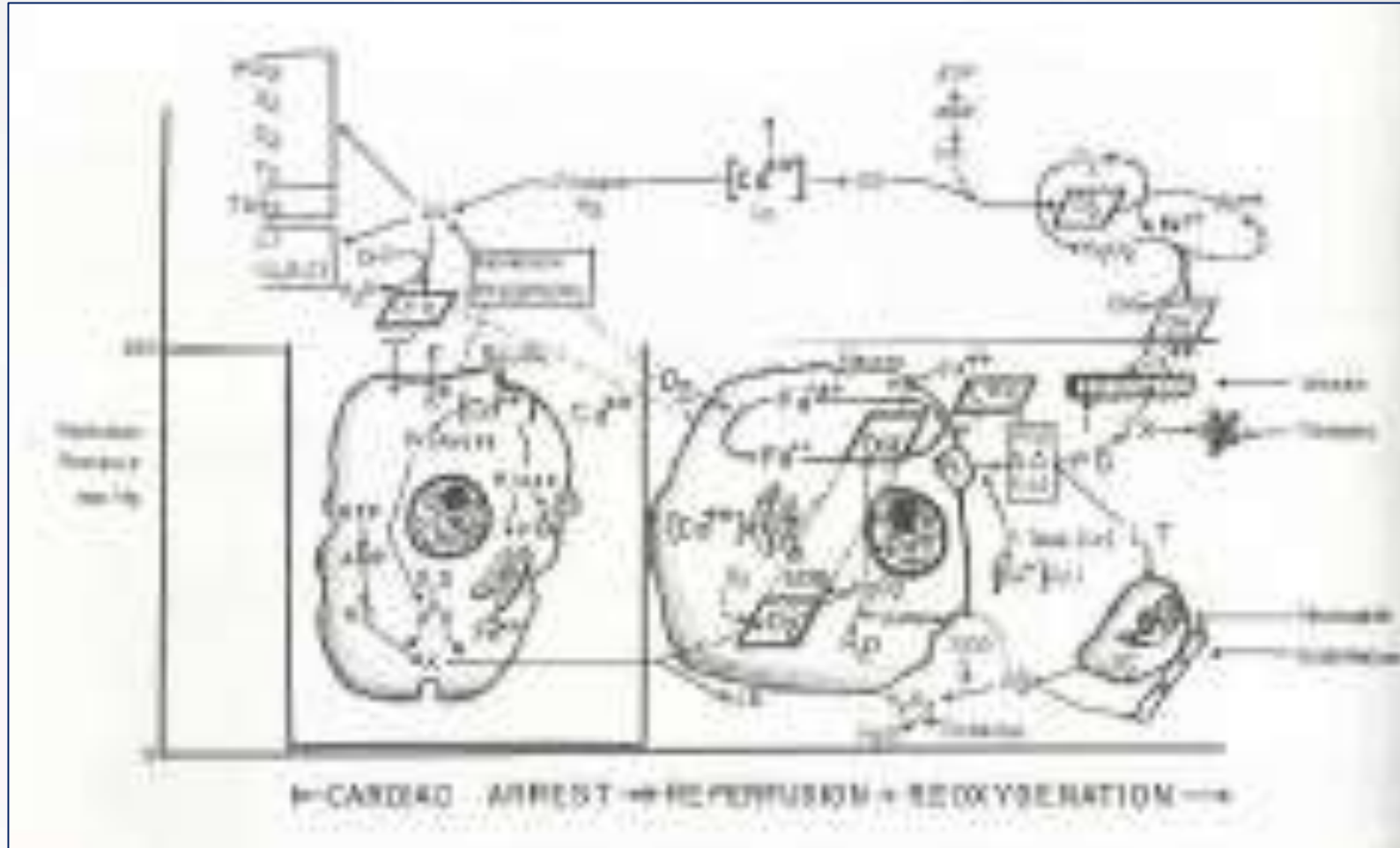


Protein S100 as outcome predictor after out-of-hospital cardiac arrest and targeted temperature management at 33 °C and 36 °C

Pascal Stammet^{1*}, Josef Dankiewicz², Niklas Nielsen³, François Fays⁴, Olivier Collignon⁴, Christian Hassager⁵, Michael Wanscher⁶, Johan Undén⁷, Jørn Wetterslev⁸, Tommaso Pellis⁹, Anders Aneman¹⁰, Jan Hovdenes¹¹, Matt P. Wise¹², Georges Gilson¹³, David Erlinge², Janneke Horn¹⁴, Tobias Cronberg¹⁵, Michael Kuiper¹⁶, Jesper Kjaergaard⁵, Yvan Gasche¹⁷, Yvan Devaux¹⁸, Hans Friberg¹⁹ and Target Temperature Management after Out-of-Hospital Cardiac Arrest (TTM) trial investigators



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[Neurophysiology and neuroimaging accurately predict poor neurological outcome within 24 hours after cardiac arrest: The ProNeCA prospective multicentre prognostication study.](#)

Scarpino M, Lolli F, Lanzo G, Carrai R, Spalletti M, Valzania F, Lombardi M, Audenino D, Celani MG, Marrelli A, Contardi S, Peris A, Amantini A, Sandroni C, Grippo A; ProNeCA Study Group. *Resuscitation*. 2019 Oct;143:115-123. doi: 10.1016/j.resuscitation.2019.07.032. Epub 2019 Aug 7.

PMID: 31400398

[Similar articles](#)

[Death after awakening from post-anoxic coma: the "Best CPC" project.](#)

Taccone FS, Horn J, Storm C, Cariou A, Sandroni C, Friberg H, Hoedemaekers CA, Oddo M. *Crit Care*. 2019 Apr 3;23(1):107. doi: 10.1186/s13054-019-2405-x.

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[Quantitative versus standard pupillary light reflex for early prognostication in comatose cardiac arrest patients: an international prospective multicenter double-blinded study.](#)

Oddo M, Sandroni C, Citerio G, Miroz JP, Horn J, Rundgren M, Cariou A, Payen JF, Storm C, Stammet P, Taccone FS. *Intensive Care Med*. 2018 Dec;44(12):2102-2111. doi: 10.1007/s00134-018-5448-6. Epub 2018 Nov 26.

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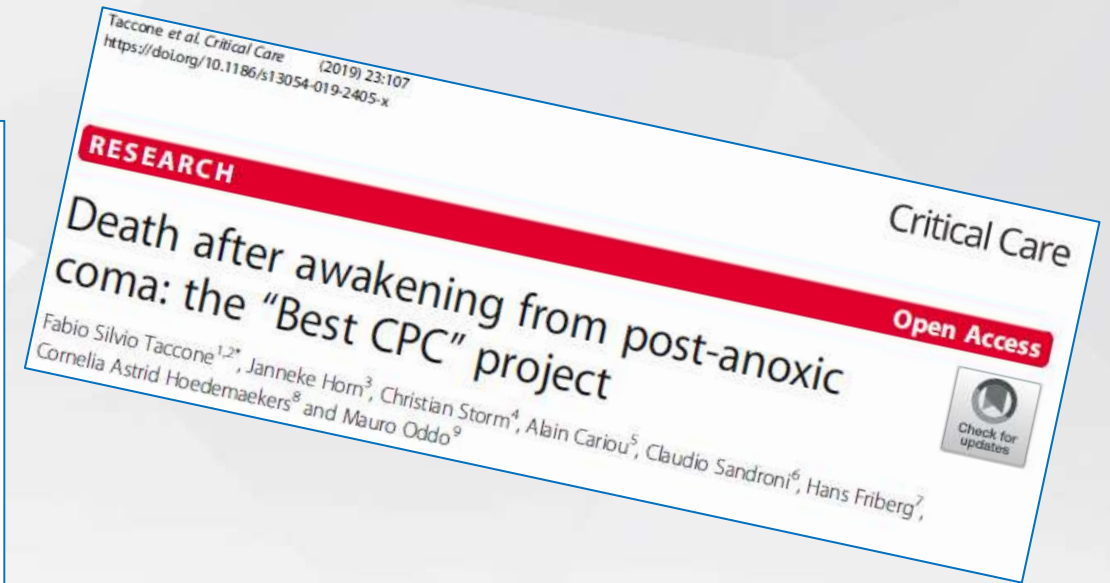
Sandroni C, D'Arrigo S, Nolan JP. *Crit Care*. 2018 Jun 5;22(1):150. doi: 10.1186/s13054-018-2060-7. Review.

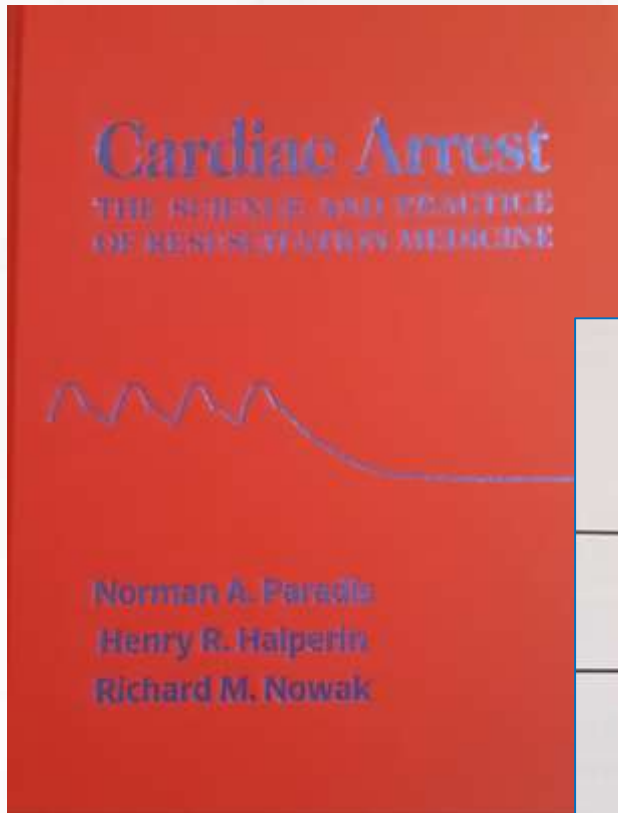
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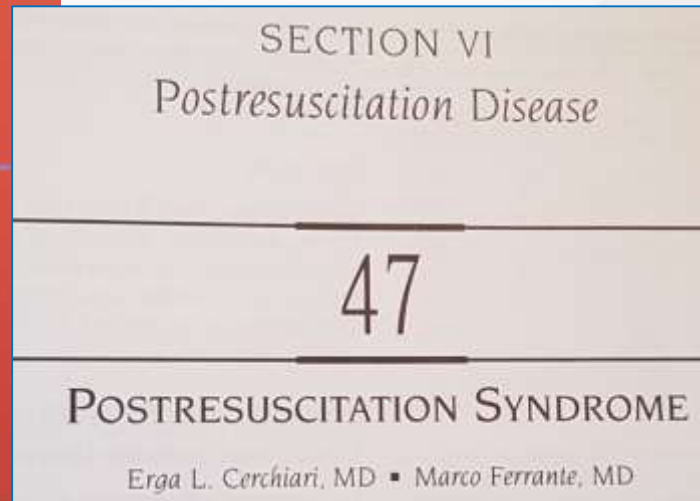
[Predictors of favourable outcome after in-hospital cardiac arrest treated with extracorporeal cardiopulmonary resuscitation: A systematic review and meta-analysis.](#)

D'Arrigo S, Cacciola S, Dennis M, Jung C, Kagawa E, Antonelli M, Sandroni C. *Resuscitation*. 2017 Dec;121:62-70. doi: 10.1016/j.resuscitation.2017.10.005. Epub 2017 Oct 8. Review.

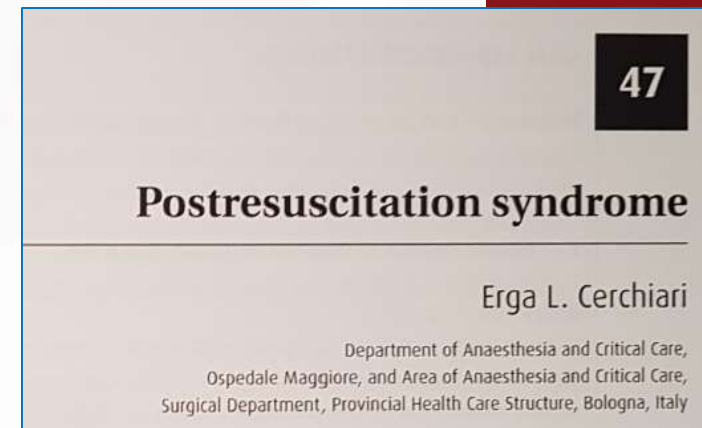
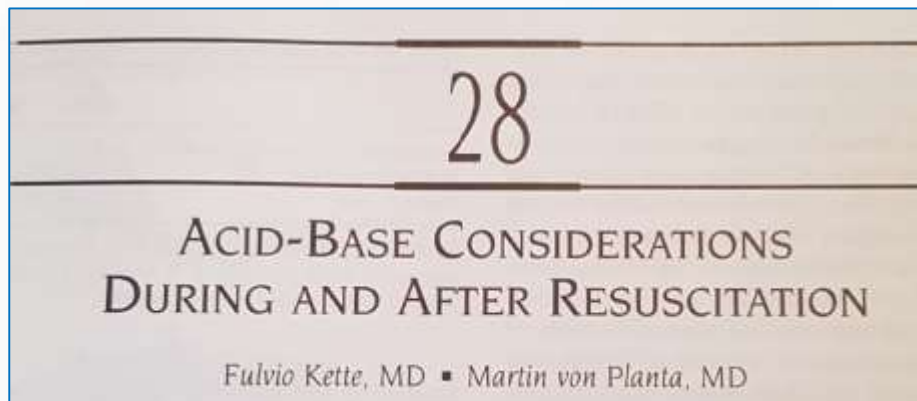
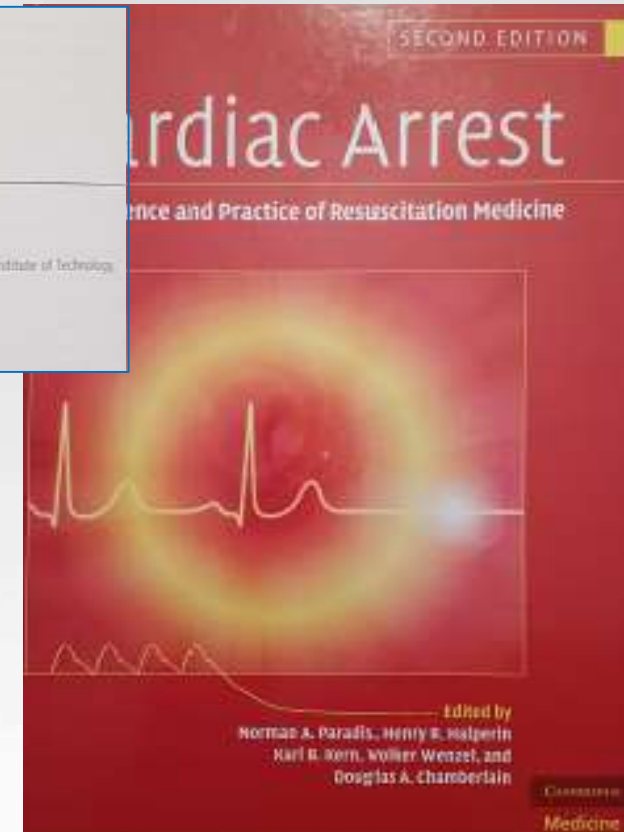




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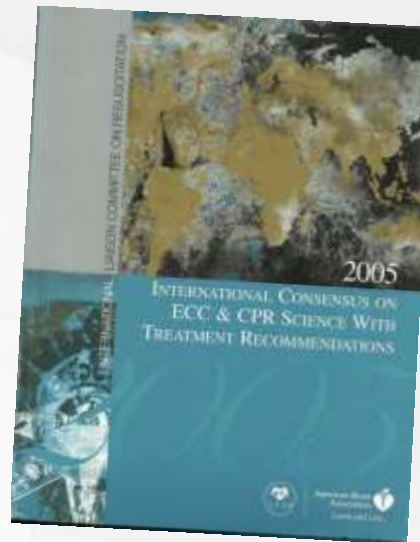
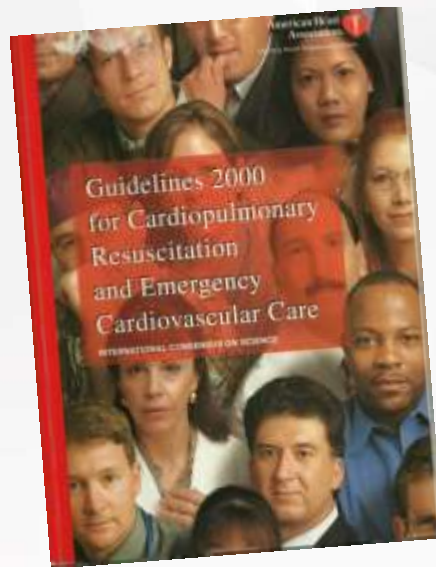


2007





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- **Consensus Conferences ILCOR:**

- **1994:** Erga Cerchiari

- **2000:** Fulvio Kette (in collaborazione anche con gli Expert Members di Innsbruck)

- **2005:** Erga Cerchiari, Fulvio Kette, Manrico Gianolio

- **2010:** Alessandro Barelli, Erga Cerchiari (Editorial Board), Claudio Sandroni (Editorial Board), Fulvio Kette, Peter Fenici, Giuseppe Ristagno, Tommaso Pellis, Claudio Sandroni, Tommaso Sanna, Andrea Scapigliati

- **2015:** Giuseppe Ristagno, Tommaso Pellis, Claudio Sandroni

ILCOR Consensus Conference 2018-2019



Fellows dello European Resuscitation Council

Alessandro BARELLI

Paolo BIBAN

Manrico GIANOLIO

Fulvio KETTE

Giuseppe RISTAGNO

Andrea SCAPIGLIATI



Erga CERCHIARI

Tommaso PELLIS

Claudio SANDRONI

Federico SEMERARO

Eur J Emerg Med. 2006 Aug;13(4):197-203.

The first Italian trauma registry of national relevance: methodology and initial results.

Di Bartolomeo S¹, Nardi G, Sanson G, Gordini G, Michelutto V, Ciminello M, Giugni A, Cingolani E, Cancellieri F.

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Emergency medical service treated out-of-hospital cardiac arrest: Identification of weak links in the chain-of-survival through an epidemiological study.

Sanson G¹, Verduno J², Zambon M³, Trevi R³, Caggegi GD³, Di Bartolomeo S⁴, Antonaglia V³.

Author information

- 1 School of Nursing, University of Trieste, Italy gsanson@units.it.
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- 3 Emergency Medical Service System, Azienda per i Servizi Sanitari, Trieste, Italy.
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Department of Clinical Governance, Agenzia Sanitaria e Sociale Regionale Emilia Romagna, Italy.



Internal and Emergency Medicine

pp 1-9 | [Cite as](#)

Impact of 'synchronous' and 'asynchronous' CPR modality on quality bundles and outcome in out-of-hospital cardiac arrest patients

Authors

Authors and affiliations

Gianfranco Sanson , Giuseppe Ristagno, Giuseppe Davide Caggegi, Athina Patsoura, Veronica Xu, Marco Zambon,

Early Hum Dev. 2011 Mar;87 Suppl 1:S9-11. doi: 10.1016/j.earlhumdev.2011.01.002. Epub 2011 Jan 19.

New cardiopulmonary resuscitation guidelines 2010: managing the newly born in delivery room.

Biban P¹, Filipovic-Grcic B, Biarent D, Manzoni P; International Liaison Committee on Resuscitation (ILCOR); European Resuscitation Council (ERC); American Heart Association (AHA); American Academy of Pediatrics (AAP).

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"Doctor, Is My Child Going to Survive?" Does a New Score to Predict Mortality Following Pediatric In-Hospital Cardiac Arrest "GO-FAR" Enough?

Biban P¹.

Resuscitation. 2010 Dec;81(12):1607-8. doi: 10.1016/j.resuscitation.2010.09.010. Epub 2010 Oct 20.

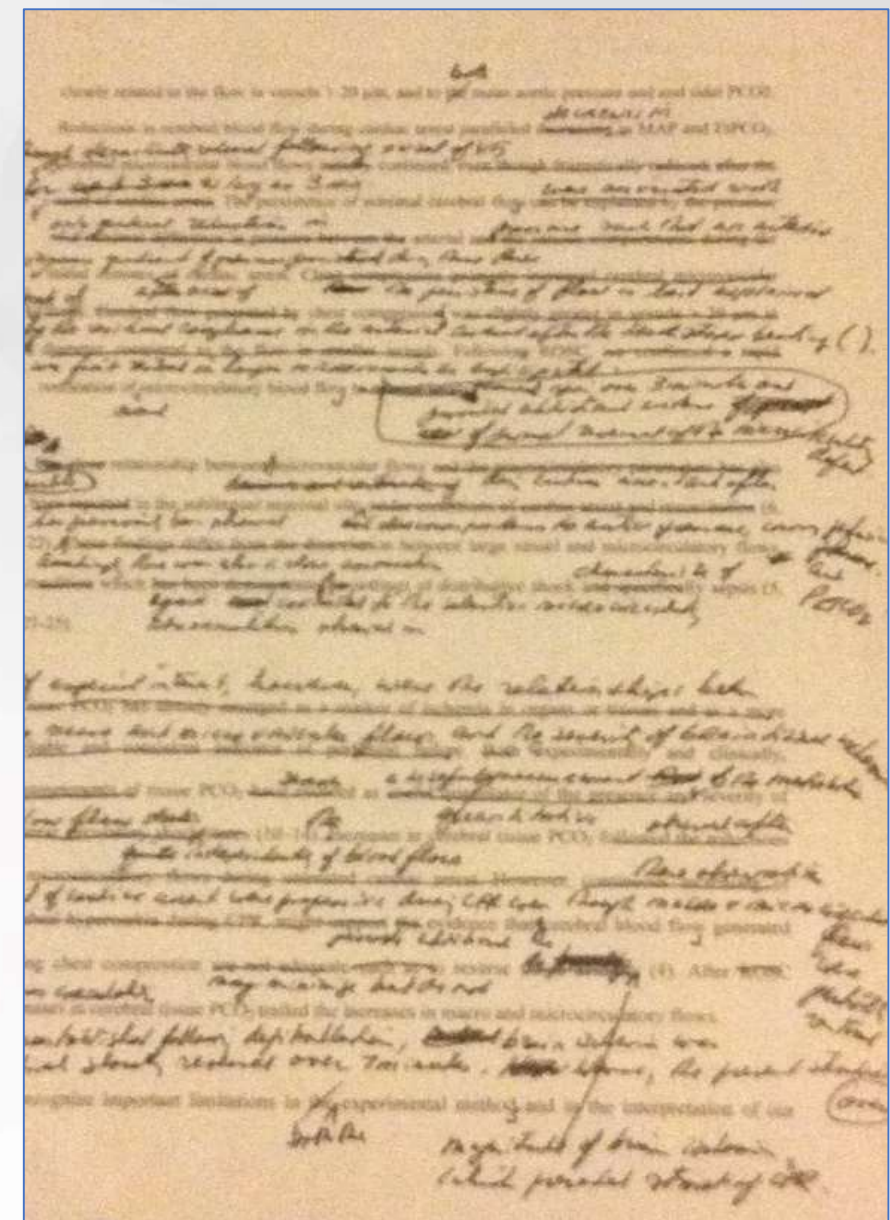
The four-stage approach to teaching skills: the end of a dogma?

Barelli A, Scapigliati A.



IRC 1.0

IRC X. ...



Max Weil's Japanese fellow with over 65 versions before finalizing the manuscript



Dare uno sguardo indietro nel tempo non significa avere una visione nostalgica del passato, ma vuol dire conoscere la propria storia ed apprendere quanto si e' fatto per crescere ancora e costruire un futuro migliore

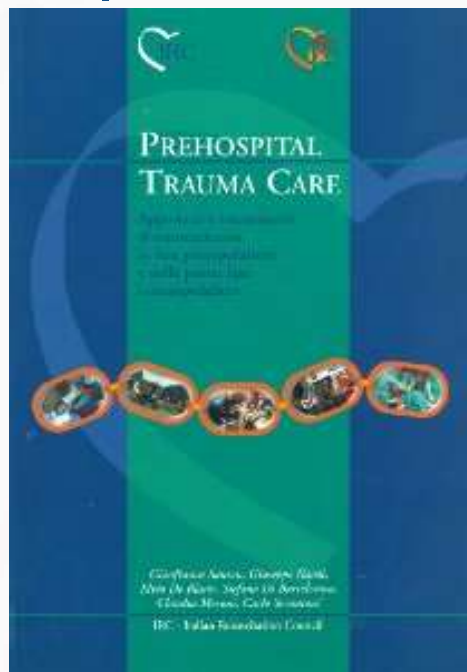
Fulvio Kette

*Io c'ero
Noi ci siamo*



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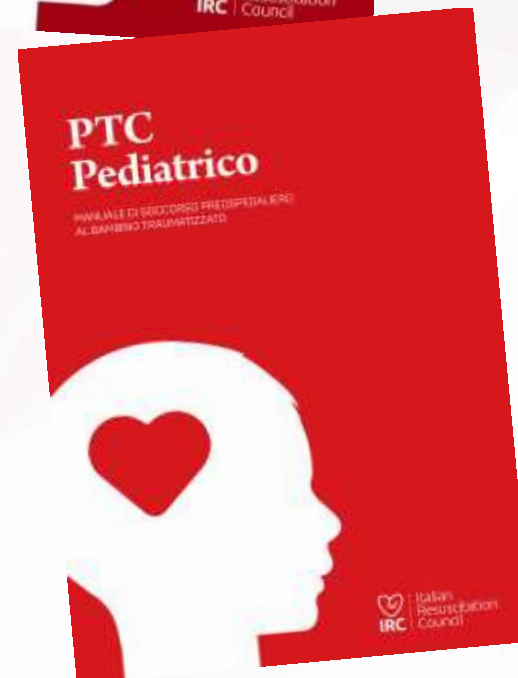


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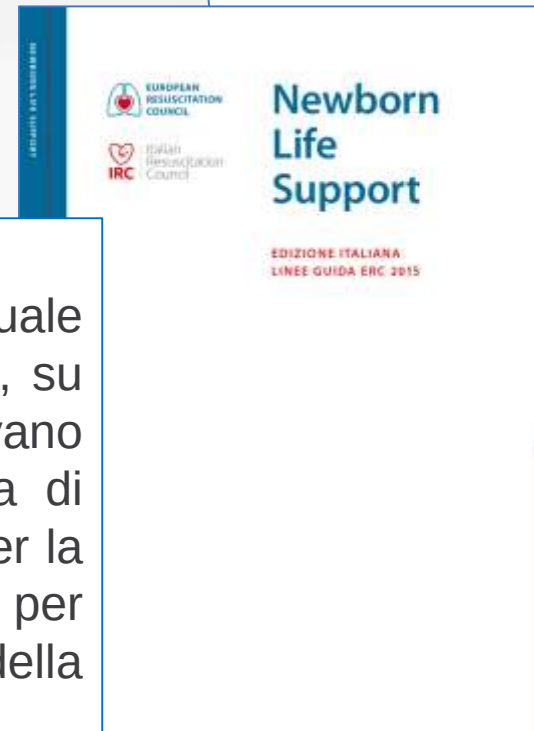
Manuali Edizioni IRC (2)





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Manuali Edizioni IRC (3)



IRC EDIZIONI

Nel 1997 è stata pubblicata la prima edizione del manuale ACLS di Italian Resuscitation Council. Quel manuale, su cui molti di noi hanno studiato e che conservano gelosamente, è rimasto poi una semplice rilegatura di fotocopie ma porta con sé un grande valore storico per la rianimazione cardiopolmonare italiana ed affettivo per quanti si sono impegnati agli albori della diffusione della cultura dell'arresto cardiorespiratorio in Italia.



Available online at www.sciencedirect.com

Resuscitation

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Letter to the Editor

Settembre 2019

A system to save lives in Italy: A cultural challenge for community and government



A System to Save Lives

10 proposals by the Italian Resuscitation Council

Interventions to increase potential rescuers and bystander CPR

- 1 Awareness campaigns on cardiac arrest and CPR
- 2 Mandatory first aid education in schools for students of all ages according to their capabilities
- 3 Mandatory BLS courses for students during the last year of the high school
- 4 Mandatory BLS training while obtaining driving license
- 5 Legal protection for lay rescuers performing bystander CPR and AED use with respect to all the events affecting the victim and other persons involved

Interventions to improve early defibrillation

- 1 Regional and national cardiac arrest registers managed by EMS and health Departments
- 2 Inventory of all AEDs currently available but unknown to EMS, offering maintenance service
- 3 Increase AED density and registration through mandatory placement in specific sites and encouraging purchase through tax reduction (applied only if the devices are registered and available for public use)
- 4 A single nationwide smartphone application for "rescuer recruitment and AED location" based on local databases
- 5 Mandatory protocol for dispatch-assisted pre-arrival instructions to initiate CPR, initiate compression only and to operate an AED

AED - Automated External Defibrillator
 BLS - Basic Life Support
 CPR - Cardiac Resuscitation
 EMS - Emergency Medical Services



www.ircouncil.it

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AED use before EMS arrival: When survival becomes a matter of law and system in Italy, which can be improved.

Baldi E¹, Savastano S¹.

Author information

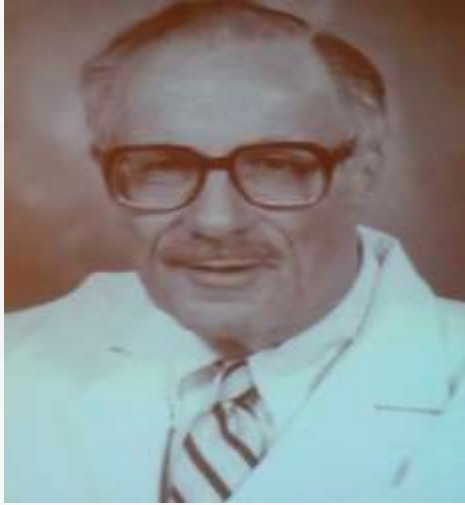
¹ Division of Cardiology Fondazione IRCCS Policlinico San Matteo 27100 Pavia, Italy.



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