

Congresso Nazionale IRC

2019

11 • 12 OTTOBRE
Centro Congressi Veronafiere



Italian
Resuscitation
Council



Congresso Nazionale IRC
2019
11 - 12 OTTOBRE
Centro Congressi VeronaFiere

La Tecnologia....Per Formare



Federico Semeraro, FERC
Ospedale Maggiore, Bologna

 | Italian
Resuscitation
Council



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2019
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Conflict of Interest Part 1



ILCOR Basic Life Support Task Force Member
SEC BLS co-chair & FERC European Resuscitation Council
Fellow European Resuscitation Council (ERC)
Past-President Italian Resuscitation Council
EuReCa National Coordinator
Star Wars & Star Trek addicted

Dedicaed to the «Next Generation»

Viola è nata il 14 Febbraio 2018

14 Febbraio 2018 Prima foto con iPhone

20 Aprile 2018 Dorme con la musica di Spotify



Aumentata

Diario del Capitano

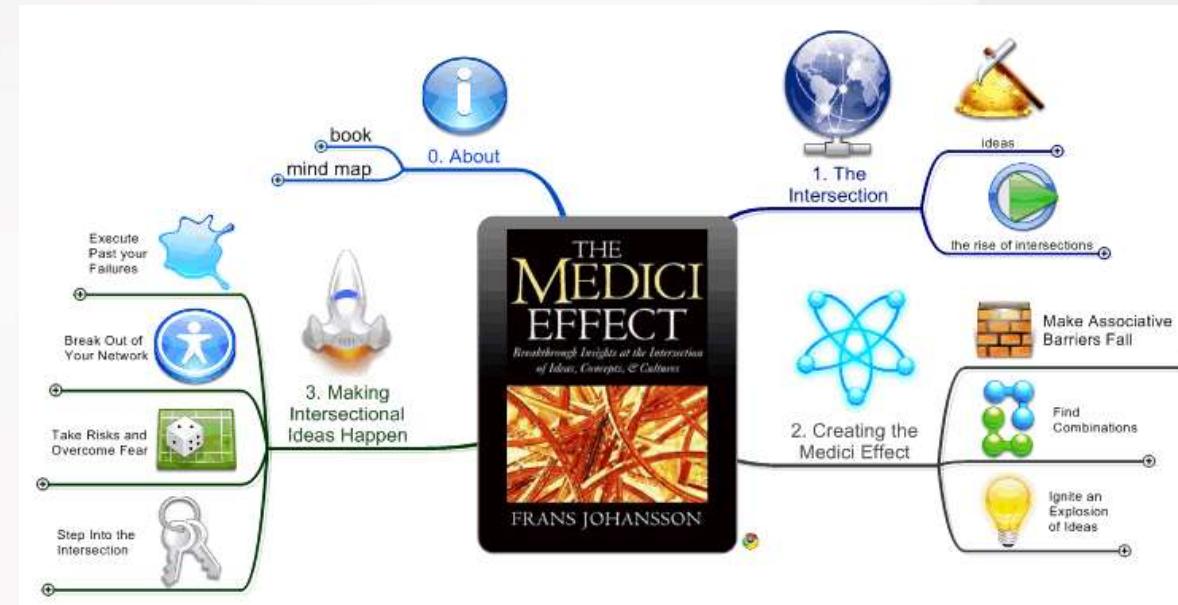


Effetto Medici
App & Serious Games
Virtual Reality
Progetti futuri

Spazio, ultima frontiera. Eccovi i viaggi dell'astronave *Enterprise* durante la sua missione quinquennale, diretta all'esplorazione di nuovi mondi, alla ricerca di altre forme di vita e di civiltà, fino ad arrivare laddove nessun uomo è mai giunto prima.



Effetto Medici 2007







Apps & Serious Games 2009



Tanto tempo fa, in una galassia lontana lontana...



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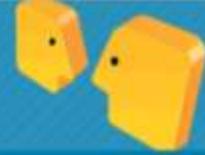
iCPR: a new and friendly application for cardiopulmonary resuscitation training



Gennaio 2009



Luglio 2009

iCPR 

[home](#) [who we are](#) [news](#) [bibliography](#) [multimedia](#) [contactus](#)

iCPR - iPhone App for CPR training

iCPR is a iPhone App dedicated to CPR training for lay persons and healthcare professionals.

iCPR is capable to detect the rate of chest compressions using the built-in accelerometer of iPhone/iPod touch and displays both the rate and count of compressions. This feature makes iCPR a perfect App companion for both instructors and students.

Accuracy of iCPR was tested in a study carried out at the Maggiore Hospital in Bologna, Italy and presented at ESICM 2009 and ERC 2009.



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Ottobre 2009

iCPR: a new and friendly application for cardiopulmonary resuscitation training





iCPR: a new and friendly application for cardiopulmonary resuscitation training



Semeraro et al. Resuscitation 82 (2011) 436–441



iCPR: a new and friendly application for cardiopulmonary resuscitation training



Federico Semeraro

Consultant in Anaesthesia and Intensive Care, Maggiore Hospital Bologna Italy

CPR training Virtual Reality Education Serious games

<input type="checkbox"/>	TITOLO			CITATA DA	ANNO
<input type="checkbox"/>	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			317	2016
	JT Gräsner, R Lefering, RW Koster, S Masterson, BW Böttiger, J Herlitz, ... Resuscitation 105, 188-195				
<input type="checkbox"/>	Retention of CPR performance in anaesthetists			143	2006
	F Semeraro, L Signore, EL Cerchiari Resuscitation 68 (1), 101-108				
<input type="checkbox"/>	iCPR: a new application of high-quality cardiopulmonary resuscitation training			86	2011
	F Semeraro, F Taggi, G Tammaro, G Imbriaco, L Marchetti, EL Cerchiari Resuscitation 82 (4), 436-441				
<input type="checkbox"/>	European Resuscitation Council guidelines for resuscitation: 2017 update			55	2018
	GD Perkins, TM Olasveengen, I Maconochie, J Soar, J Wyllie, R Greif, ... Resuscitation 123, 43-50				



iCPR to Viva! CPR 2013

The image shows four panels from the iCPR to Viva! CPR 2013 app:

- Panel 1:** Shows a person performing CPR on a patient. The text below reads: "Se trovi una persona priva di sensi, chiamala e scuotila leggermente".
- Panel 5:** Shows a person pointing upwards with a speech bubble containing a heart symbol.
- Panel 8:** Shows a person sitting next to a patient with a laptop, presumably using it to guide the user. The text below reads: "Se hai un defibrillatore, accendilo e ti dirà cosa fare".
- Panel MENU:** Shows a red heart icon above a green ECG waveform with the numbers "11" and "108" displayed prominently. Below the waveform are two buttons: "HELP" and "RESET".



Viva! 2013

La vita nelle tue mani
come affrontare un arresto cardiaco

1 Se trovi una persona priva di sensi o non è perfetta avvicinata d'istinto e scuotila leggermente.

2 Se non risponde, piegati la testa all'indietro e abbassa il mento. Controlla il respiro e controlla se respira.

3 Se non risponde e non respira normalmente, chiedi aiuto a un passante e telefona al 118 o 112.

4 Se non ti consigli di non sospendere, se non accadono le voci vicine.

5 Per prendere un defibrillatore.

6 Sovrapponi le mani al centro del torace.

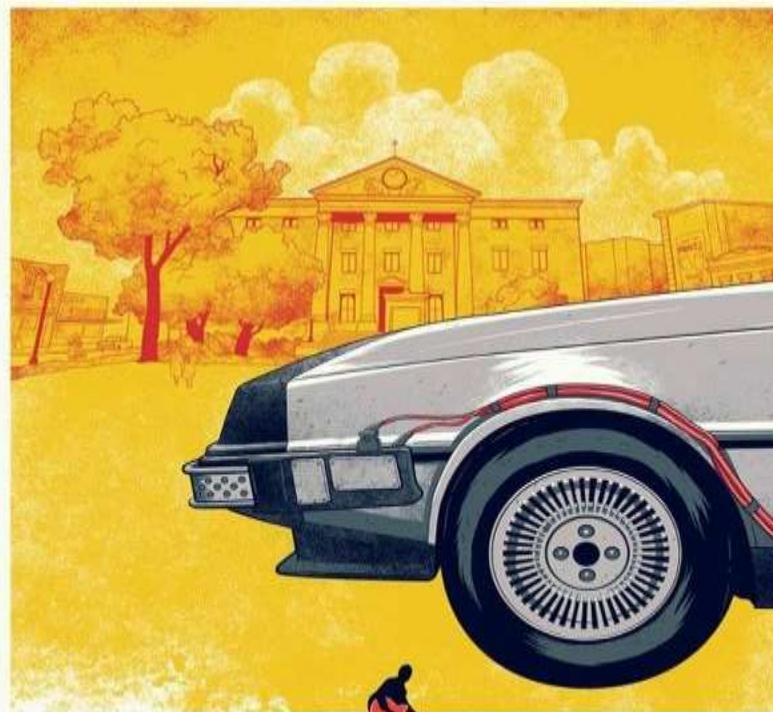
7 Con le braccia tese, comprieni profondamente, comprieni 12 volte al secondo e senza interruzioni. Lascia tranne il tacco tra le compressioni senza staccare le mani.

8 Se hai un defibrillatore accendilo e digli cosa fare.

viva! la settimana per la rianimazione cardiopolmonare
www ircouncil it/viva

KIDS SAVE LIVES | IRC | Italian Resuscitation Council





STEVEN SPIELBERG presents
**Back to the
FUTURE**

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MICHAELE J. FOX • CHRISTOPHER LLOYD • LEA THOMPSON • CRISPIN GLOVER • ROBERT ZEMKE • STEPHEN SINGER
PRODUCED BY STEPHEN SINGER • DIRECTED BY ROBERT ZEMKE • SCREENPLAY BY STEPHEN SINGER
MUSIC BY JOHN WILLIAMS • EDITORIAL SUPERVISOR, ROBERT ZEMKE • CINEMATOGRAPHY, STEPHEN SINGER
COSTUME DESIGNER, ROBERT ZEMKE • PROPS, ROBERT ZEMKE • PROPS, ROBERT ZEMKE
COSTUME DESIGNER, ROBERT ZEMKE • PROPS, ROBERT ZEMKE



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**BACK TO THE
FUTURE** III

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COSTUME DESIGNER, ROBERT ZEMKE • PROPS, ROBERT ZEMKE

RELLIVE

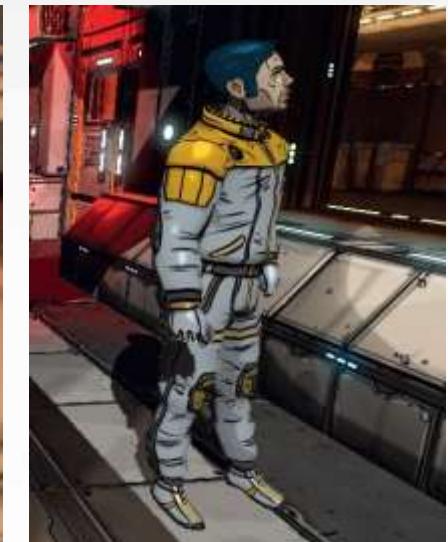
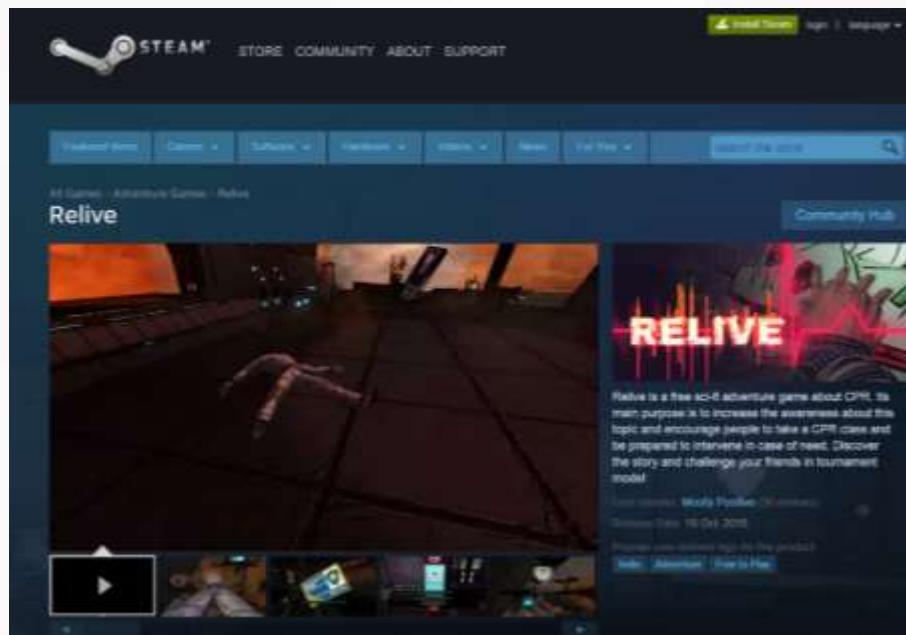


Relive Game 2011

Relive is a free sci-fi adventure game about CPR. Its main purpose is to increase the awareness about this topic and encourage people to take a CPR class and be prepared to intervene in case of need.

Discover the story and challenge your friends in tournament mode!

Language: Italian, English, Dutch





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Relive VR 2011





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



Month 1-2

65 students

Month 3-4

65 students

15 students
dropped out

Month 8

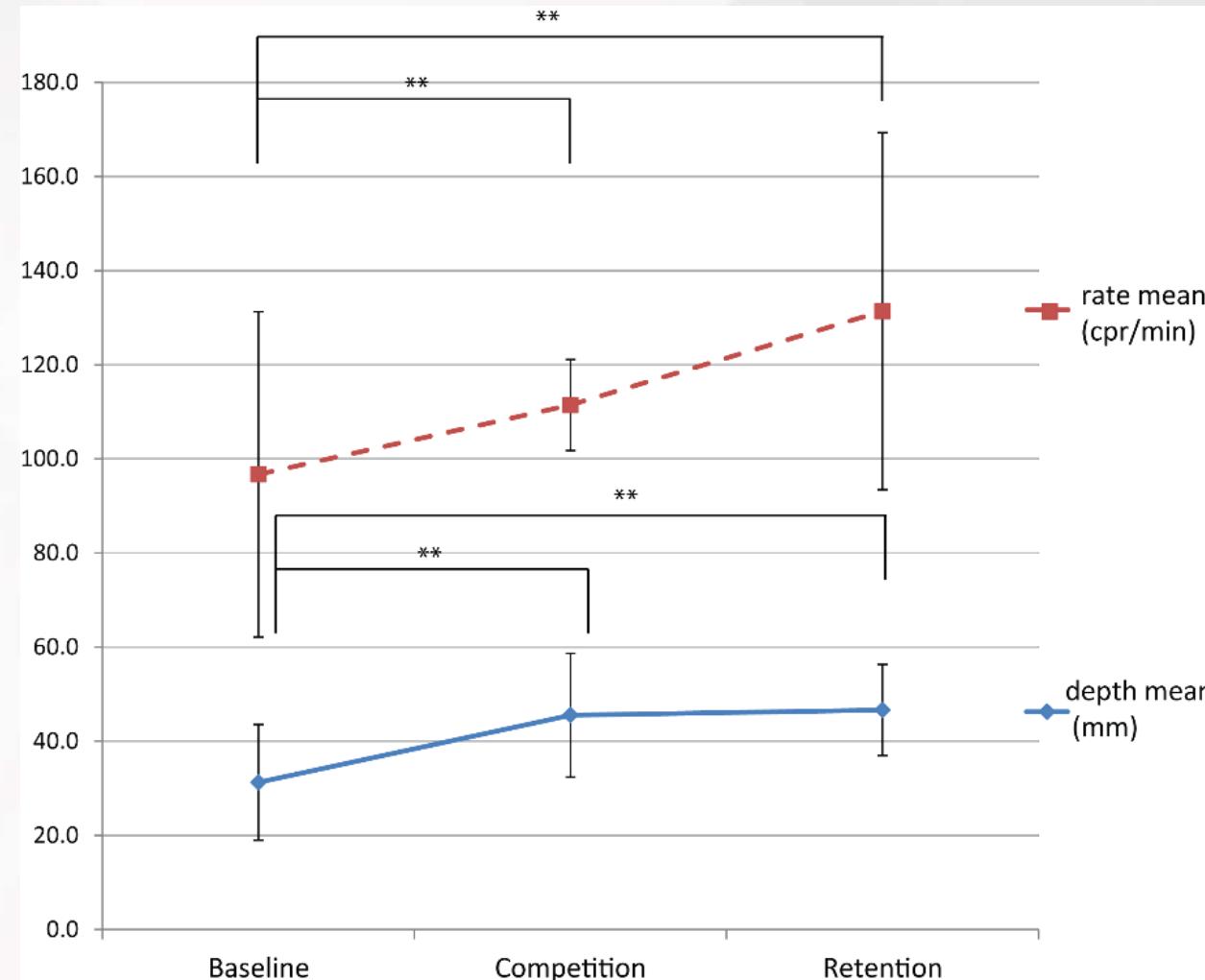
50 students

Competition

Retention



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

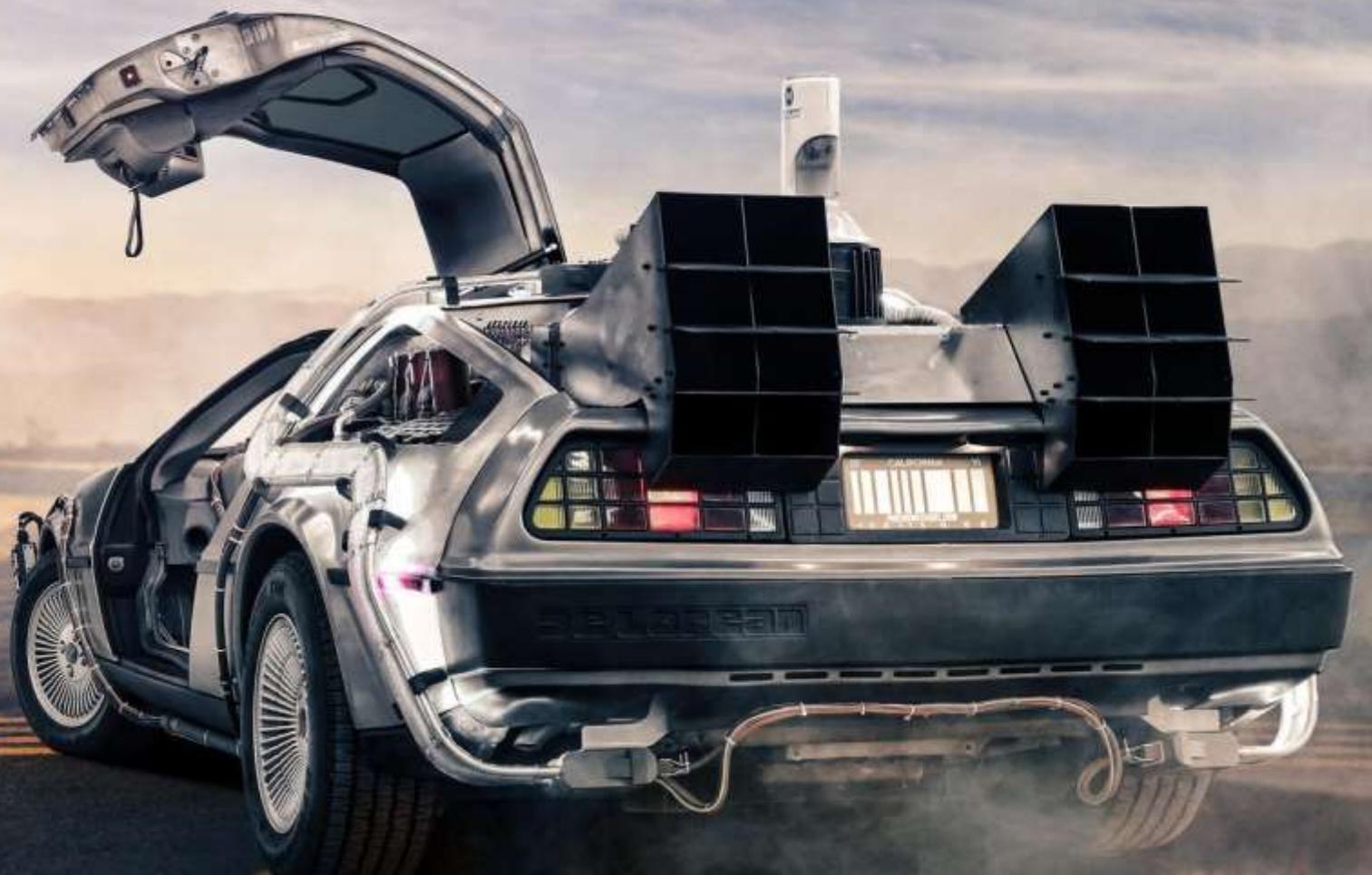




Kids (learn how to) save lives in the school with the serious game Relive

Conclusions

Relive Tournament Mode was able to improve significantly awareness in terms of knowledge of CA and CC skills in a group of schoolchildren without any previous experience in CPR. Relive was able to improve retention of knowledge and was able to ensure retention of CC depth skill at 3 months after only one session of competition. The RTM was perceived as easy to use and providing an effective feedback. Relive could be useful as a tool to spread CPR knowledge and skills in the schools.





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Un picnic mozzafiato 2015

App / Fiaba multimediale per bambini (6-10 anni)

App iOS & Android.

Topic: Arresto Cardiaco e Ostruzione vie aeree

Language: Italiano, Inglese, Francese, Tedesco, Olandese





Un picnic mozzafiato

App / Fiaba multimediale per bambini (6-10 anni)



Federico Semeraro shared a memory.

7 hrs ·

...



Elastico

15 October 2015 ·

Qualche mese fa ci contatta un tipo per realizzare un'app. L'ennesimo. Sentiamo... Il tipo appartiene a un'associazione no profit che si propone di diffondere la cultura del primo soccorso in caso di arresto cardiaco: IRC, Italian Resuscitation Council. Il suo sogno è fare una fiaba interattiva su questi temi per i bambini della scuola primaria. Cerchiamo subito di liquidarlo: a. spiegare 'ste cose ai bambini ci sembra un'idea un po' balzana; b. il termine 'Resuscitation', per noi ignoranti in medicina, suona un po' cialtrone 😊 Ma il tipo non molla, e poi (strano ma vero) è tecnologicamente sul pezzo. Così ci limitiamo a rimandare. Nel frattempo ci informiamo con i conoscenti medici e infermieri, e salta fuori che IRC non solo è una cosa seria, ma fa scuola sui temi del primo soccorso. Scopriamo anche di non sapere cose importantissime. E che non siamo gli unici. E che forse, queste cose, sarebbe davvero opportuno impararle, fin da piccoli. Così ci proviamo, ci prendiamo gusto e l'app diventa una storia che vive di vita propria, spassosa, molto molto nostra. Garantita Elastico. Provate di persona. Domani mattina, subito 😊

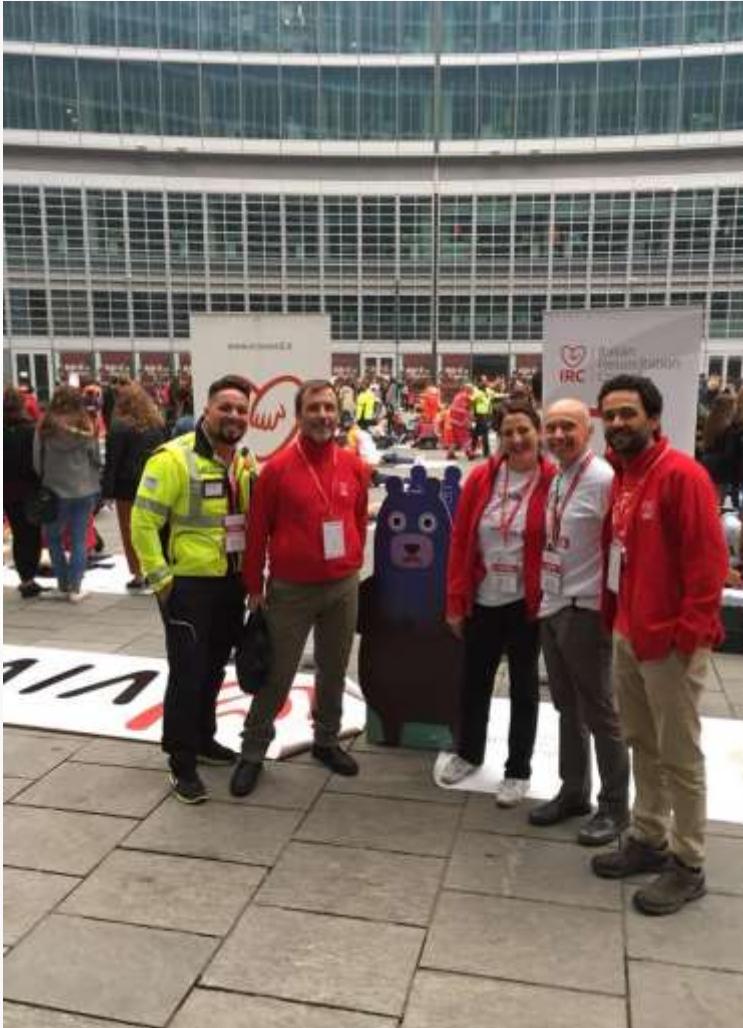




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Un picnic mozzafiato

App / Fiaba multimediale per bambini (6-10 anni)



MONTH

OCT

DAY

26

YEAR

1985

AM
PM

HOUR

08

MIN

:28

DESTINATION TIME

MONTH

OCT

DAY

26

YEAR

1985

AM
PM

HOUR

08

MIN

:22

PRESENT TIME

MONTH

OCT

DAY

28

YEAR

1985

AM
PM

HOUR

08

MIN

:20

LAST TIME DEPARTED



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Virtual Reality 2009



Virtual Reality Enhanced Mannequin (VREM)

Short communication

Virtual reality enhanced mannequin (VREM) that is well received by resuscitation experts^{*}

Federico Semeraro^{a,*}, Antonio Frisoli^b, Massimo Bergamasco^b, Erga L. Cerchiari^a

^a Department of Anaesthesia and Intensive Care, Ospedale Maggiore, Bologna, Italy

^b Percro, Scuola Superiore Sant'Anna, Pisa, Italy

Summary: The objective of this study was to test acceptance of, and interest in, a newly developed prototype of virtual reality enhanced mannequin (VREM) on a sample of congress attendees who volunteered to participate in the evaluation session and to respond to a specifically designed questionnaire.

Methods: A commercial Laerdal HeartSim 4000 mannequin was developed to integrate virtual reality (VR) technologies with specially developed virtual reality software to increase the immersive perception of emergency scenarios. To evaluate the acceptance of a virtual reality enhanced mannequin (VREM), we presented it to a sample of 39 possible users. Each evaluation session involved one trainee and two instructors with a standardized procedure and scenario: the operator was invited by the instructor to wear the data-gloves and the head mounted display and was briefly introduced to the scope of the simulation. The instructor helped the operator familiarize himself with the environment. After the patient's collapse, the operator was asked to check the patient's clinical conditions and start CPR. Finally, the patient started to recover signs of circulation and the evaluation session was concluded. Each participant was then asked to respond to a questionnaire designed to explore the trainee's perception in the areas of user-friendliness, realism, and interaction/immersion.

Results: Overall, the evaluation of the system was very positive, as was the feeling of immersion and realism of the environment and simulation. Overall, 84.6% of the participants judged the virtual reality experience as interesting and believed that its development could be very useful for healthcare training.

Conclusions: The prototype of the virtual reality enhanced mannequin was well-liked, without interference by interaction devices, and deserves full technological development and validation in emergency medical training.

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Semeraro et al. Resuscitation 80 (2009) 489–492



Virtual Reality Enhanced Mannequin (VREM)



Federico Semeraro

Consultant in Anaesthesia and Intensive Care, Maggiore Hospital Bologna Italy

CPR training Virtual Reality Education Serious games

<input type="checkbox"/>	TITOLO			CITATA DA	ANNO
<input type="checkbox"/>	European Resuscitation Council guidelines for resuscitation: 2017 update			55	2018
	GD Perkins, TM Olasveengen, I Maconochie, J Soar, J Wyllie, R Greif, ...				
	Resuscitation 123, 43-50				
<input type="checkbox"/>	Kids Save Lives–ERC position statement on school children education in CPR.: "Hands that help–Training children is training for life"			44	2016
	BW Böttiger, LL Bossaert, M Castrén, D Cimpoesu, M Georgiou, R Greif, ...				
	Resuscitation 105, A1-A3				
<input type="checkbox"/>	Motion detection technology as a tool for cardiopulmonary resuscitation (CPR) quality training: a randomised crossover mannequin pilot study			39	2013
	F Semeraro, A Frisoli, C Loconsole, F Bannò, G Tammaro, G Imbriaco, ...				
	Resuscitation 84 (4), 501-507				
<input type="checkbox"/>	Virtual reality enhanced mannequin (VREM) that is well received by resuscitation experts			39	2009
	F Semeraro, A Frisoli, M Bergamasco, EL Cerchiari				
	Resuscitation 80 (4), 489-492				

Virtual Reality Enhanced Mannequin (VREM)



Ten Years Challenge! #TenYearsChallenge #TenYearChallenge #TenYears



#VirtualReality #VRCPRE #SchoolOfCPR #VREM #Relive #IRC



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Virtual Reality CPR

Italian Resuscitation Council





A WINNING SOLUTION BOTH FOR GENERAL POPULAITON AND HEALTHCARE PROFESSIONALS

KIDS & POPOLAZIONE GENERALE

Diffondere la conoscenza su arresto cardiaco
e rianimazione cardiopolmonare

Aumentare sensibilità in modo divertente

OPERATORI SANITARI E NON

Utilizzare come strumento di training
Utilizzo in blended learning e retraining

Virtual Reality for CPR training: How cool is that? Dedicated to the “next generation”

[Federico Semeraro](#)  

Maggiore Hospital, Bologna, Italy

[Andrea Scapigliati](#)

Institute of Anesthesia and Intensive Care, Catholic University of the Sacred Heart, Rome, Italy

[Giuseppe Ristagno](#)

Istituto di ricerche farmacologiche “Mario Negri” – IRCCS, Milano, Italy

[Anita Luciani, Stefano Gandolfi](#)

Italian Resuscitation Council Foundation, Bologna, Italy

[Andrew Lockey](#)

Calderdale Royal Hospital, Halifax, UK

[Michael P. Müller](#)

Department of Anaesthesiology and Intensive Care Medicine, University Hospital, Technische Universität Dresden, Dresden, Germany

[Sabine Wingen, Bernd W. Böttiger](#)

University Hospital of Cologne, Kerpener Straße 62, 50937 Köln, Germany



We received 258 responses from 18 countries.

The background of participants was:

key person in national resuscitation council, educator, instructor and members of the ERC Research NET

Virtual Reality (VR) on PubMed

Virtual Reality: 8860 publications

Virtual Reality and Resuscitation: 19 publications

Virtual Reality and CPR: 11 publications

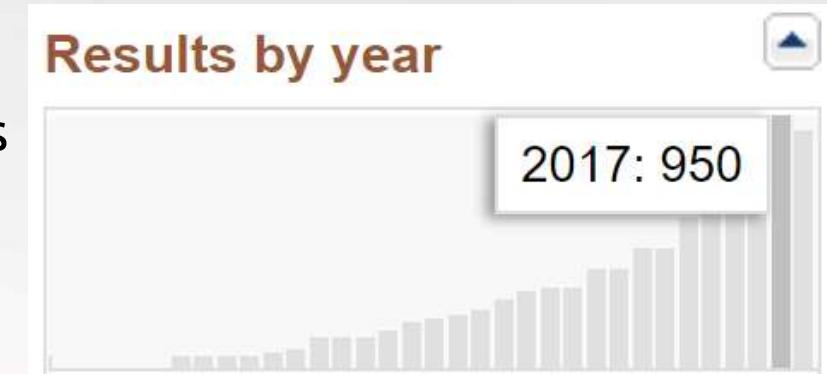
Virtual Reality and cardiac arrest: 7 publications

MIND THE GAP

Virtual Reality and Rehabilitation: 1638 publications

Virtual Reality and Surgery: 2466 publications

Virtual Reality and Orthopedics: 75 publications



I have a fracture, I need to fix it



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Lifesaver VR



VR #ReSS18 Chicago

Comparing Bystander Response to an Unannounced Cardiac Arrest Based on Victim Gender Using an Immersive Virtual Reality System

Marion Leary, RN MSN MPH, Alfredo Almodovar Jr., David G. Buckler, Jaidhi Patel, Zahab A. Chaudhary, Ariele Karwai, Benjamin S. Abella, MD MPH, Audrey L. Blewer, MPH

Department of Emergency Medicine and the Center for Resuscitation Science, University of Pennsylvania, Perelman School of Medicine

BACKGROUND
 Bystander response to a sudden cardiac arrest (SCA) patient varies by the gender of the victim. Previous studies have shown disparities in response and based on the gender of the victim. Current virtual reality (VR) education technology allows for the creation of high-fidelity scenarios permitting manipulation of the victim's gender in order to observe bystander response.

OBJECTIVE
 We sought to observe the patient response to an unannounced simulated VR SCA event based on the victim's gender.

METHODS
 Using our VR SCA system integrated with a CPR recording tracking, we enrolled subjects in the Philadelphia community. The victim's gender was randomized to either female or male (Figure 1). Subjects were able to interact with simulated bystanders, give vocal commands such as "call 911" or "stop an AED", and perform CPR on the unannounced victim in the virtual environment while simultaneously performing CPR on the "imposter" in the real environment. Subjects were unaware of the nature of the event but were told to respond however they would to an emergency situation. Subject's ability to proceed through the Chain of Survival (CotS) (Pulse, CPR, AED, and Post-CPR) was recorded. This was an observational study and was not powered to look at differences within these categories based on gender.

RESULTS
 Between 10/2017 and 12/2017, 74 subjects were recruited. Mean age was 31.811 yrs, 50% were female, 49% were male, and 63% had never been trained in CPR or were trained <2 yrs prior (Table 1). In total, 50% of subjects performed CPR, and 11% based on AED knowledge or the Chain of Survival with either bystander males and female subjects with the exception of using an AED (95% vs. 42%, Figure 3). CPR was performed on male victims 20% of the time in 54% of patients. An AED was performed 21% of the time for male victims vs. 12% for females (Figure 3). If the subject was male, CPR was performed on a female victim 20% of the time vs. 71% for female victims; female subjects performed CPR on a female victim 20% vs. 28% on a male victim (Figure 3).

Overall, chest compression (CC) rate was 114.22 compressions/minute (CPM) and CC depth was 4.14 cm. Male subjects CC rate was 104.94 CPM and female subjects CC rate was 117.62 CPM, males achieved a depth of 4.42 cm and females subjects depth was 3.94 (2.9 cm, male and female subjects had a higher CC rate on male victims compared with female victims) (Table 2).

CONCLUSIONS
 In our unannounced, immersive VR SCA study, we observed less CPR and AED use on female victims. Future work will need to be performed to evaluate disparities in CPR and AED use based on neighborhood and victim gender.

Figure 1 Images of the Male and Female Avatar Victims in the Immersive VR SCA System.

Figure 2 Choice of Survival Knowledge Plus Immersive Virtual Reality System Demographics.

Figure 3 Response Based on Age Gender of the Unannounced Victim.

Table 1 Subject Demographics

Demographic	Total	Male	Female
Age (Median)	31.811	31.811	31.811
Gender	50%	49%	50%
Race	White	45%	55%
Education	High School	33%	33%
Occupation	Student	30%	30%
Employment	Full-time	44%	44%
Marital Status	Married	33%	33%
CPR Training	Yes	11%	11%
AED Training	Yes	22%	22%
Post-CPR	Yes	4%	4%

Table 2 CPR Quality Based on Subject Gender-Avatar Gender

Demographic	All	Male	Female
CC Rate (cpm)	114.22	104.94	117.62
CC Depth (cm)	4.14	4.42	3.94

Marion Leary @marionleary

Great to meet @fsemeraro1973 in person at #ReSS18 #AHA18. His work from a decade ago inspired the work I do now using #VirtualReality and cardiac arrest!
 #techforgood



10/11/2018, 16:44 from Chicago, IL



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ERC Congress 2018





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Fund Raising



Gold Sponsor



Silver Sponsor



Bronze Sponsor



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Italian Resuscitation Council Scientific Supervision

The Lord of the Rings: The Fellowship of the ERC

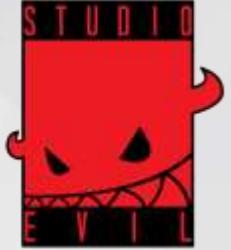


Giuseppe (Frodo) Ristagno, Andrea (Aragorn) Scapigliati & Federico (Legolas) Semeraro



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Studio Evil VR Development





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VR CPR HTC Vive for Training Center



VR CPR Oculus Go School of CPR



Virtual Reality CPR

Italian Resuscitation Council

**Arresto cardiaco adulto
Extraospedaliero**

**RCP con sole compressioni e
DAE**

Location: Piazza Santo Stefano



Virtual Reality CPR Italian Resuscitation Council

**Arresto cardiaco adulto
Intraospedaliero**

Basic Life Support Defibrillation (BLS-D)



Virtual Reality CPR

Italian Resuscitation Council

**Arresto cardiaco Pediatrico
Extraospedaliero**

**Pediatric
Basic Life Support Defibrillation
(PBLS)**

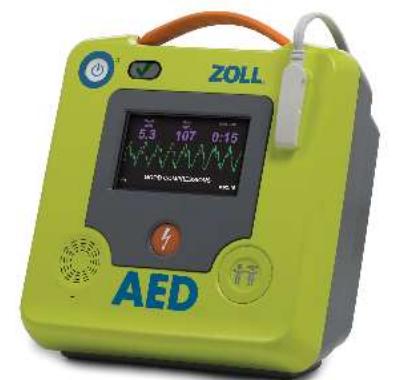




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Virtual Reality CPR

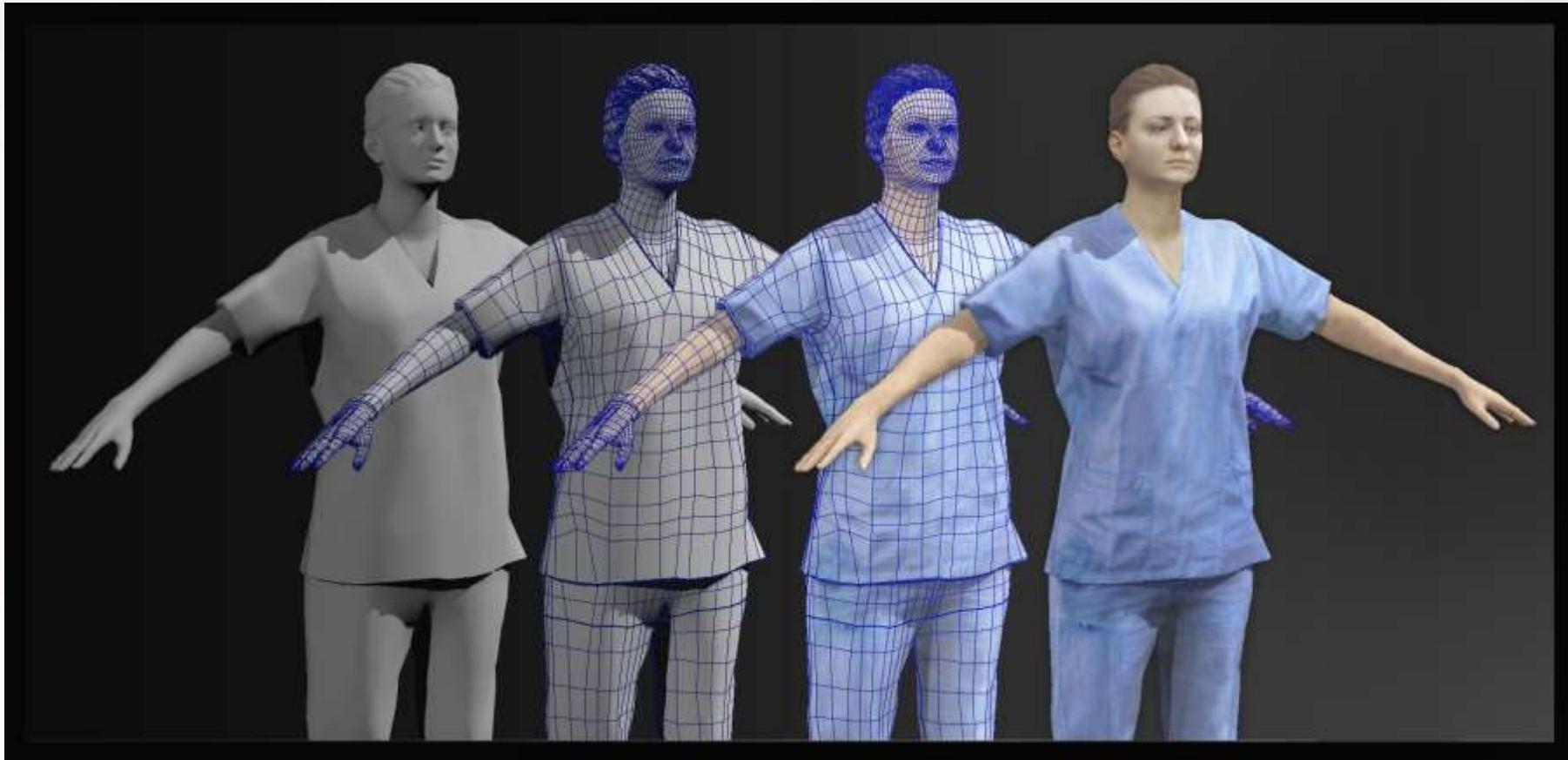
Italian Resuscitation Council



Italian
Resuscitation
Council

Virtual Reality CPR

Italian Resuscitation Council

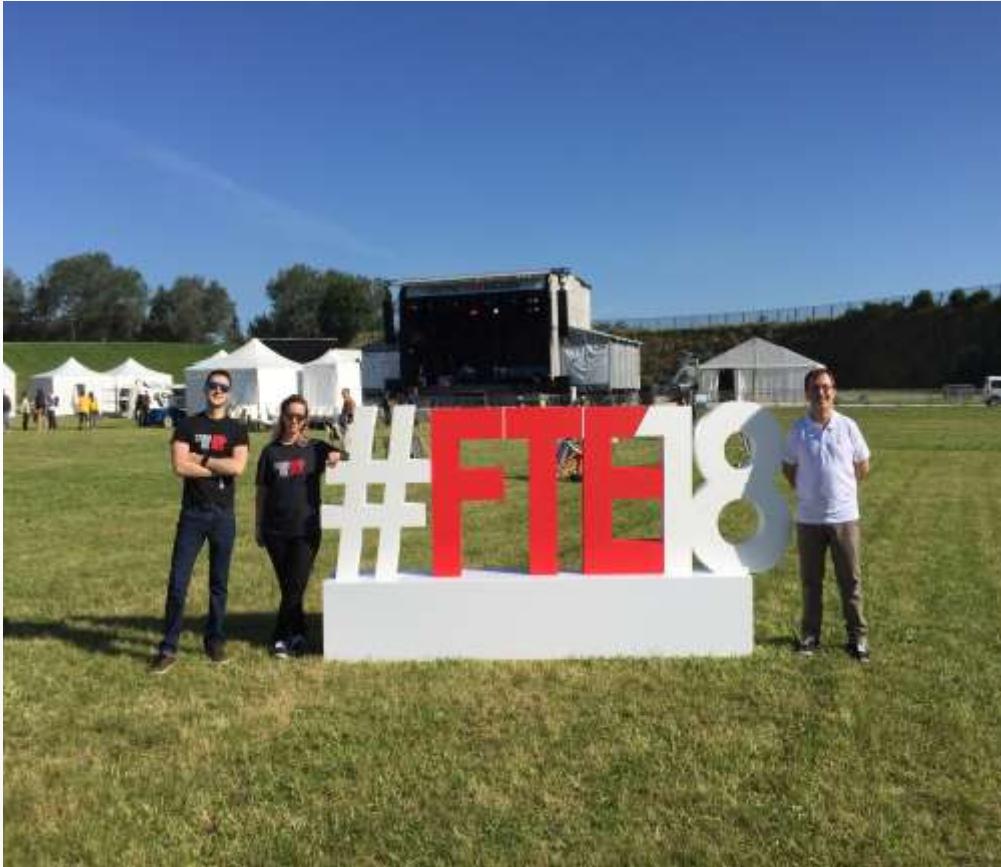




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Festival Tous Engagés #FTE18

Testing in Real life





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World Restart A Heart #WRAH



University of Bologna Medical Students Testing in Real life



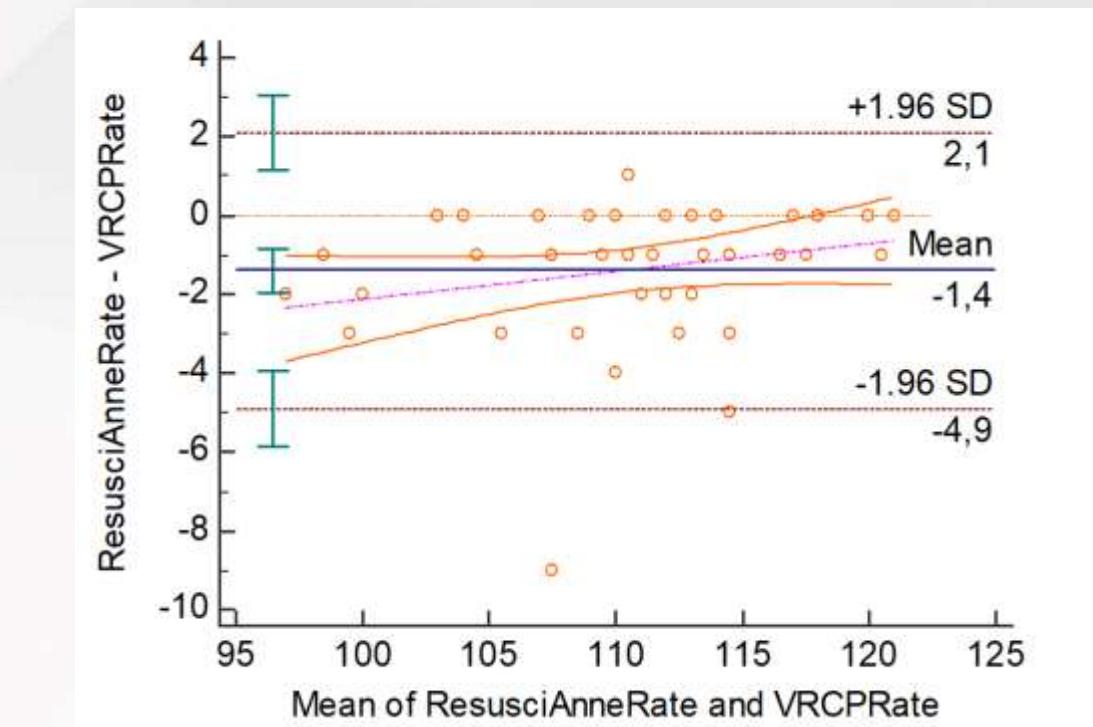
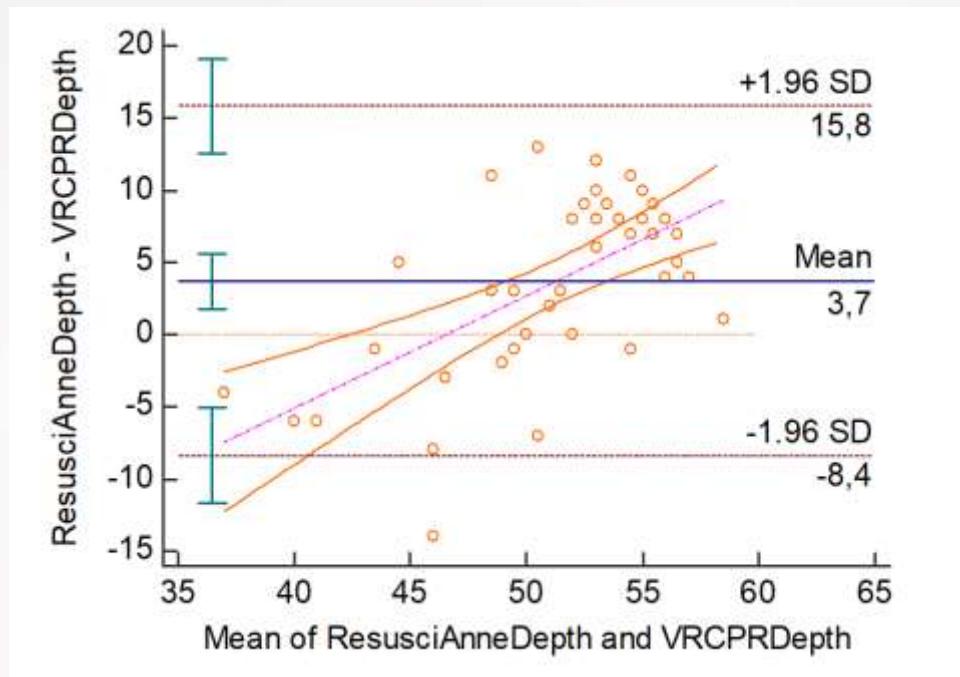
- The VR CPR was tested in 43 users.
- Medical students at first year of medicine and surgery degree.
- All students were ERC BLS provider from 2018.
- The sample consisted of 25 (58%) male and 18 (42%) women
- Average age of 21 ± 3 years and BMI 22 ± 2 .

Virtual Reality cardiopulmonary resuscitation (CPR) experience: a tool for quality training in resuscitation

Semeraro et al. Resuscitation. 2019 Feb;135:234-235.



University of Bologna Medical Students Testing in Real life



The Bland–Altman plot of chest compression depth and chest compression rate (Resusci Anne vs. VR CPR) in the 43 students performance of 120 s chest compressions only-CPR.



BLS-D VRQ Pilot Course



Programma

- 8.00-8.15** Presentazione del Corso
- 8.15-8.45** Lezione BLS e defibrillazione
- 8.45-9.00** Dimostrazione BLSD e Quality CPR
- 9.00-9.20** Valutazione Q-CPR
- 9.00-10.20** Gruppi (Quality CPR & Virtual Reality)
- 10.20-10.40** Pausa
- 10.40-13.00** Gruppi (Quality CPR & Virtual Reality)
- 12.40-13.00** Valutazione Q-CPR
- 13.00-13.15** Chiusura Corso



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BLS-D VRQ Pilot Course





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Back to reality: a new blended pilot course of BLS with VR

RESUSCITATION 138 (2019) 18–19

Available online at www.sciencedirect.com

Resuscitation

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

Letter to the Editor

Back to reality: A new blended pilot course of Basic Life Support with Virtual Reality

Semeraro et al. Resuscitation. 2019 May;138:18-19.





Back to reality: a new blended pilot course of BLS with VR

Table 1 – VR experience evaluation. Participants' feedback on VR experience. Participants rated the following statements using a 7-point Likert scale (1 = completely disagree, 7 = completely agree).

	N	Yes	No
1. Did you have any previous experience of Virtual Reality?	22	4	18
	n	Median [range]	
2. It is very difficult to wear and use the VR setup	22	1 [1-7]	
3. It is difficult to perform chest compression with the use of VR setup	22	2 [1-7]	
4. I have the feeling that the patient is really present in front of me	22	7 [5-7]	
5. The patient presents the classical signs of cardiac arrest (unconscious, gasping, pale skin, etc)	22	7 [6-7]	
6. I have the impression to be in the real Bologna square and/or in a real hospital	22	7 [4-7]	
7. The environment of the Santo Stefano Square is very realistic	22	7 [5-7]	
8. The perception of the three-dimensional space is very high	22	7 [6-7]	
9. The interaction with the patient is very realistic	22	7 [5-7]	
10. The feeling of personal involvement in the resuscitation procedure is high	22	7 [5-7]	
11. The feedback received from VR CPR on my chest compression performance during the 2 minutes of CPR is clear	22	7 [3-7]	
12. VR CPR helps me to perform a chest compression rate between 100 and 120 compressions per minute	22	7 [5-7]	
13. VR CPR helps me to perform a chest compression depth between 50 and 60 millimeters	22	7 [4-7]	
14. I feel emotionally more involved when experiencing VR CPR training in comparison to the standard CPR manikin training	22	7 [6-7]	
15. I agree Virtual Reality will improve the results of CPR Training in the near future	22	7 [4-7]	
	N	Yes	No
16. Do you think that VR CPR should be implemented to improve effectiveness of healthcare personnel training?	22	22	0

Semeraro et al. Resuscitation. 2019 May;138:18-19.

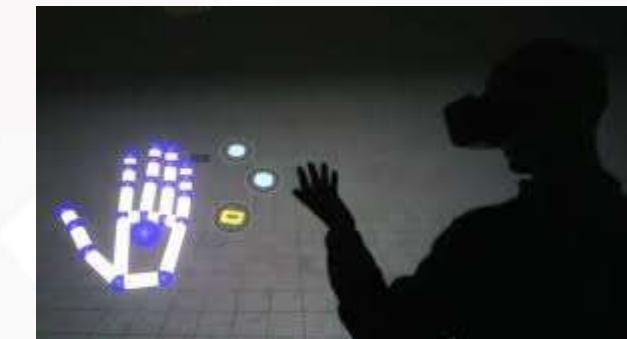
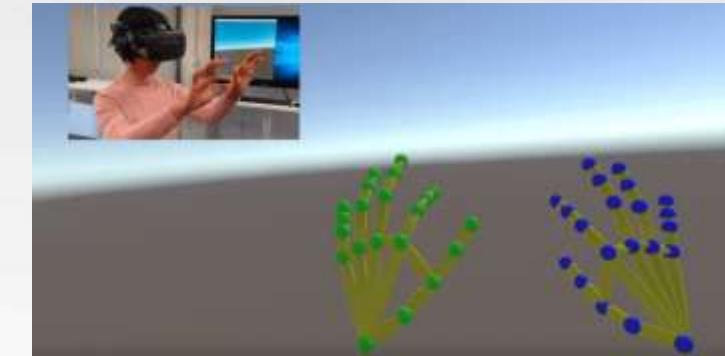
Future Plans





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VR Research





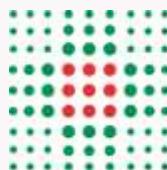
«Kids save lives: imparare come salvare una vita con il 118»



«Kids save lives: imparare come salvare una vita con il 118»



FONDAZIONE
DEL
MONTE
1473



SERVIZIO SANITARIO REGIONALE
EMILIA-ROMAGNA
Azienda Unità Sanitaria Locale di Bologna

- 10 Eventi Kids Save Lives Bologna & Ravenna
- 1000 Studenti
- 100 Insegnanti
- 12 Mesi
- VR Picnic Mozzafiato – CardBoard Smartphones
- VR CPR – CardBoard Smartphones





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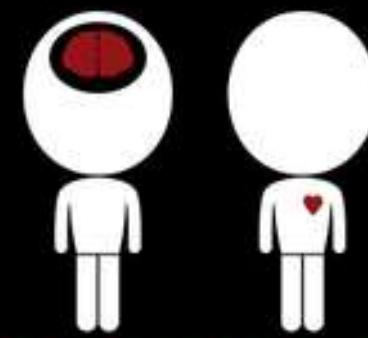
Rimini

04•05•06 NOVEMBRE

IRC 2020

LE NUOVE LINEE GUIDA ERC 2020
DELLA RIANIMAZIONE CARDIOPOLMONARE

S A V E T H E D A T E



think different



THINK OUTSIDE THE BOX





DO NOT CONFORM.





MAY THE 4TH
BE WITH YOU.
**CPR SAVES
LIVES!**