

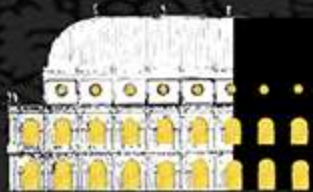
CONGRESSO NAZIONALE IRC 2023



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LA RIVOLUZIONE DEI SISTEMI



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Council



La Centrale Operativa

Guglielmo Imbriaco

Centrale Operativa 118 Emilia Est

AUSL di Bologna

la regia di un sistema in
evoluzione



Conflitti di interesse



Comitato Scientifico
Italian Resuscitation Council



Comitato Direttivo
Aniarti, associazione nazionale infermieri di area critica



Dottorando di ricerca
Università di Tor Vergata, Roma

Non ho conflitti di interesse o rapporti economici con i marchi citati nella presentazione

Quale è il ruolo della Centrale Operativa

(oltre a inviare i mezzi di soccorso)

- Rapido riconoscimento dell'arresto cardiaco
- Istruzioni Pre-Arrivo
- Attivazione/gestione di soccorritori laici
- Utilizzo dei DAE sul territorio

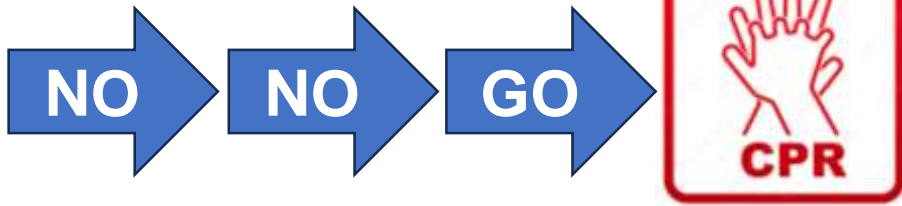


Rapido riconoscimento dell'arresto cardiaco

Respira?

YES
 NO
 OTHER

Obiettivo



Respira normalmente?

Respira male?

Respira a fatica?

Ha un respiro inefficace?

Fa rumori mentre respira?

E il gasping?

Rapido riconoscimento dell'arresto cardiaco

Respira?



Abnormal breathing of sudden cardiac arrest victims described by laypersons and its association with emergency medical service dispatcher-assisted cardiopulmonary resuscitation instruction

Hidetada Fukushima,¹ Masami Imanishi,² Taku Iwami,³ Tadahiko Seki,¹ Yasuyuki Kawai,¹ Kazunobu Norimoto,¹ Yasuyuki Urisono,¹ Michiaki Hata,¹ Kenji Nishio,⁴ Keigo Saeki,⁵ Norio Kurumatani,⁵ Kazuo Okuchi¹



Resuscitation

Volume 56, Issue 1, January 2003, Pages 25-34



Interaction between emergency medical dispatcher and caller in suspected out-of-hospital cardiac arrest calls with focus on agonal breathing. A review of 100 tape recordings of true cardiac arrest cases

Angela Bang[°], Johan Herlitz[°], Sven Martinell[°]

Journal of the American Heart Association

Volume 6, Issue 9, September 2017

<https://doi.org/10.1161/JAHA.116.005058>



ORIGINAL RESEARCH

Description of Abnormal Breathing Is Associated With Improved Outcomes and Delayed Telephone Cardiopulmonary Resuscitation Instructions

Hidetada Fukushima, MD; Micah Panczyk, MS; Chengcheng Hu, PhD; Christian Dameff, MD; Vatsal Chikani, MPH; Tyler Vadeboncoeur, MD; Daniel W. Spaite, MD; Bentley J. Bobrow, MD



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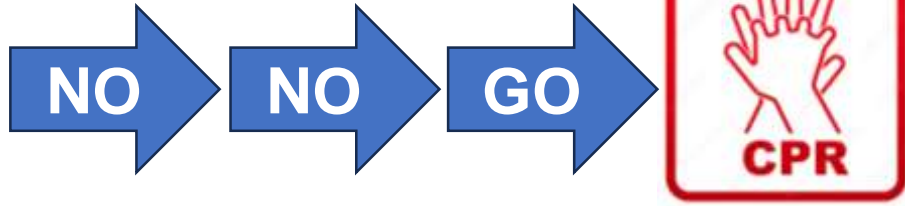


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Rapido riconoscimento dell'arresto cardiaco

Obiettivo



RESEARCH ARTICLE

“If you miss that first step in the chain of survival, there is no second step” – Emergency ambulance call-takers’ experiences in managing out-of-hospital cardiac arrest calls

Nirukshi Perera^{1,2,*}, Tanya Birnie¹, Austin Whiteside^{1,3}, Stephen Ball^{1,3},
Judith Finn^{1,3,4,5}



Rapido riconoscimento dell'arresto cardiaco

La tecnologia può aiutare a riconoscere un arresto cardiaco?



Scquizzato & Semeraro (2022)

Cadute
Alterazioni del ritmo
Localizzazione



Rapido riconoscimento dell'arresto cardiaco

npj | Digital Medicine www.nature.com/npjdigitalmed

ARTICLE OPEN

Contactless cardiac arrest detection using smart devices

Justin Chan¹, Thomas Rea^{2,3}, Shyamnath Gollakota¹ and Jacob E. Sunshine¹

RESCUSITATION PLUS 11 (2022) 100277

Available online at www.sciencedirect.com

Resuscitation Plus

Journal homepage: www.elsevier.com/locate/resuscitation-plus

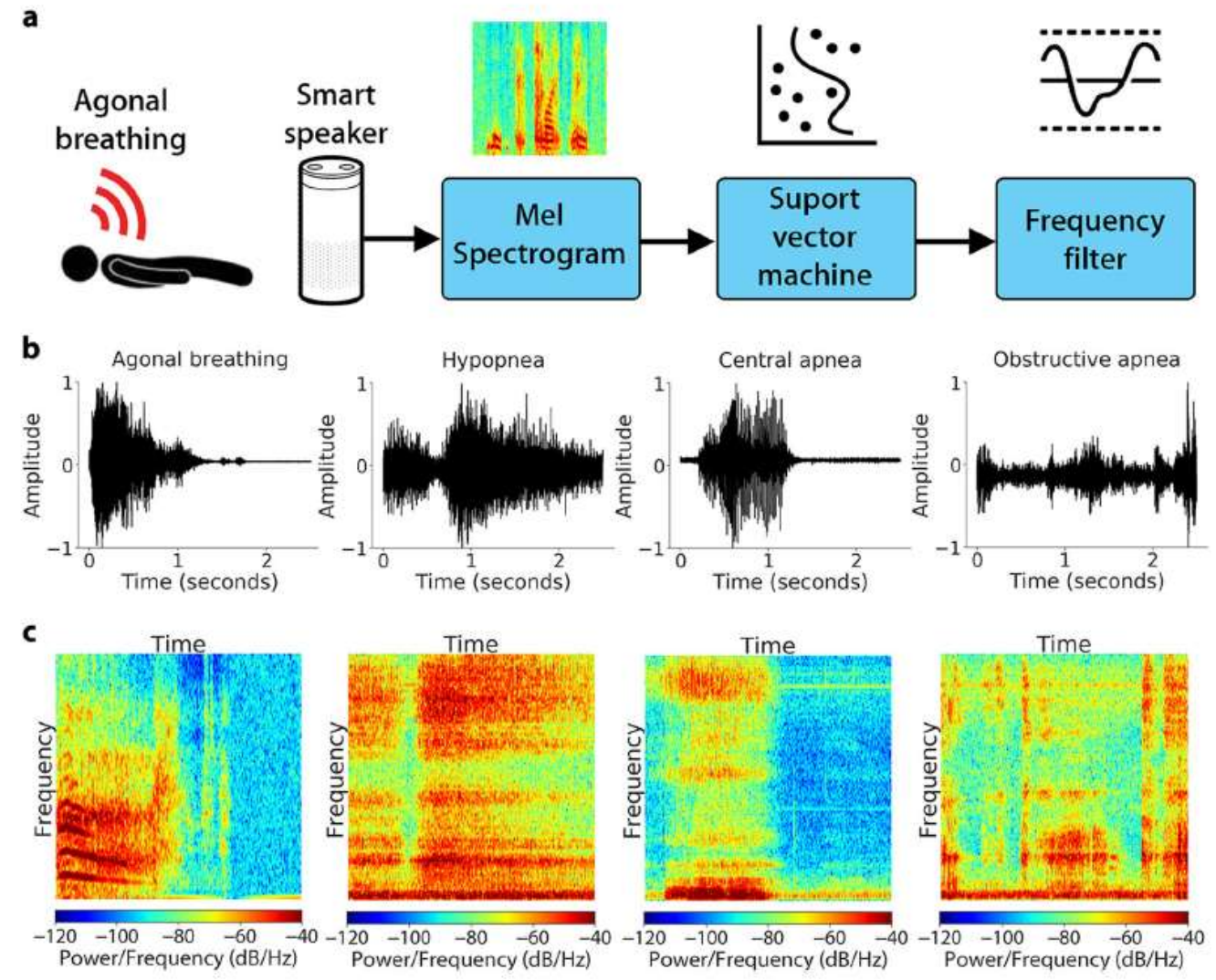
Review

Sensor technologies to detect out-of-hospital cardiac arrest: A systematic review of diagnostic test performance

Jacob Hutton^{a,b,c,r}, Saud Lingawi^{a,c,d,f}, Joseph H. Puyat^{c,d}, Calvin Kuo^{c,d}, Babak Shadgan^{c,d,g,f}, Jim Christenson^{c,d,h}, Brian Grunau^{b,c,g,h}

Artificial Intelligence for Detection of Cardiovascular-Related Diseases from Wearable Devices: A Systematic Review and Meta-Analysis

Solam Lee^{1,2*}, Yuseong Chu^{3*}, Jiseung Ryu³, Young Jun Park⁴, Sejung Yang⁵, and Sang Baek Koh¹



Rapido riconoscimento dell'arresto cardiaco



E l'intelligenza artificiale?

Original Investigation | Emergency Medicine

Effect of Machine Learning on Dispatcher Recognition of Out-of-Hospital Cardiac Arrest During Calls to Emergency Medical Services A Randomized Clinical Trial

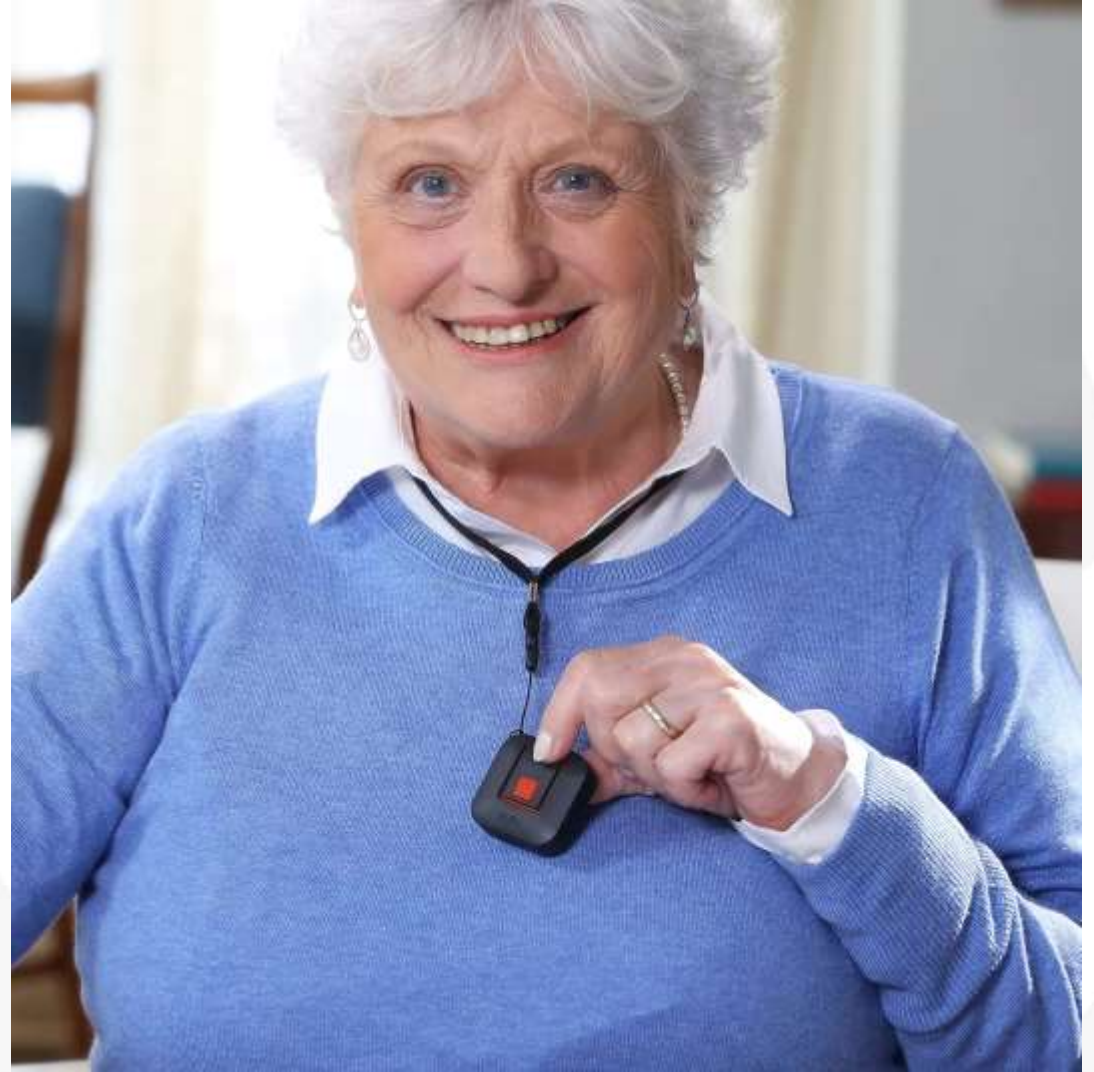
Stig Nikolaj Blomberg, MSc; Helle Collatz Christensen, MD, PhD; Freddy Lippert, MD; Annette Kjær Ersbøll, MSc, PhD; Christian Torp-Petersen, MD, PhD; Michael R. Sayre, MD; Peter J. Kudenchuk, MD; Fredrik Folke, MD, PhD

Dispatchers + AI recognized 296 confirmed OHCA cases (**93.1%**) compared with 304 confirmed OHCA cases (**90.5%**) using standard protocols ($P = .15$)

Dispatchers started CPR instructions in 64.8% calls in the intervention group and 61.9% calls in the control group ($P = .47$), with no significant difference in elapsed time from when the OHCA was recognized.

Rapido riconoscimento dell'arresto cardiaco

Ieri...



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Rapido riconoscimento dell'arresto cardiaco

Oggi...



IRC

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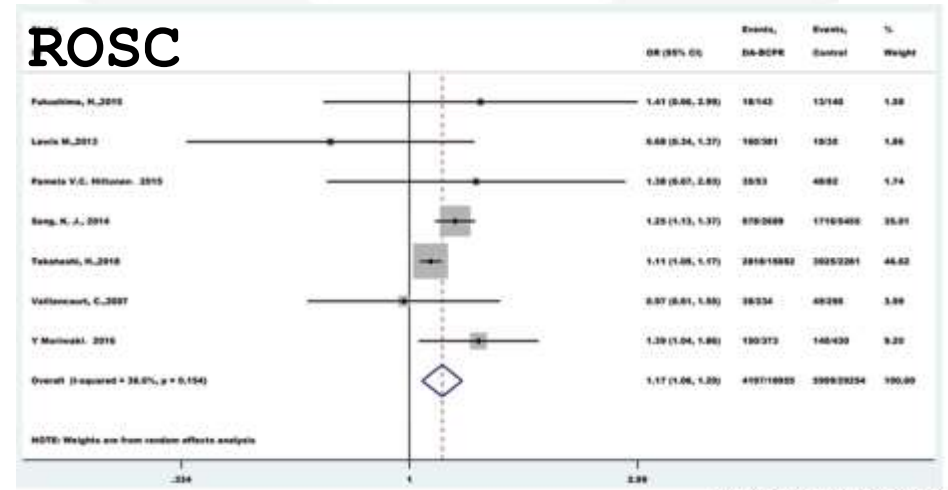


Istruzioni Pre-Arrivo

Impact of Dispatcher-Assisted Bystander Cardiopulmonary Resuscitation with Out-of-Hospital Cardiac Arrest: A Systemic Review and Meta-Analysis

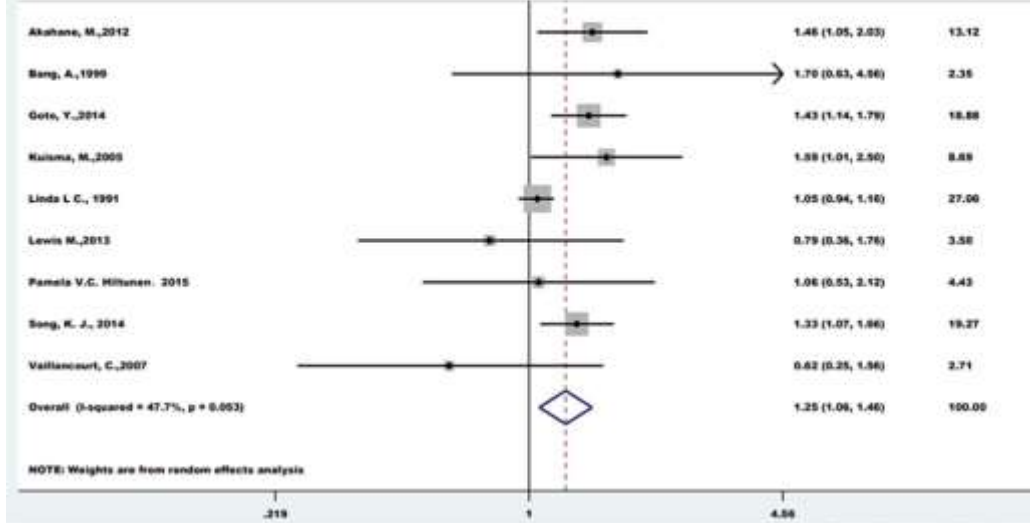
Junhong Wang, M.Med;¹ Hua Zhang, PhD;² Zongxuan Zhao, BM;³ Kaifeng Wen, BM;³ Yaoke Xu, BM;³ Daidai Wang, M.Med;³ Qingbian Ma, MD¹

ROSC



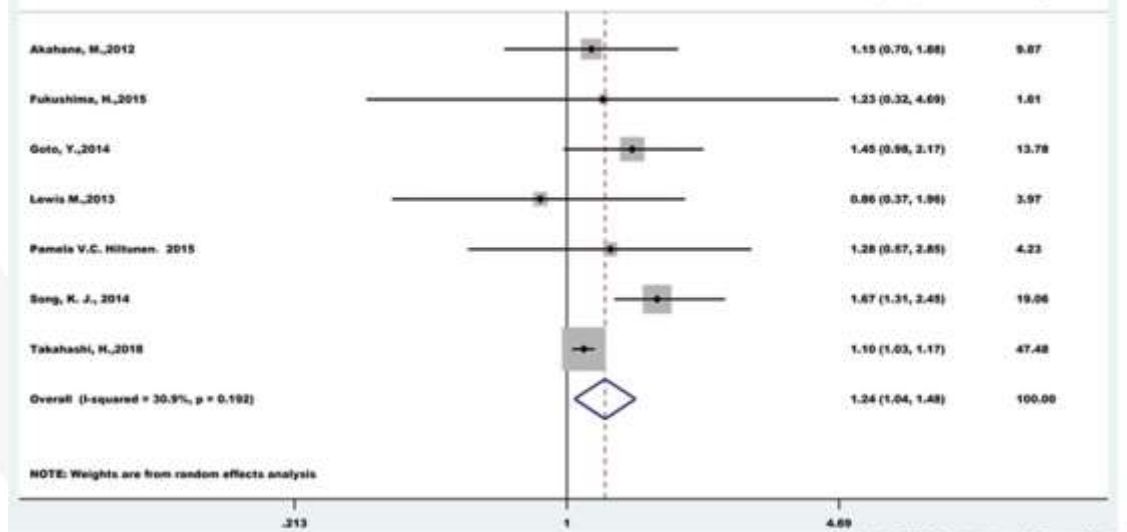
Wang © 2020 Prehospital and Disaster Medicine

Hospital discharge



Wang © 2020 Prehospital and Disaster Medicine

CPC 1-2



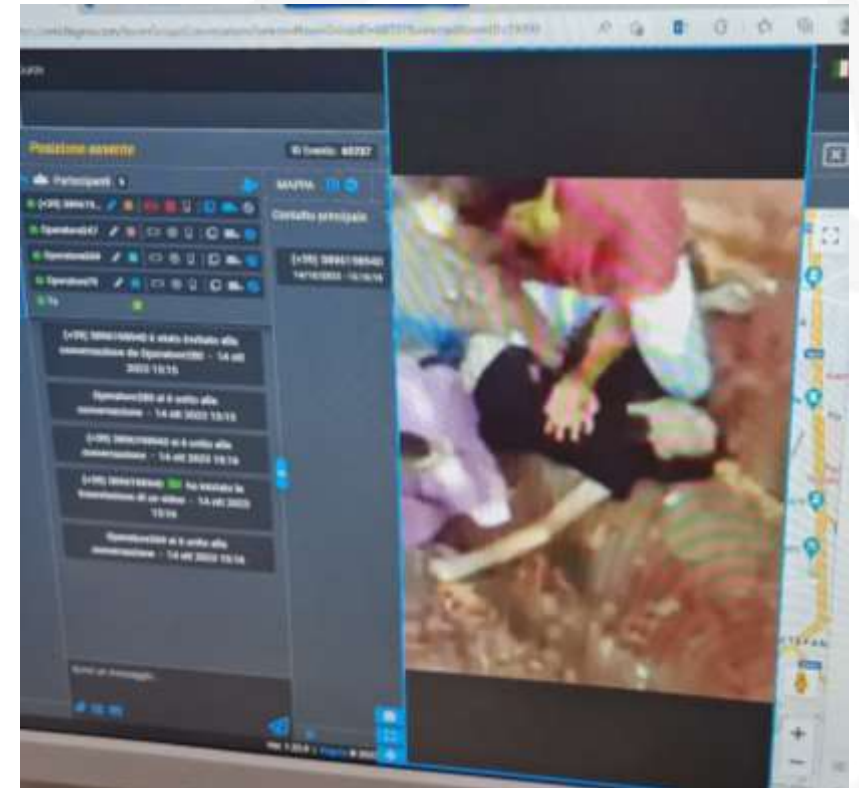
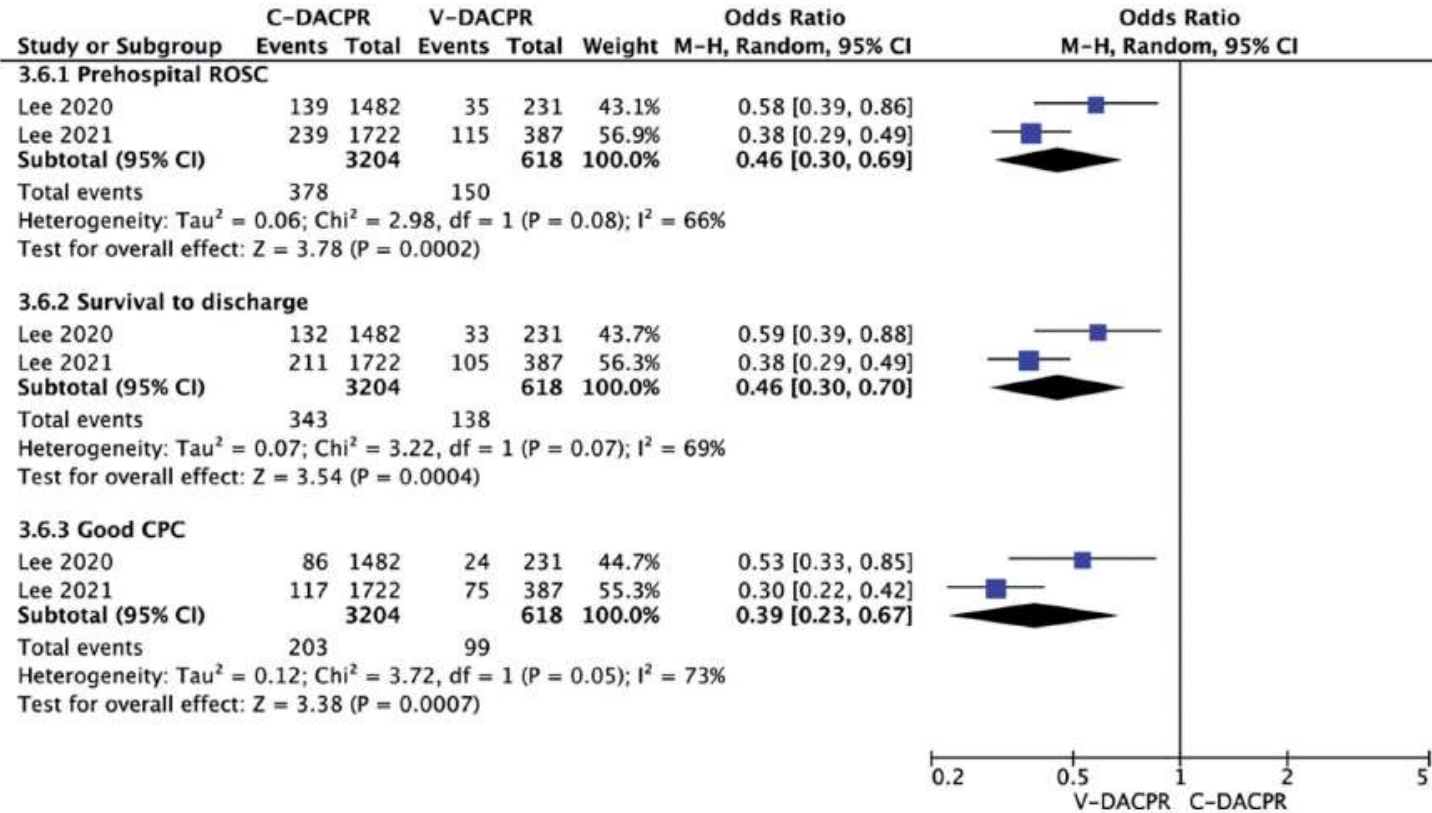
Wang © 2020 Prehospital and Disaster Medicine

Istruzioni Pre-Arrivo

Outcomes of audio-instructed and video-instructed dispatcher-assisted cardiopulmonary resuscitation: a systematic review and meta-analysis

Karol Bielski^{a,b}, Bernd W. Böttiger^c, Michal Pruc^b, Aleksandra Gasecka^{d,e}, Mariusz Sieminski^f, Milosz J. Jaguszewski^g, Jacek Smereka^{b,h}, Natasza Gilis-Malinowska^g, Frank W. Peacockⁱ and Lukasz Szarpak^{b,j,k}

Meglio con feedback video in tempo reale



Attivazione e gestione di soccorritori laici

Parola d'ordine...
COINVOLGERE

SYSTEMATIC REVIEW AND META-ANALYSIS

DOES ALERTING CITIZEN FIRST RESPONDERS TO OUT-OF-HOSPITAL CARDIAC ARREST IMPROVE SURVIVAL?

Scquizzato et al. Eur J Emerg Med 2022. @tscquizzato



RESULTS

1 randomized trial and 9 observational studies

23,351 patients

PRIMARY OUTCOME

SURVIVAL AT HOSPITAL DISCHARGE OR AT 30 DAYS

9.1%
8.3%

SECONDARY OUTCOMES

SURVIVAL WITH GOOD NEUROLOGICAL OUTCOME

12%
9.3%

RETURN OF SPONTANEOUS CIRCULATION

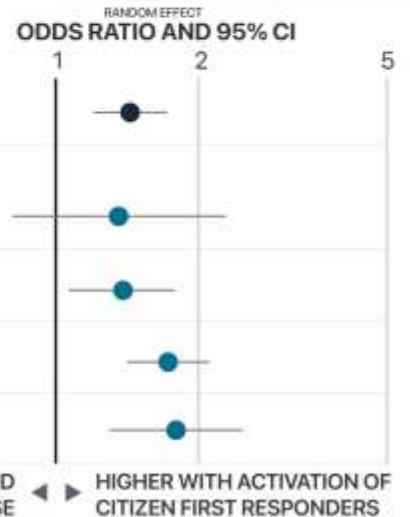
28%
27%

BYSTANDER CARDIO-PULMONARY RESUSCITATION

65%
53%

BYSTANDER AUTOMATED EXTERNAL DEFIBRILLATOR

7.2%
4.2%



CONCLUSIONS

Alerting citizen first responders to out-of-hospital cardiac arrest was associated with higher rates of bystander-initiated CPR, use of AED before EMS arrival, and survival at hospital discharge or 30 days.



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Attivazione e gestione di soccorritori laici e DAE



Quanto impatta questa attività sul carico di lavoro di una Centrale Operativa?

Tempo medio di arrivo di una ambulanza: 10.2 minuti (9-11.4)

1 operatore sta fornendo IPA

1 operatore sta contattando/supportando il soccorritore laico

Un ACR che coinvolge tutti gli attori può impegnare 2 o più operatori per 10-15 minuti

La Centrale Operativa... Regia, risorse e sistema

Una quantità sempre maggiore di informazioni... da utilizzare con attenzione!

Istruzioni Pre-Arrivo... non solo per ACR

Un numero crescente di first responder... da gestire/supportare



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E domani?

אליכ



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LA RIVOLUZIONE DEI SISTEMI

La Centrale Operativa... Regia, risorse, sistema e cuore!



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Gulmbriaco



guimbriaco



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