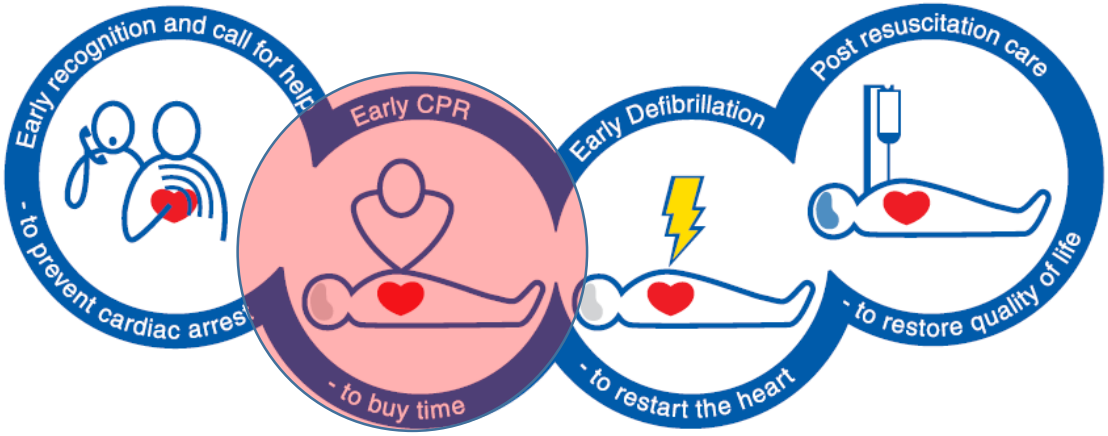

ALGORITMO BLSD 2015

Dr. Giuseppe Ristagno

Laboratorio di Fisiopatologia Cardiopolmonare
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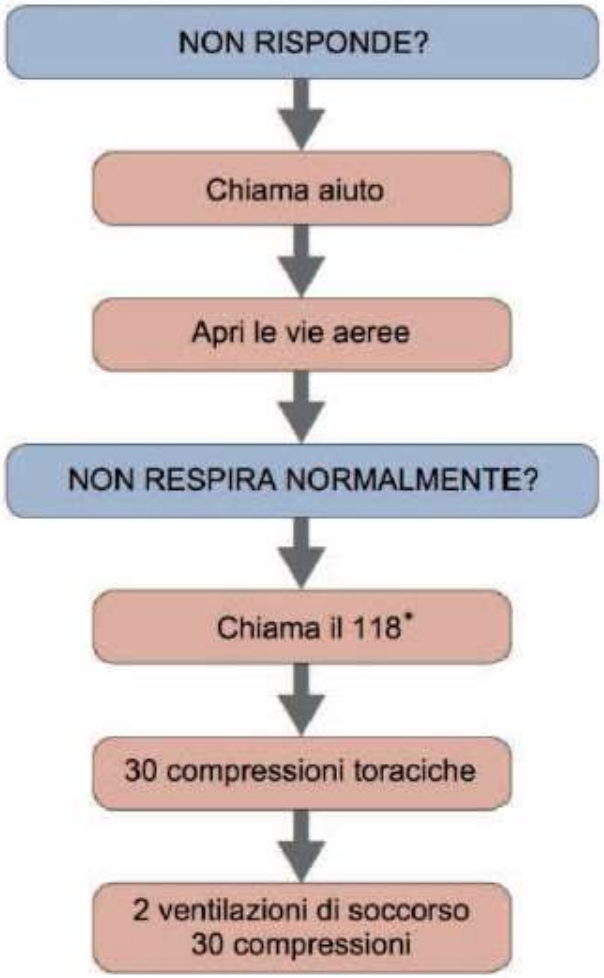
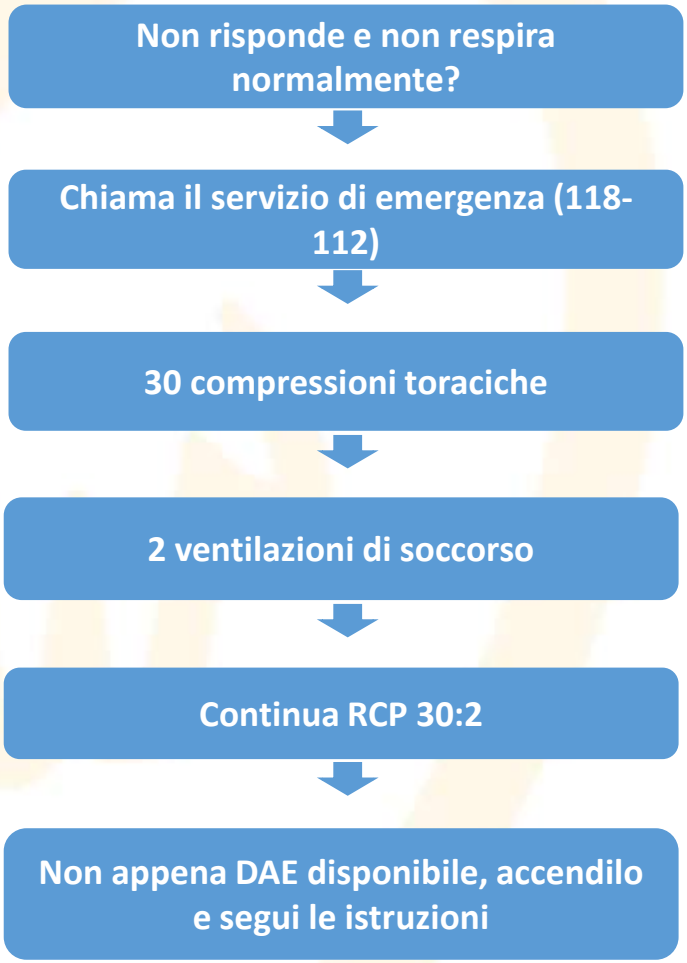
Algoritmo BLSD

2010



*o il numero nazionale per l'emergenza sanitaria

2015



Algoritmo BLS per il personale con training

coscienza

vie aeree

respiro/GAS

chiamata 118/112

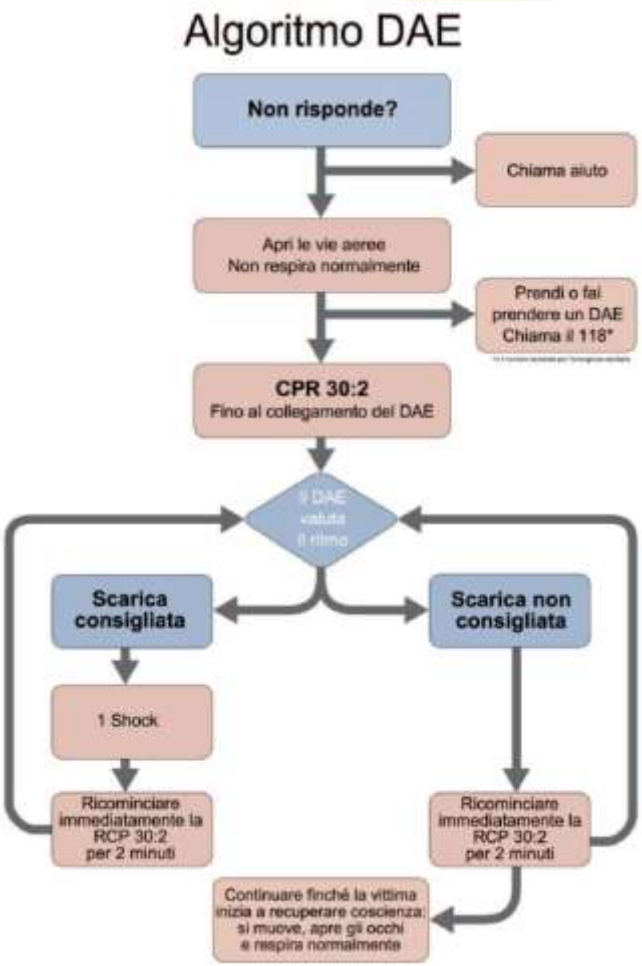
DAE

compressioni toraciche

ventilazioni (30:2)

BLSD/minimizza pause

ALGORITMO 2010



SEQUENCE / Action		Technical description
SAFETY **Make sure you, the victim and any bystanders are safe**		
RESPONSE **Check the victim for a response**		Gently shake his shoulders and ask loudly: "Are you all right?" If he responds leave him in the position in which you find him, provided there is no further danger; try to find out what is wrong with him and get help if needed; reassess him regularly
AIRWAY **Open the airway**		Turn the patient onto his back if necessary Place your hand on his forehead and gently tilt his head back; with your fingertips under the point of the victim's chin, lift the chin to open the airway
BREATHING **Look, listen and feel for normal breathing**		In the first few minutes after cardiac arrest, a victim may be barely breathing, or taking infrequent, slow and noisy gasps. Do not confuse this with normal breathing. Look, listen and feel for **no more** than 10 seconds to determine whether the victim is breathing normally. If you have any doubt whether breathing is normal, act as if it is they are not breathing normally and prepare to start CPR
UNRESPONSIVE AND NOT BREATHING NORMALLY **Alert emergency services**		Ask a helper to call the emergency services (112) if possible otherwise call them yourself Stay with the victim when making the call if possible Activate speaker function on phone to aid communication with dispatcher
SEND FOR AED **Send someone to get AED**		Send someone to find and bring an AED if available. If you are on your own, do not leave the victim, start CPR

CIRCULATION

Start chest compressions

Kneel by the side of the victim

Place the heel of one hand in the centre of the victim's chest; (which is the lower half of the victim's breastbone (sternum))

Place the heel of your other hand on top of the first hand

Interlock the fingers of your hands and ensure that pressure is not applied over the victim's ribs

Keep your arms straight

Do not apply any pressure over the upper abdomen or the bottom end of the bony sternum (breastbone)

Position yourself vertically above the victim's chest and press down on the sternum approximately 5 cm (but not more than 6 cm)

After each compression, release all the pressure on the chest without losing contact between your hands and the sternum

Repeat at a rate of 100-120 min^{-1}

IF TRAINED AND ABLE

Combine chest compressions with rescue breaths

After 30 compressions open the airway again using head tilt and chin lift

Pinch the soft part of the nose closed, using the index finger and thumb of your hand on the forehead

Allow the mouth to open, but maintain chin lift

Take a normal breath and place your lips around his mouth, making sure that you have a good seal

Blow steadily into the mouth while watching for the chest to rise, taking about 1 second as in normal breathing; this is an effective rescue breath

Maintaining head tilt and chin lift, take your mouth away from the victim and watch for the chest to fall as air comes out

Take another normal breath and blow into the victim's mouth once more to achieve a total of two effective rescue breaths. Do not interrupt compressions by more than 10 seconds to deliver two breaths. Then return your hands without delay to the correct position on the sternum and give a further 30 chest compressions

		Continue with chest compressions and rescue breaths in a ratio of 30:2
IF UNTRAINED OR UNABLE TO DO RESCUE BREATHS **Continue compression only CPR**		Give chest compressions only CPR (continuous compressions at a rate of 100-120 min^{-1})
WHEN AED ARRIVES **Switch on the AED and attach the electrode pads**		As soon as the AED arrives: Switch on the AED and attach the electrode pads on the victim's bare chest If more than one rescuer is present, CPR should be continued while electrode pads are being attached to the chest
Follow the spoken/visual directions		Ensure that nobody is touching the victim while the AED is analysing the rhythm
If a shock is indicated, **deliver shock**		Ensure that nobody is touching the victim Push shock button as directed (fully automatic AEDs will deliver the shock automatically) Immediately restart CPR 30:2 Continue as directed by the voice / visual prompts
If no shock is indicated, continue CPR		Immediately resume CPR. Continue as directed by the voice/visual prompts

IF NO AED IS AVAILABLE CONTINUE CPR

Continue CPR

Do not interrupt resuscitation until:

- a health professional tells you to stop
- the victim is definitely waking up moving, opening eyes and breathing normally
- you become exhausted

IF UNRESPONSIVE BUT BREATHING NORMALLY

If you are certain the victim is breathing normally but is still unresponsive, place in the recovery position (see First aid chapter).

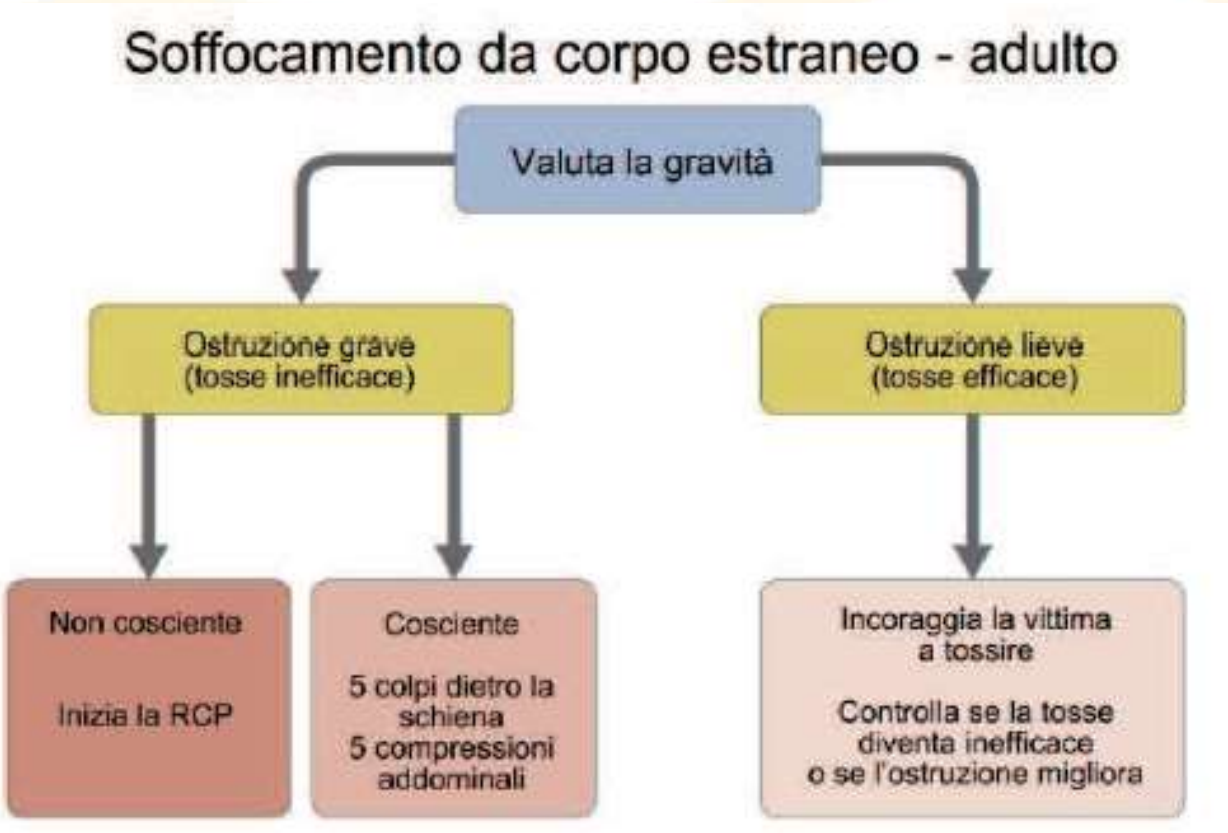
It is rare for CPR alone to restart the heart. Unless you are certain the person has recovered continue CPR

Signs the victim has recovered

- waking up
- moving
- opens eyes
- normal breathing

Be prepared to restart CPR immediately if patient deteriorates

ALGORITMO 2010



Ostruzione Vie aeree

Action		Technical description
SUSPECT CHOKING **Be alert to choking particularly if victim is eating**		
ENCOURAGE TO COUGH **Instruct victim to cough**		
GIVE BACK BLOWS **If cough becomes ineffective give up to 5 back blows**		If the victim shows signs of severe airway obstruction and is conscious apply five back blows Stand to the side and slightly behind the victim Support the chest with one hand and lean the victim well forwards so that when the obstructing object is dislodged it comes out of the mouth rather than goes further down the airway Give five sharp blows between the shoulder blades with the heel of your other hand
GIVE ABDOMINAL THRUSTS **If back blows are ineffective give up to 5 abdominal thrutsts**		If five back blows fail to relieve the airway obstruction, give up to five abdominal thrusts as follows: Stand behind the victim and put both arms round the upper part of the abdomen Lean the victim forwards Clench your fist and place it between the umbilicus (navel) and the ribcage Grasp this hand with your other hand and pull sharply inwards and upwards Repeat up to five times If the obstruction is still not relieved, continue alternating five back blows with five abdominal thrusts

START CPR

Start CPR if the victim becomes unresponsive

If the victim at any time becomes unresponsive:

- support the victim carefully to the ground
- immediately activate the ambulance service
- begin CPR with chest compressions

Una RCP di alta qualità è essenziale per la prognosi

- **Profondità:** circa 5 cm ma non più di 6 cm
- **Frequenza:** 100-120/minuto
- **Completa riespansione** del torace dopo ogni compressione
- Rapporto **compressioni:ventilazioni**: 30:2
- **Ventilazioni**: dare ciascuna ventilazione di soccorso in circa un secondo (interruzione < 10 secondi per 2 ventilazioni)
- **Ridurre al minimo le interruzioni nelle compressioni** (pausa pre- e post-shock < 10 sec)

Programmi di accesso pubblico alla defibrillazione (PAD)

- Da implementare nei luoghi pubblici con una elevata densità di persone
- Posizionamento dei DAE nelle zone in cui ci si aspetta un arresto cardiaco ogni 5 anni → intervento conveniente
- Posizionamento DAE guidato da epidemiologia arresti cardiaci in una determinata zona e caratteristiche del quartiere
- Registrazione dei DAE all'interno di un programma PAD per geolocalizzazione e ottimizzazione recupero

Circulation
JOURNAL OF THE AMERICAN HEART ASSOCIATION

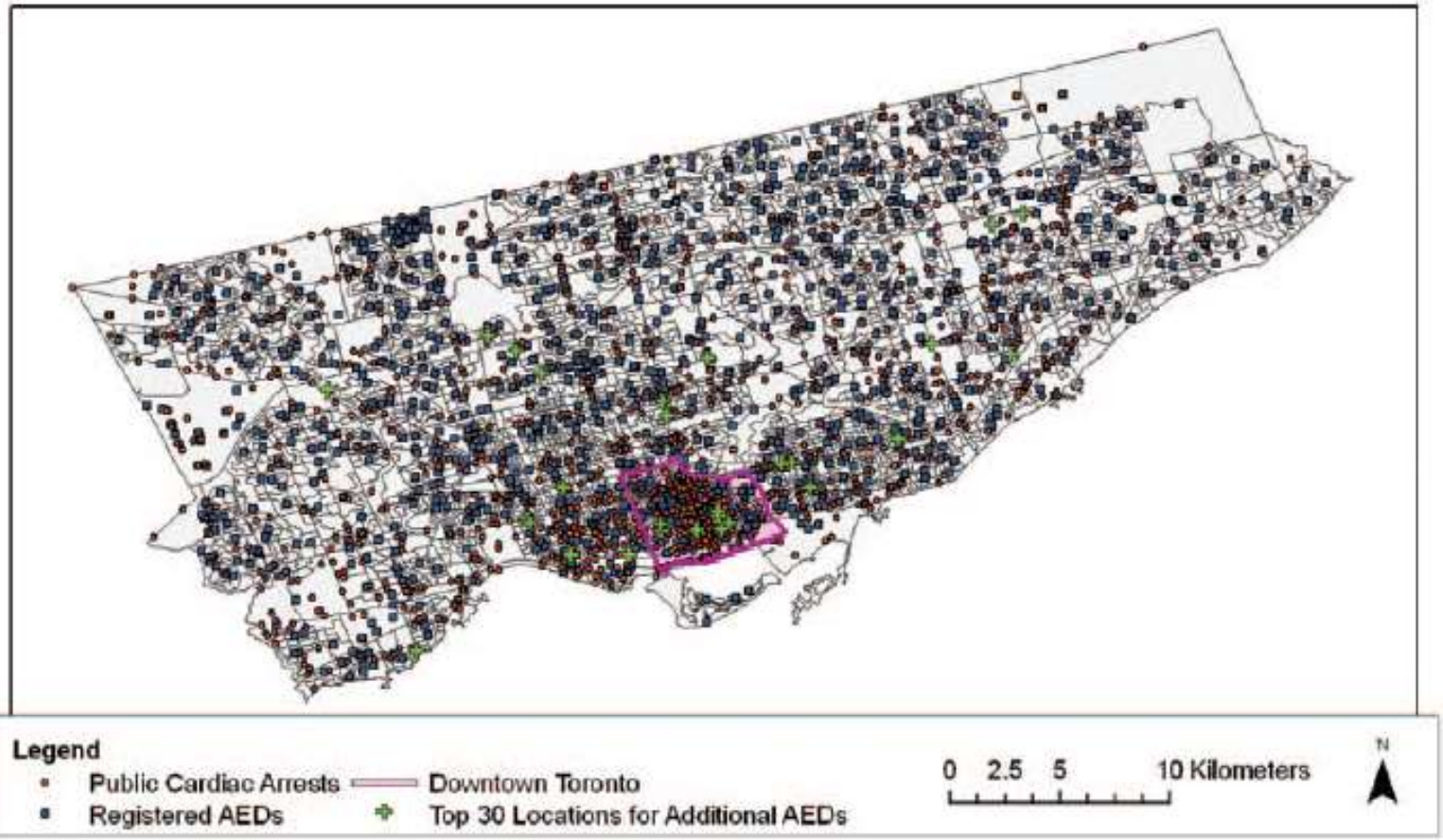
American Heart Association®

IRC

Identifying Locations for Public Access Defibrillators Using Mathematical Optimization

Timothy C.Y. Chan, Heyse Li, Gerald Lebovic, Sabrina K. Tang, Joyce Y.T. Chan, Horace C.K. Cheng, Laurie J. Morrison and Steven C. Brooks

Circulation. 2013;127:1801-1809



Risposta della comunità coordinata ed efficace

Ruolo della centrale operativa

RCP guidata via telefono

Gli operatori di centrale operativa svolgono un ruolo importante nel:

- riconoscimento precoce dell'arresto cardiaco
- esecuzione di una RCP assistita via telefono
- localizzazione ed invio di un DAE

Original Investigation

Association of National Initiatives to Improve Cardiac Arrest Management With Rates of Bystander Intervention and Patient Survival After Out-of-Hospital Cardiac Arrest

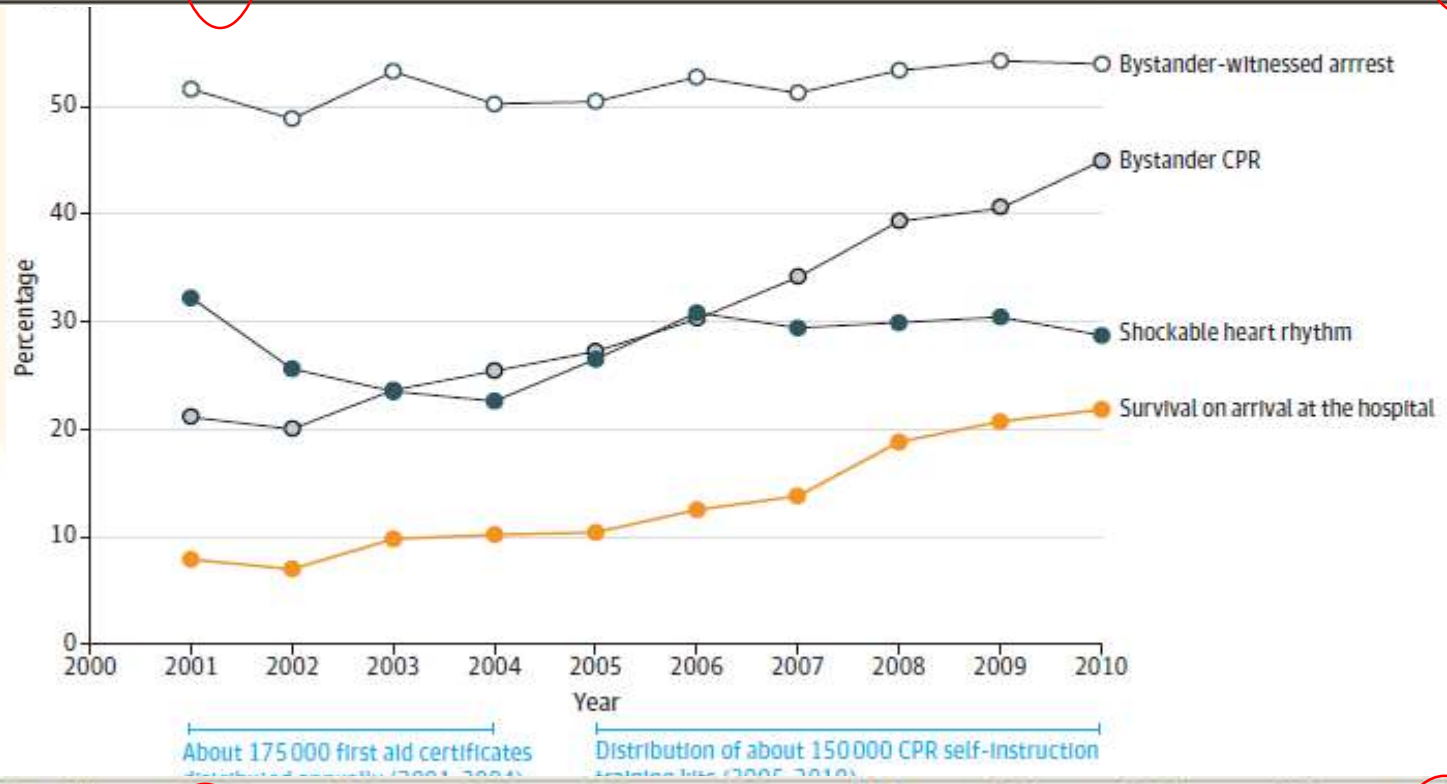
Mads Wissenberg, MD; Freddy K. Lippert, MD; Fredrik Folke, MD, PhD; Peter Weeke, MD; Carolina Malta Hansen, MD; Erika Frischknecht Christensen, MD; Henning Jans, MD; Poul Anders Hansen, MD; Torsten Lang-Jensen, MD; Jonas Bjerring Olesen, MD; Jesper Lindhardsen, MD; Emil L. Fosbol, MD, PhD; Søren L. Nielsen, MD; Gunnar H. Gislason, MD, PhD; Lars Kober, MD, DSc; Christian Torp-Pedersen, MD, DSc

19.468 arresti cardiaci tra il 2000 e il 2010

L'aumento della sopravvivenza in 10 anni è stato correlato con l'aumento della RCP da parte degli astanti

JAMA 2013

Survival, No. (%)											
On arrival at hospital	91 (7.9)	140 (7.0)	202 (9.8)	193 (10.2)	203 (10.4)	211 (12.5)	217 (13.8)	310 (18.8)	362 (20.7)	354 (21.8)	<.001
30-d	44 (3.5)	86 (3.8)	102 (4.5)	102 (4.9)	104 (5.0)	143 (7.6)	136 (7.5)	189 (10.2)	203 (10.2)	206 (10.8)	<.001
1-y	37 (2.9)	75 (3.3)	90 (4.0)	87 (4.1)	100 (4.8)	133 (7.0)	122 (6.7)	173 (9.4)	184 (9.3)	195 (10.2)	<.001



Bystander CPR, No. (%)	247 (21.1)	408 (20.0)	496 (23.6)	492 (25.4)	539 (27.2)	514 (30.2)	563 (34.1)	714 (39.3)	799 (40.5)	849 (44.9)	<.001
AED use by bystander, No. (%)	13 (1.1)	23 (1.1)	21 (1.0)	18 (0.9)	33 (1.7)	22 (1.3)	29 (1.8)	22 (1.3)	24 (1.4)	36 (2.2)	.003

The NEW ENGLAND JOURNAL of MEDICINE

2015

ORIGINAL ARTICLE

Mobile-Phone Dispatch of Laypersons for CPR in Out-of-Hospital Cardiac Arrest

Mattias Ringh, M.D., Mårten Rosenqvist, M.D., Ph.D., Jacob Hollenberg, M.D., Ph.D., Martin Jonsson, B.Sc., David Fredman, R.N., Per Nordberg, M.D., Hans Järnbert-Pettersson, Ph.D., Ingela Hasselqvist-Ax, R.N., Gabriel Riva, M.D., and Leif Svensson, M.D., Ph.D.

Table 2. Primary and Secondary Outcomes.*

Outcome	Intervention	Control	Difference (95% CI)	P Value
	no. of patients/total no. (%)		*percentage points*	
Primary outcome: bystander-initiated CPR	188/305 (61.6)	172/360 (47.8)	13.9 (6.2 to 21.2)	<0.001
Secondary outcome				
30-day survival	32/286 (11.2)	28/326 (8.6)	2.6 (–2.1 to 7.8)	0.28
Return of spontaneous circulation	90/306 (29.4)	105/361 (29.1)	0.3 (–6.5 to 7.3)	0.93
Shockable rhythm: ventricular fibrillation or ventricular tachycardia	58/301 (19.3)	60/347 (17.3)	2.0 (–4.0 to 8.0)	0.52
Bystander-initiated CPR including CPR performed with telephone instructions	196/305 (64.3)	197/360 (54.7)	9.5 (2.0 to 16.9)	0.01

Grazie per l'attenzione!

viva! la settimana per la rianimazione cardiopolmonare