Brug af hjertestartere, hjertestop og genoplivning

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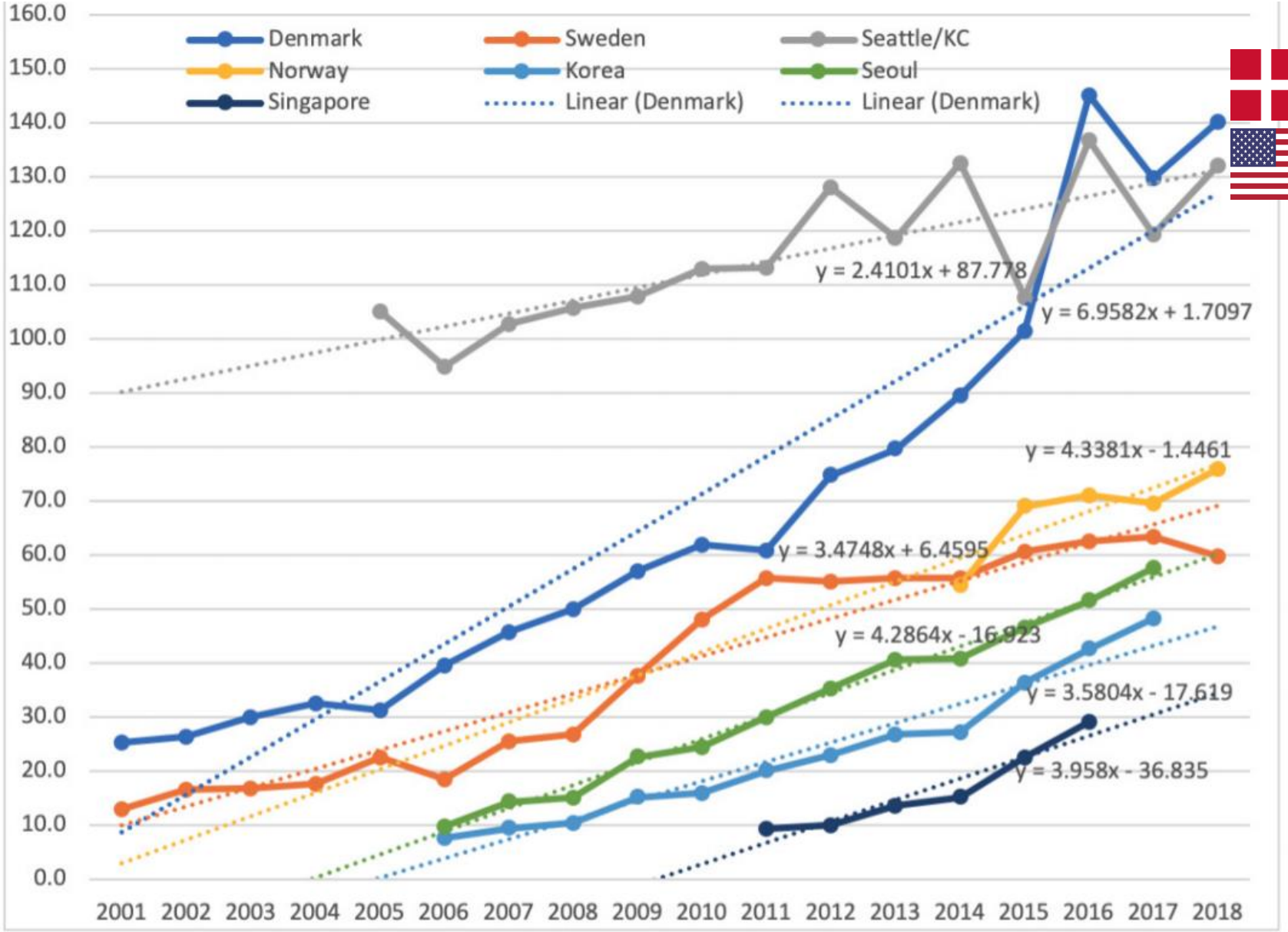
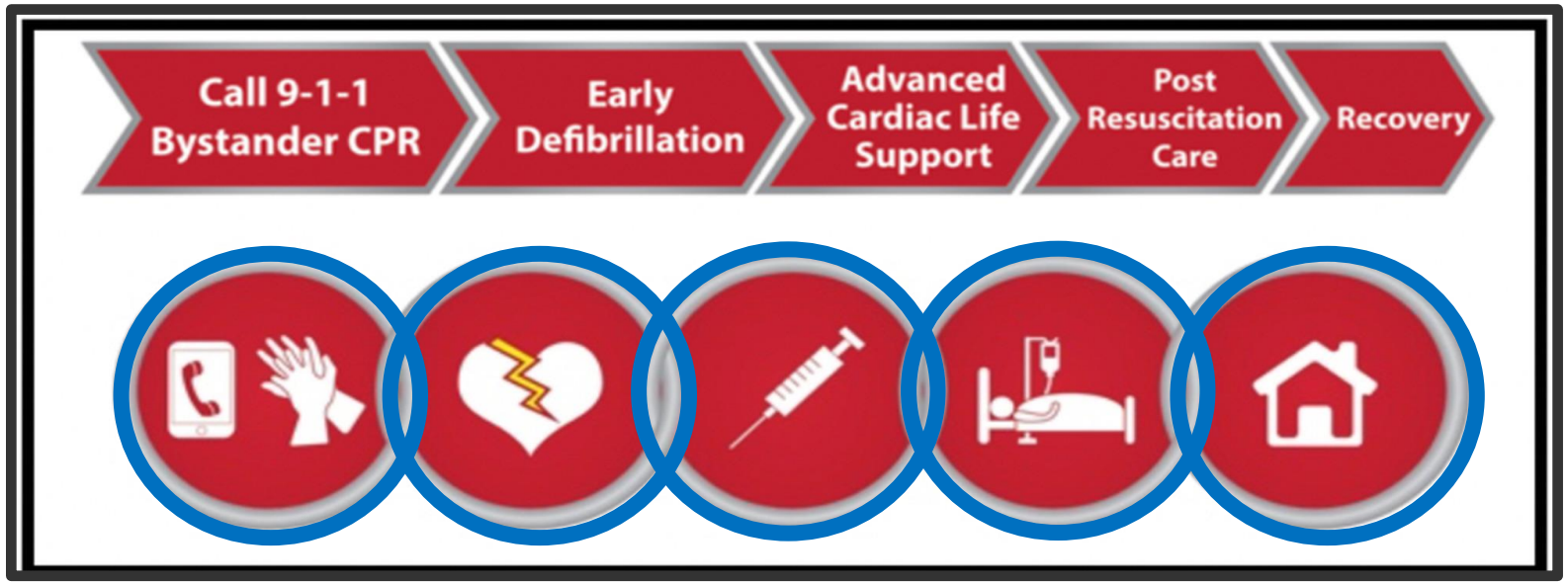
OHCA survival per million prs.

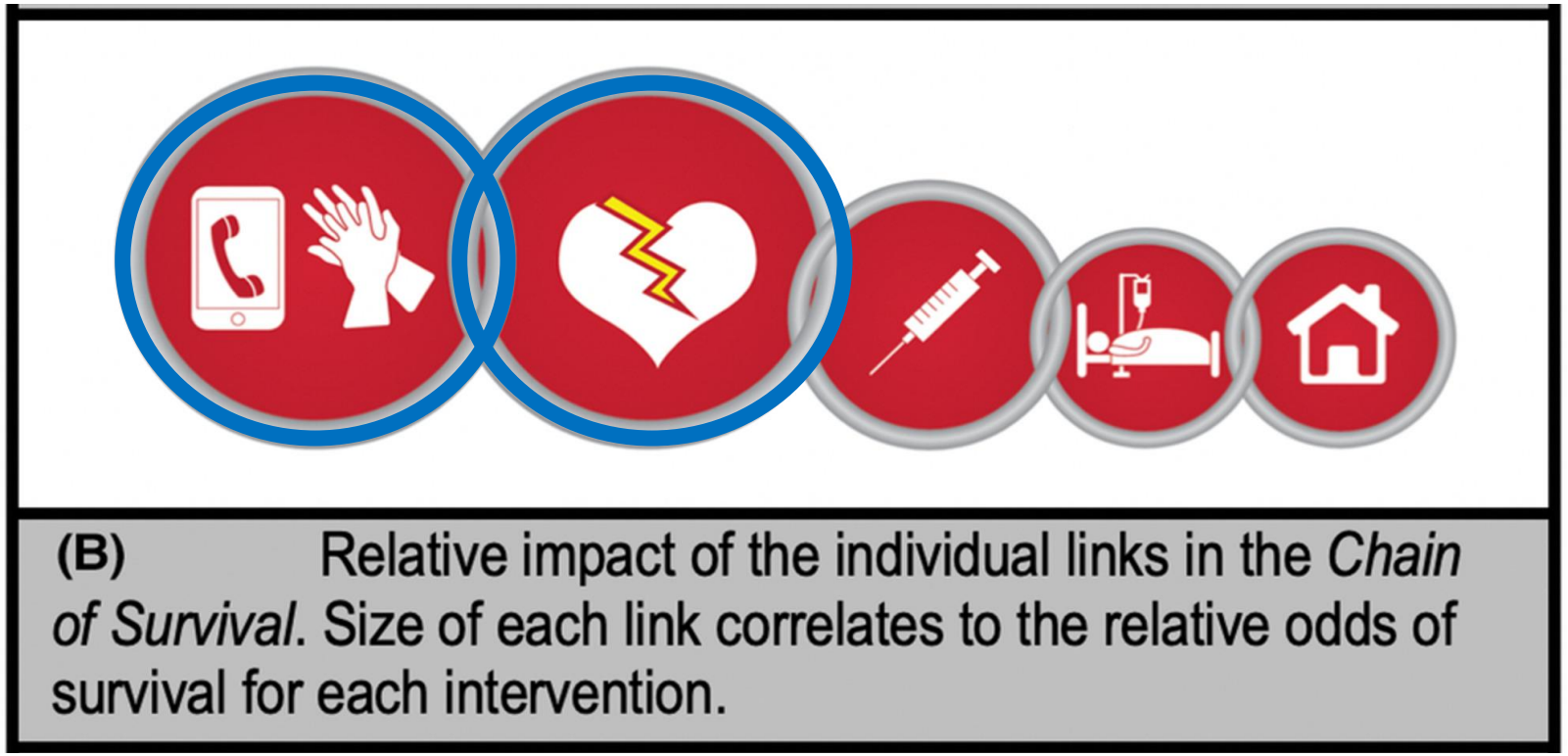


Chain of Survival…



Academic Emergency Medicine, First published: 26 July 2022, DOI: (10.1111/acem.14569)

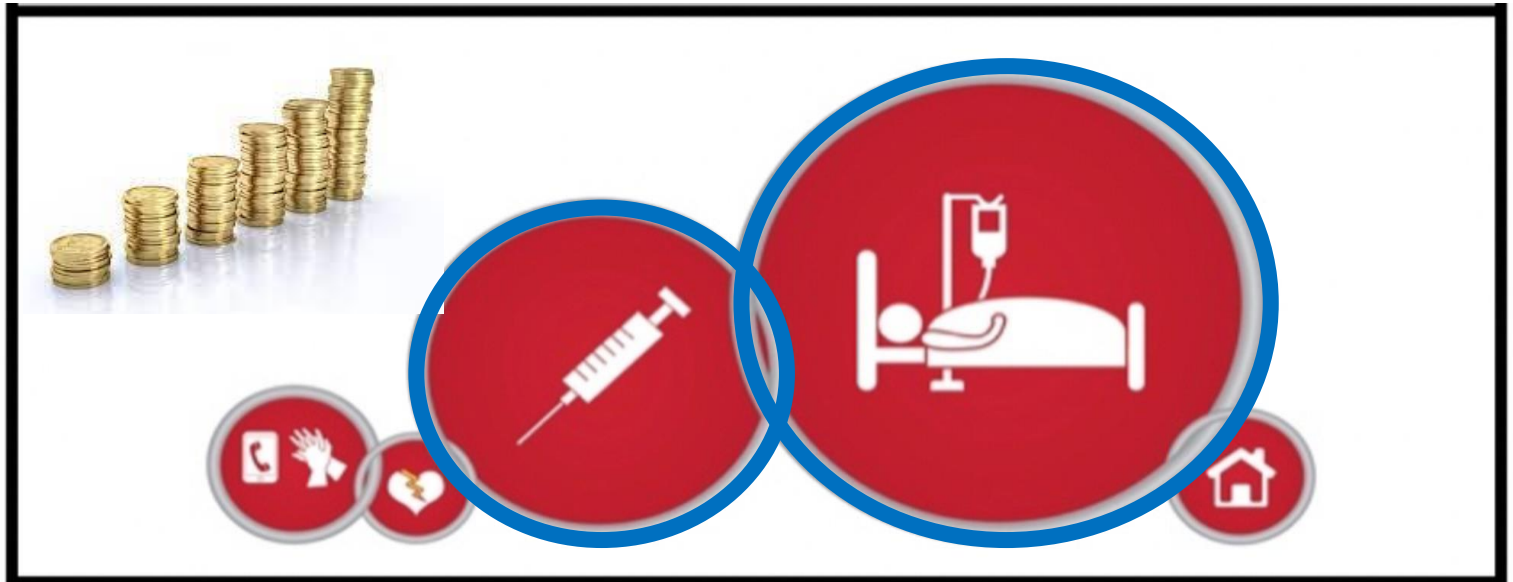
But not all links are equal…



(B) Relative impact of the individual links in the *Chain of Survival*. Size of each link correlates to the relative odds of survival for each intervention.

Academic Emergency Medicine, First published: 26 July 2022, DOI: (10.1111/acem.14569)

And paradoxical in research funding!



(C) NIH research investment in the *Chain of Survival* links. Size of each link correlates to relative number of grants awarded FY2017-2021.

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TOP 10 CARDIAC ARREST RANDOMIZED TRIALS OF 2022

INFOGRAPHIC BY
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References and details of selected trials are available at tscquizzato.com

OHCA/IHCA · POST-ARREST

Treating Rhythmic and Periodic EEG Patterns in Comatose Survivors of Cardiac Arrest

Ruijter BJ et al. **N Engl J Med.**

INTERVENTION

Suppressing rhythmic and periodic EEG activity with antiseizure medications for at least 48 hours versus usual care alone

PRIMARY OUTCOME

CPC score

90% vs ; P=0.68)

MAIN FINDING

In comatose survivors of cardiac arrest with rhythmic and periodic activity, intensive antiseizure treatment for at least 48 hours did not improve neurologic outcomes at 3 months

OHCA · INTRA-ARREST

Functional Neurologic Outcomes After Early Invasive Management of Out-of-Hospital Cardiac Arrest

Belohlavek J et al. **JAMA.**

INTERVENTION

Early intra-arrest transport, ECPR, and invasive assessment versus continued ALS on site in refractory VF

PRIMARY OUTCOME

CPC score

32% vs 2 5; P = 0.09)

MAIN FINDING

In refractory VF arrest transport, ECPR, and invasive assessment did not significantly improve survival with neurologically favorable outcome at 180 days

OHCA · POST-ARREST

Emergency vs Delayed Coronary Angiogram in Survivors of Out-of-Hospital Cardiac Arrest

Hauw-Berlemont C et al. **JAMA Cardiol.**

INTERVENTION

Emergency versus delayed (48 to 96 hours) coronary angiography in survivors of an OHCA without elevation on ECG

PRIMARY OUTCOME

CPC score

34% vs 3 5; P = 0.32)

MAIN FINDING

In patients with OHCA without ST elevation, emergency CAG was not better than delayed CAG with respect to the 180-day survival rate with no or minimal neurologic sequelae

OHCA · POST-ARREST

Effect of Lower vs Higher Oxygen Saturation Targets on Survival to Hospital Discharge After OHCA

Bernard SA et al. **JAMA.**

INTERVENTION

Oxygen titration to achieve a saturation of 90-94% (intervention) versus 0% (standard care) after ROSC and ICU

PRIMARY OUTCOME

Survival to

38% vs 4 .00; P = 0.05)

MAIN FINDING

Among OHCA, targeting an O_2 saturation compared with 98-100%, until to the ICU did not significantly improve survival to discharge

OHCA · POST-ARREST

Blood-Pressure Targets in Comatose Survivors of Cardiac Arrest

Kjaergaard J et al. **N Engl J Med.**

INTERVENTION

MAP target of 77 mmHg versus 62 mmHg in comatose adults from OHCA of cardiac cause

PRIMARY OUTCOME

Death or within 90 day

34% vs 87; P = 0.56)

MAIN FINDING

Targeting mmHg in patients resuscitated not result in significantly different percentages of patients dying or having severe disability or coma

OHCA · POST-ARREST

Oxygen Targets in Comatose Survivors of Cardiac Arrest

Schmidt H et al. **N Engl J Med.**

INTERVENTION

Restrictive oxygen target of a PaO_2 of 9-10 kPa (68-75 mmHg) versus a liberal oxygen target of a PaO_2 of 13-14 mmHg)

PRIMARY OUTCOME

Death or within 90 day

32% vs -1.21; P = 0.69)

MAIN FINDING

Targeting oxygenation strategy after OHCA resulted in a similar incidence of death or severe disability or coma

OHCA · POST-ARREST

Duration of Device-Based Fever Prevention after Cardiac Arrest

Hassager C et al. **N Engl J Med.**

INTERVENTION

Temperature control at 36°C for 24h followed by device-based fever prevention (target 37°C) until 12h or awakening 48h or awakening

PRIMARY OUTCOME

Death or within 90 day

32% vs 3 .26; P = 0.70)

MAIN FINDING

Active device prevention for 36 or 72 hours after result in significantly different percentages of patients dying or having severe disability or coma

OHCA · INTRA-ARREST

Defibrillation Strategies for Refractory Ventricular Fibrillation

Cheskes S et al. **N Engl J Med.**

INTERVENTION

Standard versus vector-change (VC) versus double sequential external defibrillation (DSED) in patients who remained after 3 shocks

PRIMARY OUTCOME

Survival to

13% (stan % (DSED)

aRR 1.71; 95%

aRR 2.21; 95% d)

MAIN FINDING

In patients with ventricular fibrillation, survival to hospital discharge occurred more frequently with DSED or VC defibrillation than standard defibrillation

IHCA · POST-ARREST

Temperature Control After In-Hospital Cardiac Arrest

Wolfrum S et al. **Circulation.**

INTERVENTION

Hypothermic temperature control (32-34°C) for 24 h versus (≤37.5°C)

PRIMARY OUTCOME

All-cause

73% vs 7 0; P = 0.82)

MAIN FINDING

Hypothermia as compared not improve outcome at day 180 in patients with OHCA after IHCA

OHCA · INTRA-ARREST

Effect of Smartphone Dispatch of Volunteer Responders on Automated External Defibrillators and OHCAs

Berglund E et al. **JAMA Cardiol.**

INTERVENTION

Smartphone responders to retrieve nearby AEDs to the OHCA versus to perform CPR

PRIMARY OUTCOME

Bystander

13% vs 9. -2.01; P = 0.08)

MAIN FINDING

Smartphone dispatch of volunteer responders to OHCAs to retrieve nearby AEDs vs instructions to directly perform CPR did not significantly increase bystander AED use

Nationwide AED registry in Denmark

REGION

Find hjertestartere

Skriv fx vej eller by

Alle regioner

Alle kommuner

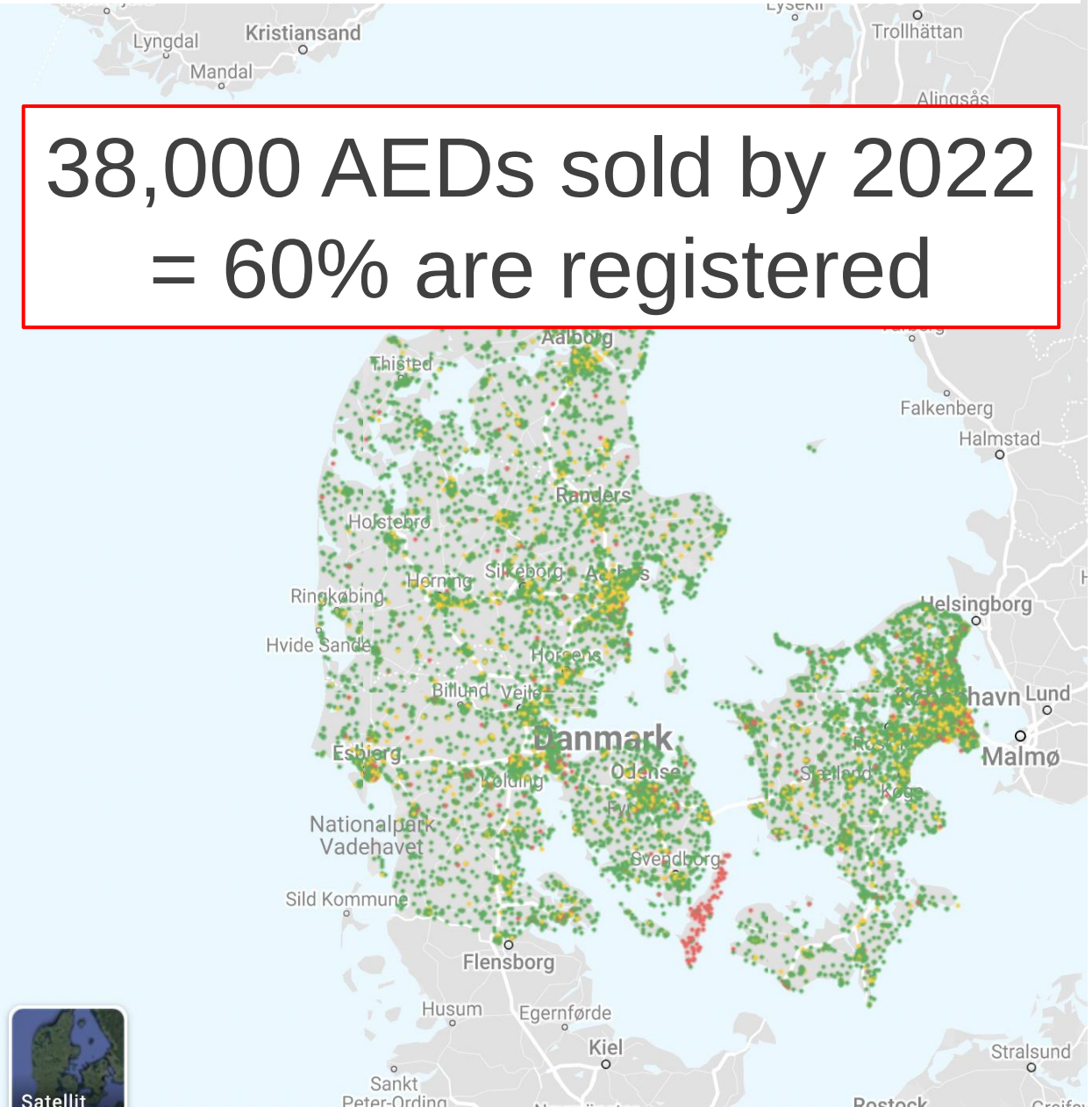
Hjertestartere i Alle regioner

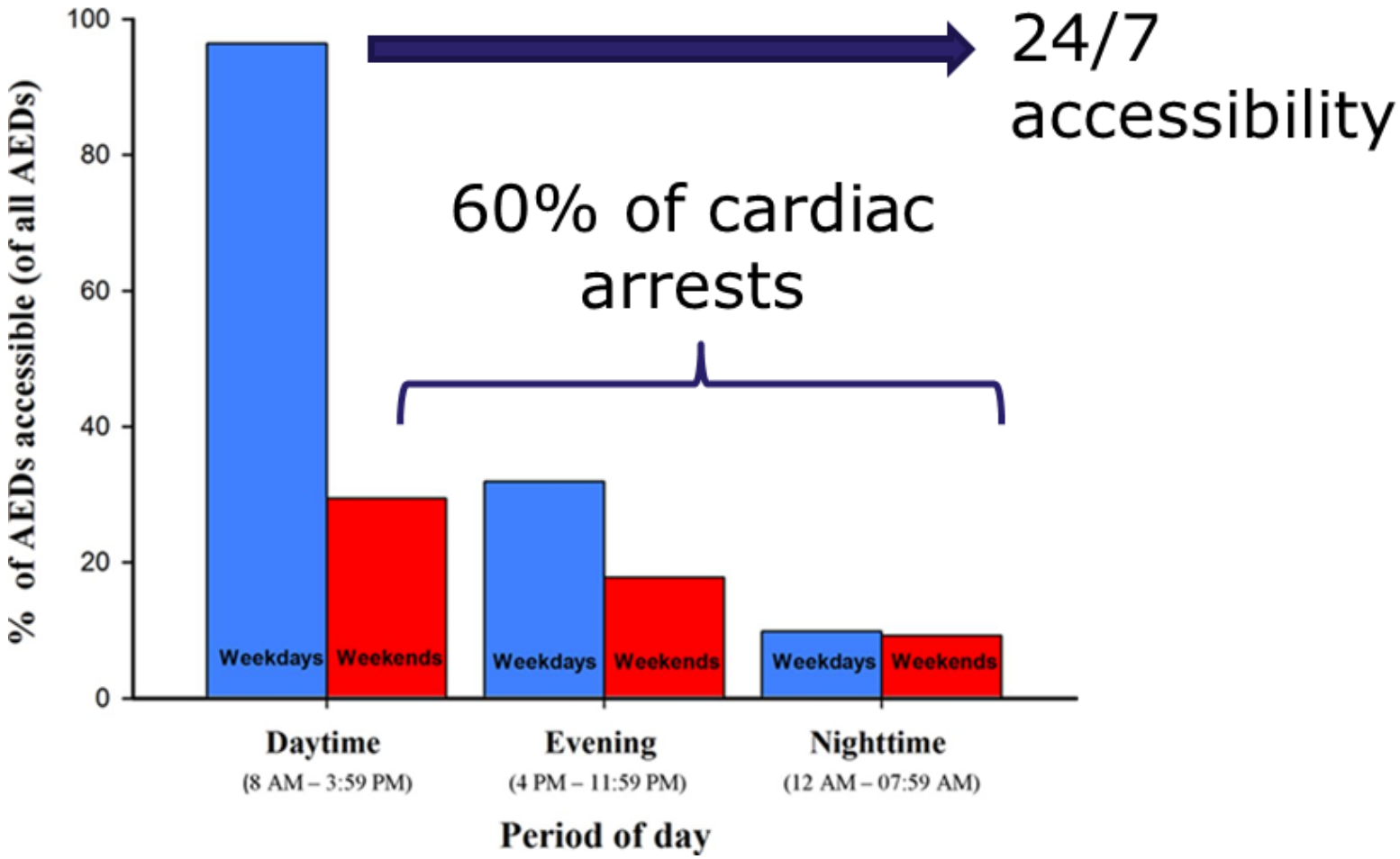
23056

- **15317** Heraf døgnåbne:
- **6527** Tilgængelig i åbningstiden:
- **1212** Bag lås og slå:

Heart Runner

38,000 AEDs sold by 2022
= 60% are registered





Malta Hansen, C., et al. Circulation. 2013 Nov 12;128(20):2224-31

RESUSCITATION 136 (2019) 30–37

ELSEVIER

Available online at www.sciencedirect.com

Resuscitation

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

EUROPEAN RESUSCITATION COUNCIL

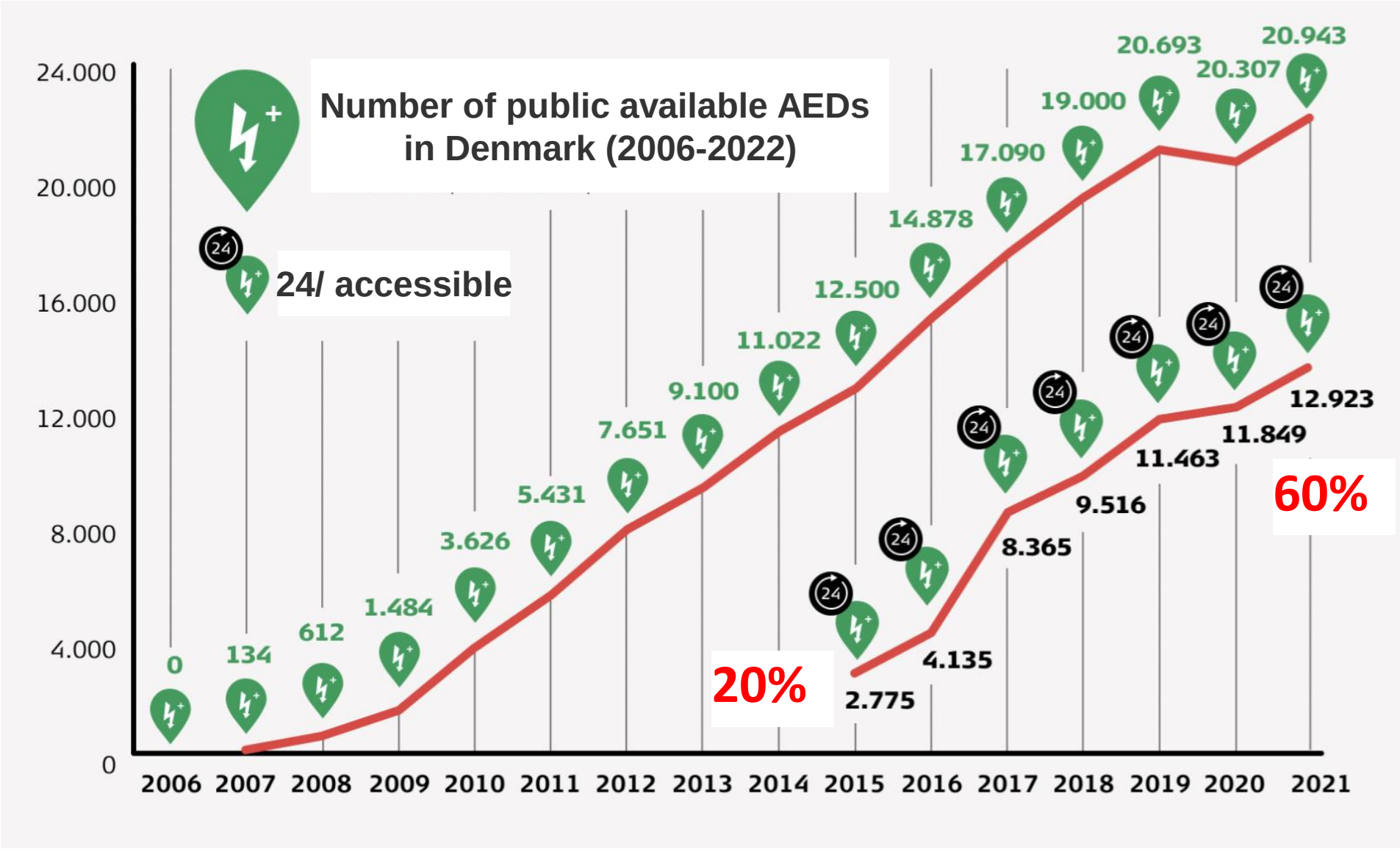
Clinical paper

If the nearest AED was accessible vs. inaccessible:

- *Chance of a bystander defibrillation was tripled (13.8% vs 4.3%)*
- *30-day survival doubled (28.8% vs 16.4%)*

Lena Karlsson [a,b,*], ***Carolina Malta Hansen*** [b,c], ***Mads Wissenberg*** [a,b], ***Steen Møller Hansen*** [d], ***Freddy K. Lippert*** [b], ***Shahzleen Rajan*** [a], ***Kristian Kragholm*** [d,e], ***Sidsel G. Møller*** [a], ***Kathrine Bach Søndergaard*** [a], ***Gunnar H. Gislason*** [a,f], ***Christian Torp-Pedersen*** [d,g], ***Fredrik Folke*** [a,b]

Public available AEDs



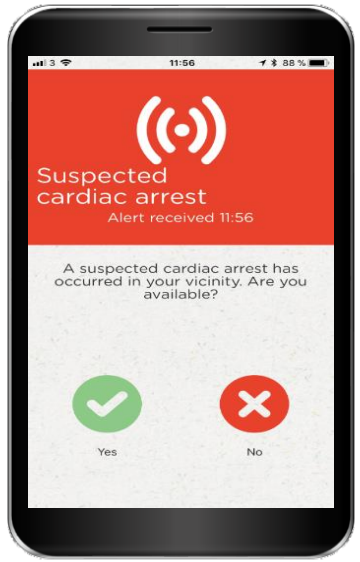
TrygFonden
HJERTE LØBER

Volunteer responder activity

2017-2022

≈9,700 OHCA activations

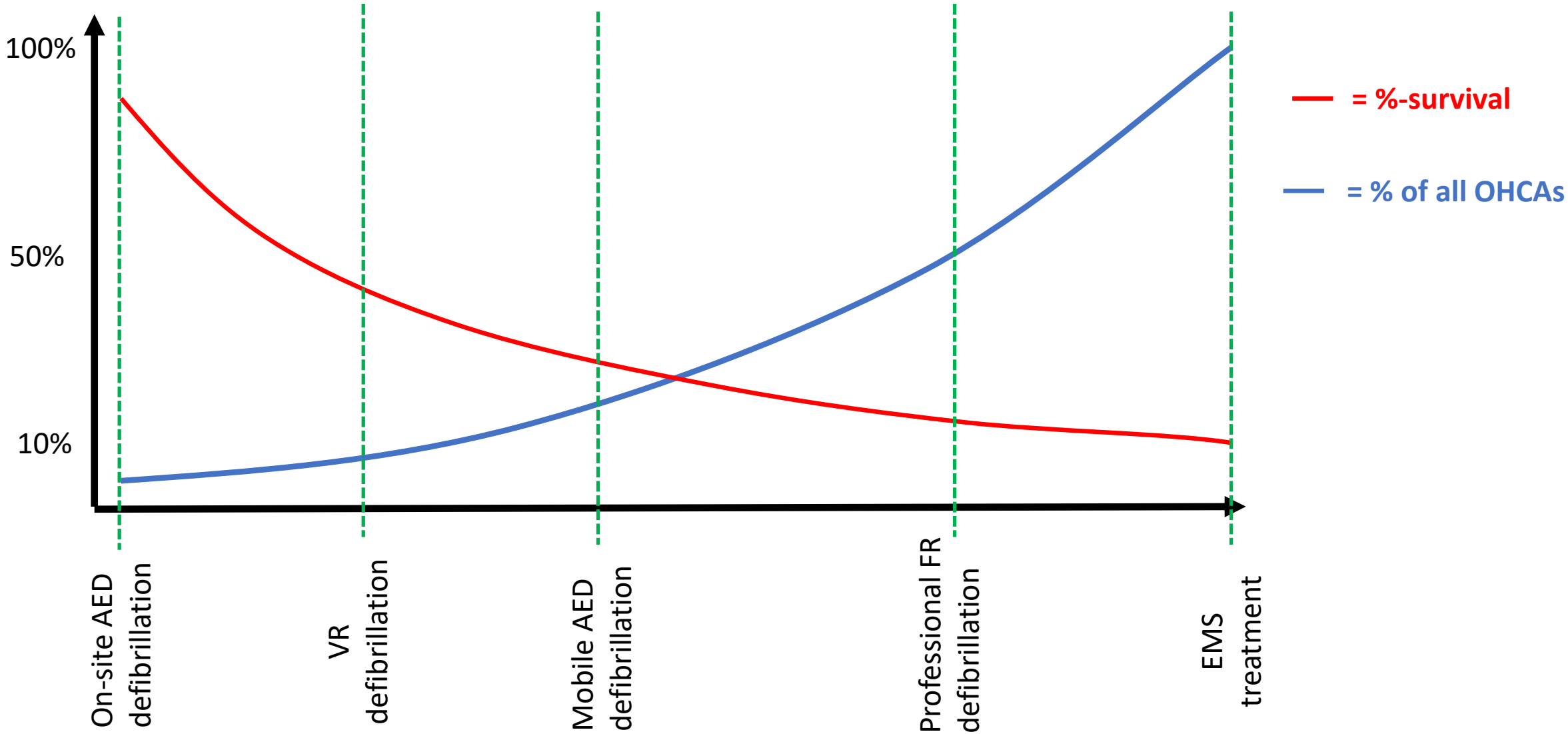
≈160,000 alerted Volunteer responders



≈55,000 VR accepted alarms!

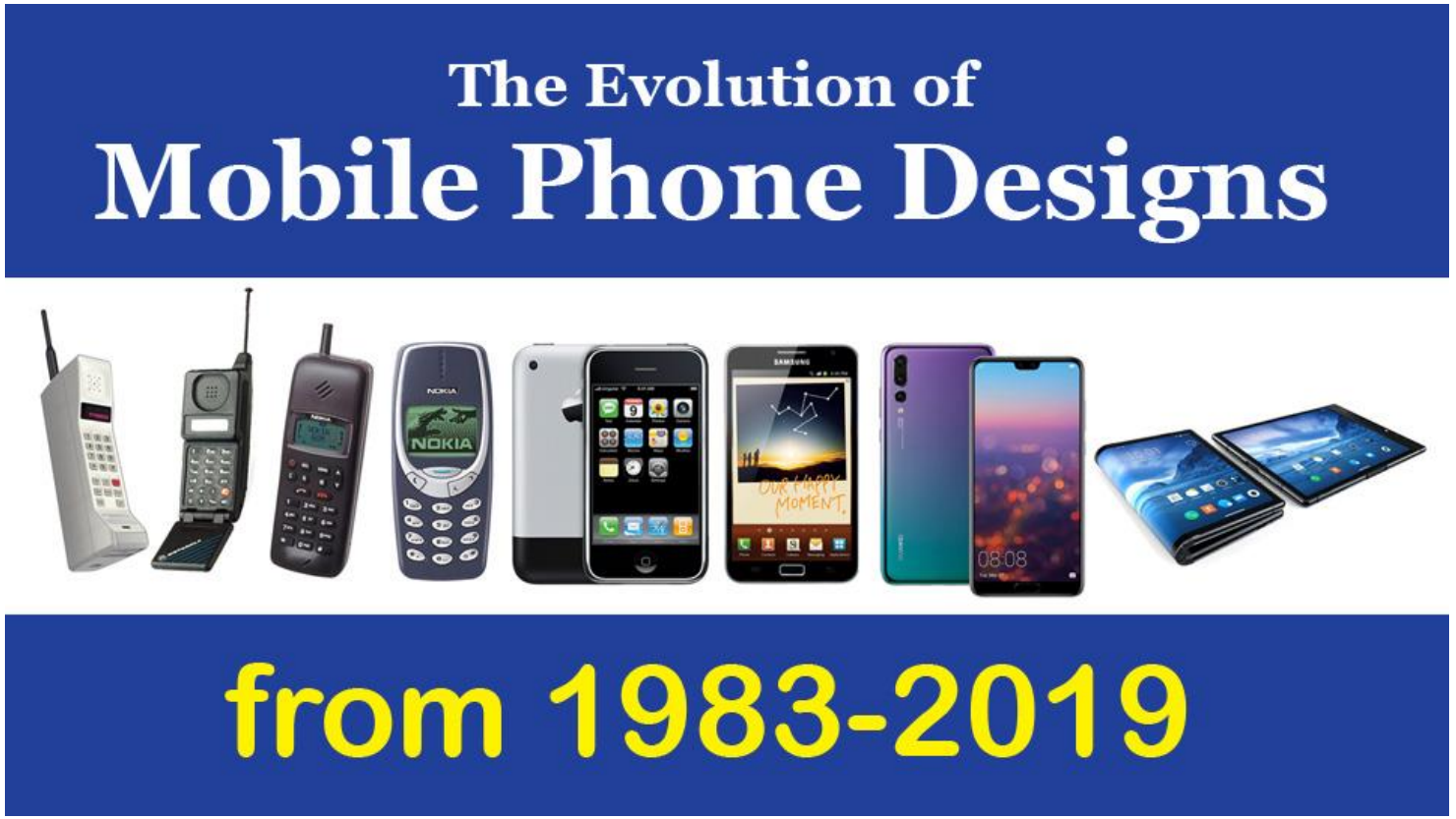
REGION H

Potential benefits and limitations of early defibrillation strategies



Future solutions?

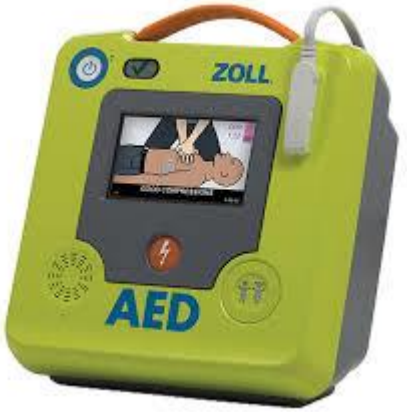
Den elektroniske udvikling…



Gælder den for Hjertestartere???

AED anno 1968

AED anno 2023



Mobile vs. Stationary AEDs

- Singapore bruger AED i taxaer
- Live GPS tracking af alle køretøjer til Vagtcentralen
- Uddanne i HLR og AED brug
- Alarmering som med Hjerteløbere beregnet på formodet køreafstand/tid
- Sammenligne med stationære AED'er bragt via Hjerteløber:

Drone AED delivery

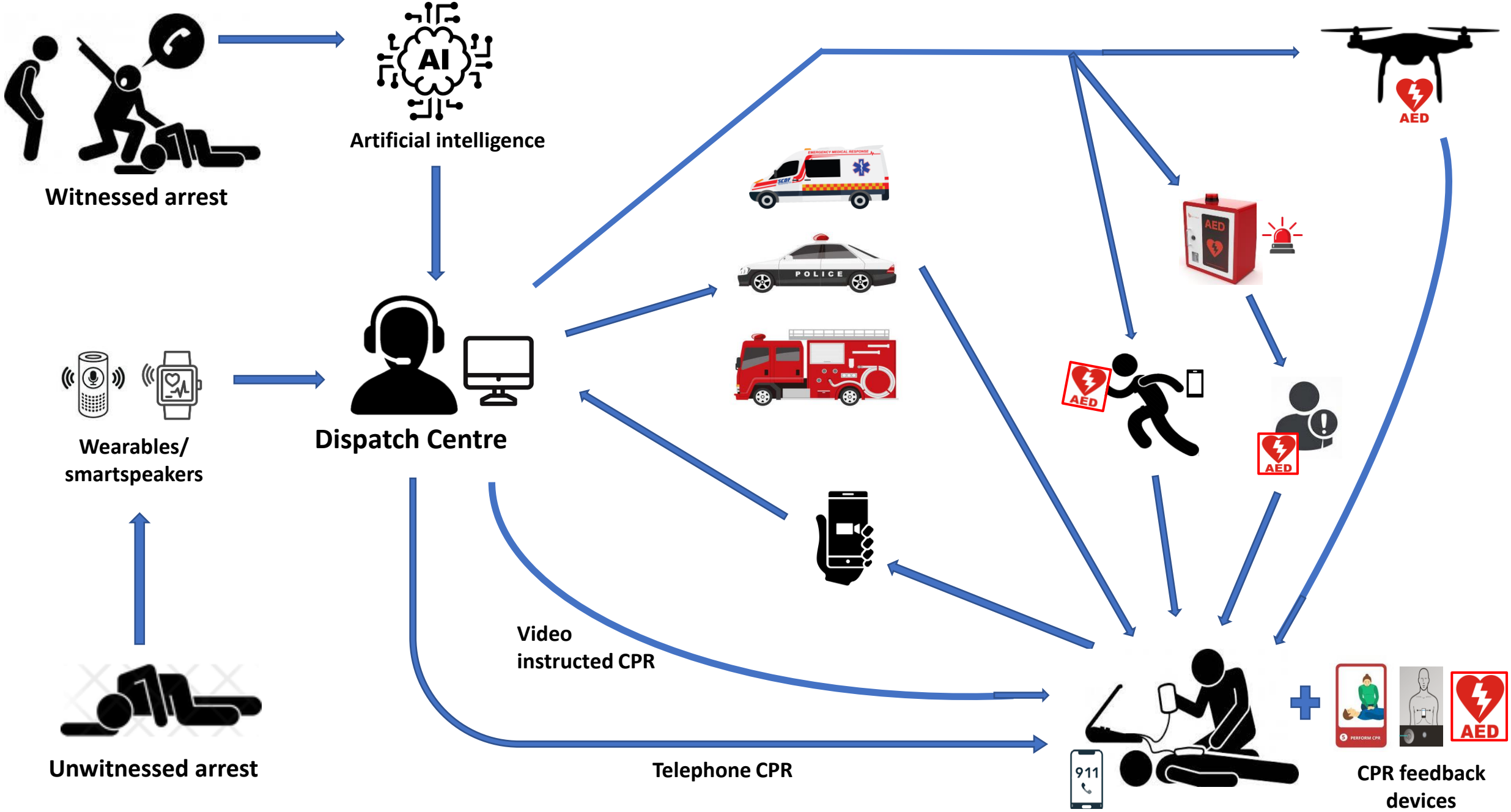
Emergency Medical Services Copenhagen

Karolinska Institutet

EVERDRONE

DEN PRÆHOSPITALE VIRKSOMHED
– i gode hænder

novo nordisk fonden
Benefiting people and society


Witnessed arrest
AI
Artificial intelligence
AED
POLICE
AED
AED
AED
Wearables/
smartspeakers
Dispatch Centre
Video
instructed CPR
Unwitnessed arrest
Telephone CPR
911
AED
CPR feedback
devices

Bystander defibrillation in Denmark