



Karolinska
Institutet

Chest compression only improves outcome in out-of-hospital cardiac arrest?

Katarina Bohm

RN, PhD Cand

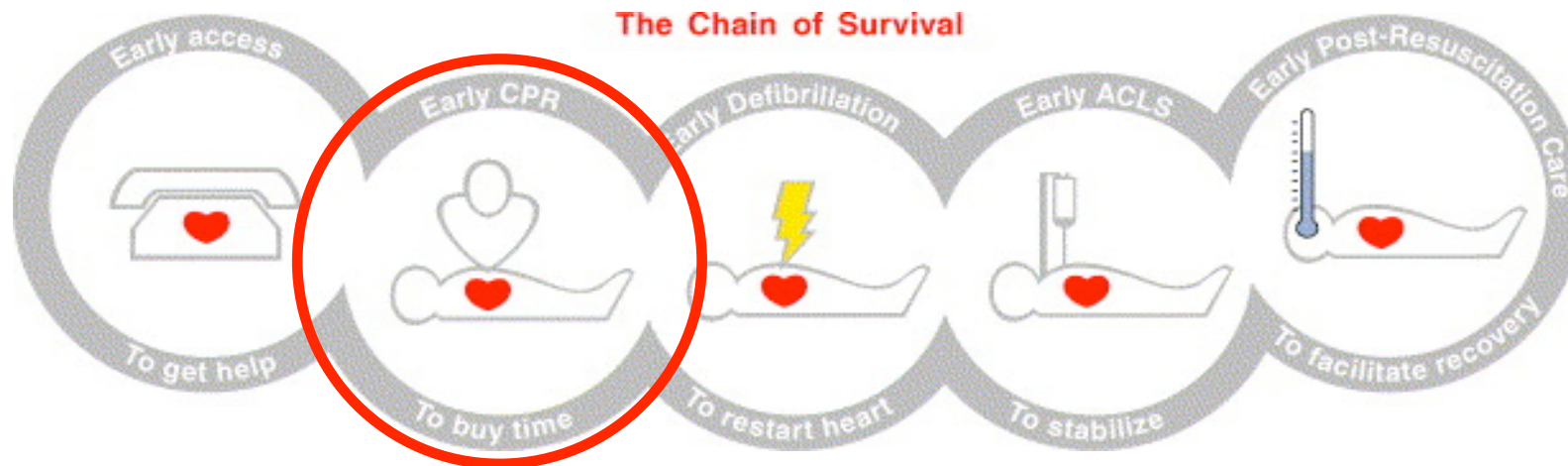
Department of Clinical Science and Education,

Södersjukhuset, Section of Cardiology

Stockholm Sweden

Out-of-hospital Cardiac Arrest (OHCA)

- Low survival



Bystander CPR



Bystander CPR increase survival in OHCA

Gallagher et al JAMA 1995
Cobb et al JAMA 1999
Waalewijn et al Resuscitation 2001
Stiell et al N Eng J Med 2004
Herlitz et al Am Heart J 2005

Bystander CPR

**Ventilation and compression CPR
or
Compression only
?**

ERC Guidelines 2005

”Bystanders...should immediately initiate...
30 chest compressions of adequate force and
depth at a rate of 100/minute followed by 2
mouth-to-mouth ventilations”

Handley et al European Resuscitation Council guidelines for resuscitation 2005.
Resuscitation 2005

CPR without ventilation?

- **Observational study 1**
- 439 compression only, 712 standard CPR

- **Results**

- Subgroup: witnessed collapse and VF

- Favourable neurological outcome:

Compression only	22%
Standard CPR	10%

SOS-KANTO Lancet 2007

CPR without ventilation?

- **Observational study 2**
- 544 compression only, 783 standard CPR
- **Results**
 - 1-year survival with favourable neurological outcome:

Compression only 4.3%

Standard CPR 4.1%

Iwami et al Circulation 2007

CPR without ventilation?

- **Observational study 3**
- 1145 compression only, 8209 standard CPR
- **Results**

→ Survival 1 month:

Compression only	6.7%
standard CPR	7.2% NS

Bohm et al Circulation 2007

CPR without ventilation?

- **Randomized study – Telephone-CPR**
- 241 compression only, 279 standard CPR
- Results

→Survival:	Compression only	14.6%
	Standard CPR	10.4%

Hallstrom et al N Eng J Med 2000



**Karolinska
Institutet**

TANGO

TELEPHONE ASSISTED CPR.
AN EVALUATION OF EFFICIENCY AMONGST
COMPRESSION ONLY AND STANDARD CPR.



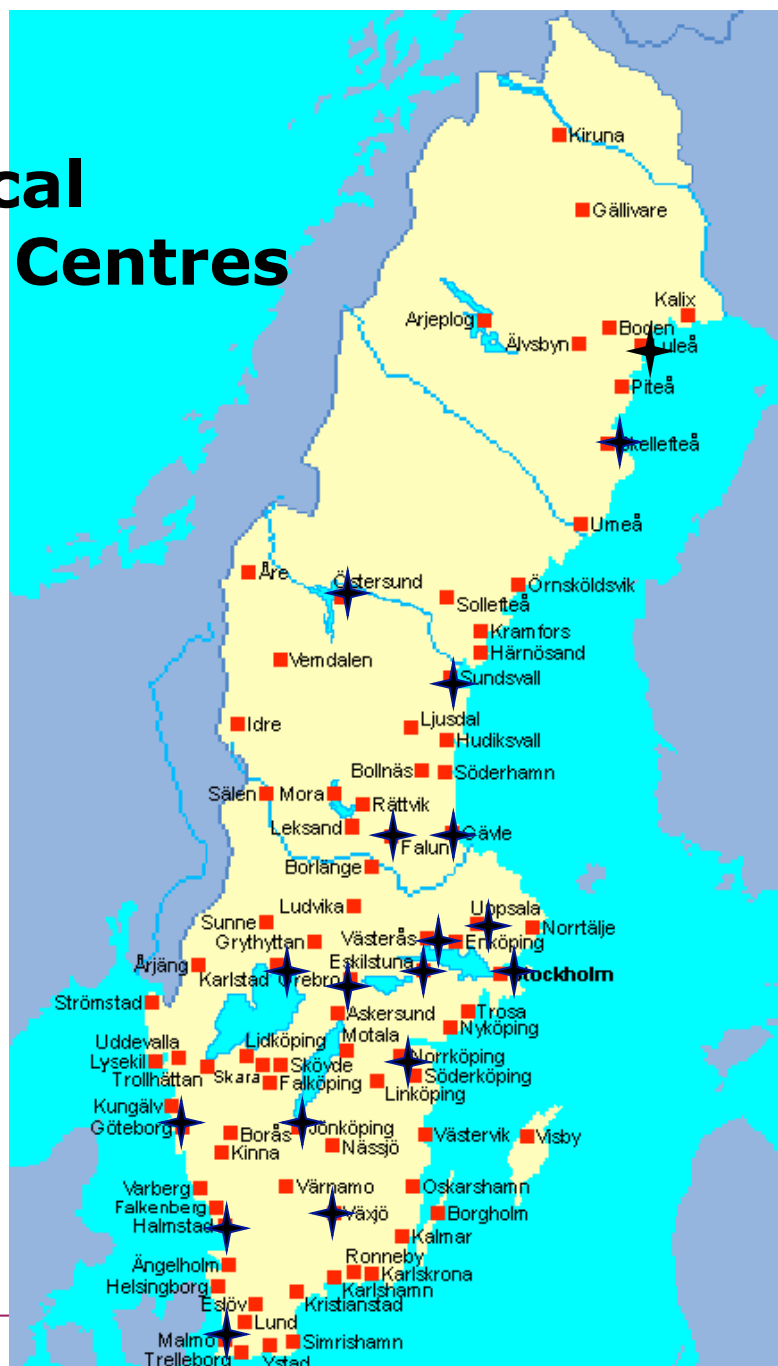
Hypothesis

- Increased survival for witnessed OHCA patients with compression only CPR

SOS Alarm ✦ Emergency Medical Service Dispatch Centres in Sweden



Karolinska
Institutet





Methods

- Randomized controlled trial
- Telephone-CPR by dispatchers
 - Compression only
 - Standard CPR
- Primary endpoint: survival at one month
- 3 800 non traumatic OHCA patients in Sweden

DART Dispatcher-assisted resuscitation trial

- Washington state
- RCT
- Compression only vs standard CPR

Barriers to bystander CPR

- "A minority of trained bystanders perform CPR"
 - Panicked, not able to do CPR correct Swor et al Acad Emerg Med 2006
- "Psychological factors inhibit family members to initiate CPR"
 - The fear of failing impair confidence to start CPR

Dwyer Prehosp Emerg Care 2008

Barriers to bystander CPR, cont

- ” Lay people and health care providers are unlikely to perform standard CPR, but more likely to perform compression only”
 - Lay people: doubt they could perform CPR effectively
 - Health care providers: fear of getting a disease

Taniguchi et al Resuscitation 2007

Difficult to perform mouth-to-mouth ventilation

- Simulation study
- CPR instructions to voluntary laymen by EMS Dispatchers (n=18)







Conclusion

- Why do I think chest compression is the way to improve outcome in CA?
 - BCPR increase survival in OHCA
 - We have to increase the number of bystanders who are willing to take action and initiate CPR.
 - Bystander CPR have to be simple.