Haiglaväline taaselustamine südame äkksurmast Tartus ja Tallinnas aastatel 2015-2016

A.Sipria

Konverents-näitus KIIRABI 2017

Sudden Cardiac Arrest

- Cessation of cardiac activity resulting in unresponsiveness, abnormal breathing, and lack of circulation
- AHA 2015 incidence of out-of-hospital cardiac arrest **326,200**
  - Average survival rate is 10.6%
  - Nearly 1 in 3 survive when witnessed by a bystander
  - Approximately 6328 individuals < 18 years old in U.S. experienced out-of-hospital cardiac arrest

American Heart Association Heart Disease and Stroke Statistics 2015 Update

Resuscitation 105 (2016) 188–195

Contents lists available at ScienceDirect

Resuscitation

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

Clinical paper

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☆

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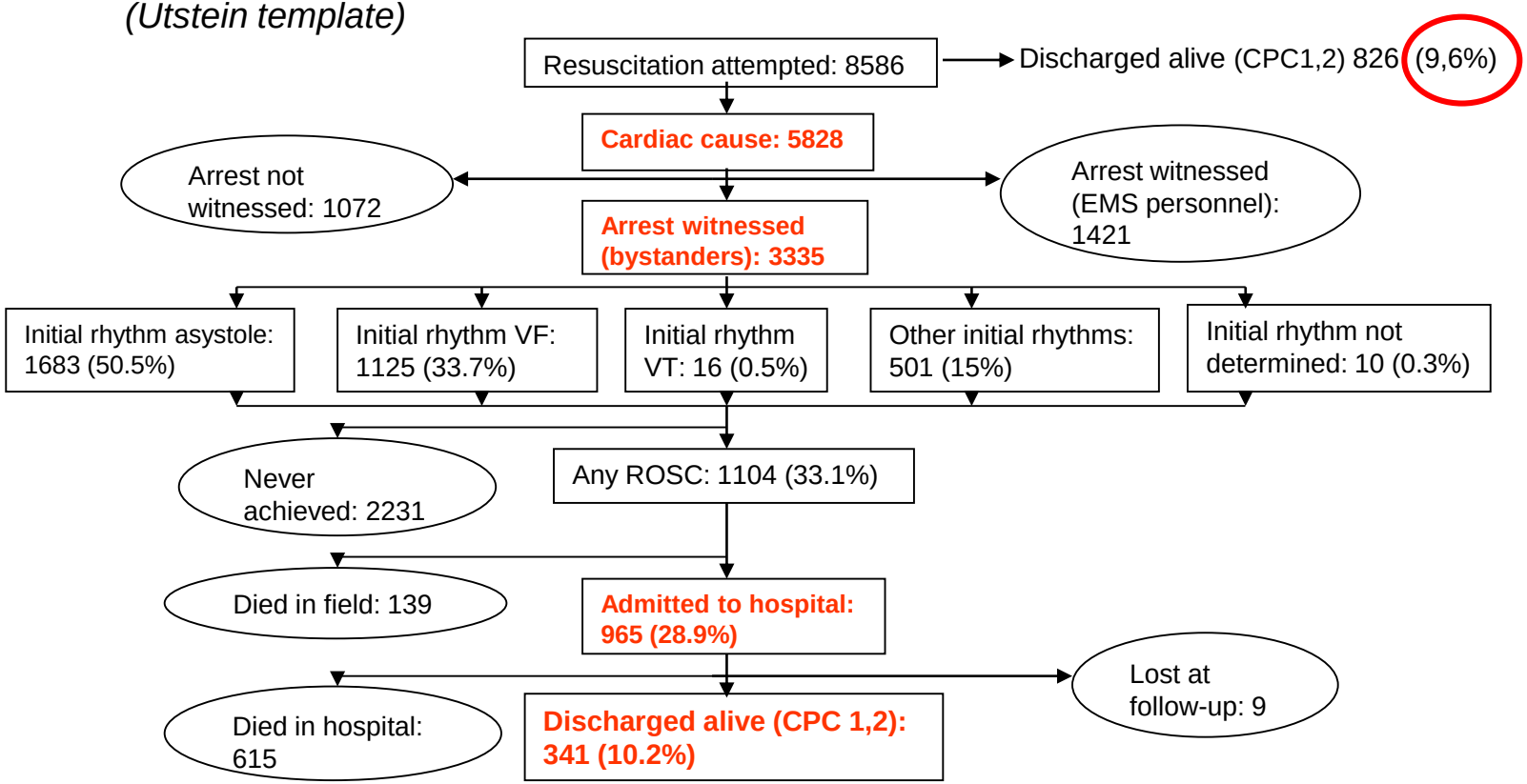
ABSTRACT

Introduction: The aim of the EuReCa ONE study was to determine the incidence, process, and outcome for out of hospital cardiac arrest (OHCA) throughout Europe.
Methods: This was an international, prospective, multi-centre one-month study. Patients who suffered an OHCA during October 2014 who were attended and/or treated by an Emergency Medical Service (EMS) were eligible for inclusion in the study. Data were extracted from national, regional or local registries.
Results: Data on 10,682 confirmed OHCAs from 248 regions in 27 countries, covering an estimated population of 174 million. In 7146 (66%) cases, CPR was started by a bystander or by the EMS. The incidence of CPR attempts ranged from 19.0 to 104.0 per 100,000 population per year. 1735 had ROSC on arrival at hospital (25.2%), Overall, 662/6414 (10.3%) in all cases with CPR attempted survived for at least 30 days or to hospital discharge.
Conclusion: The results of EuReCa ONE highlight that OHCA is still a major public health problem accounting for a substantial number of deaths in Europe.

EuReCa ONE very clearly demonstrates marked differences in the processes for data collection and reported outcomes following OHCA all over Europe. Using these data and analyses, different countries, regions, systems, and concepts can benchmark themselves and may learn from each other to further improve survival following one of our major health care events.

Out-of-hospital resuscitation attempts in Estonia from 1999 to 2013

(Utstein template)



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Out-of-hospital resuscitation in Estonia: a bystander-witnessed sudden cardiac arrest (1999-2013)

	Resuscitation attempted	Survival to hospital discharge (CPC1,2)
All country	3335	341 (10.2%)
Tallinn (urban area)	1322	128 (9.7%)
Tartu (urban area)	546	121 (22.2%)
Other regions (urban suburban and rural areas)	1467	92 (6.3%)

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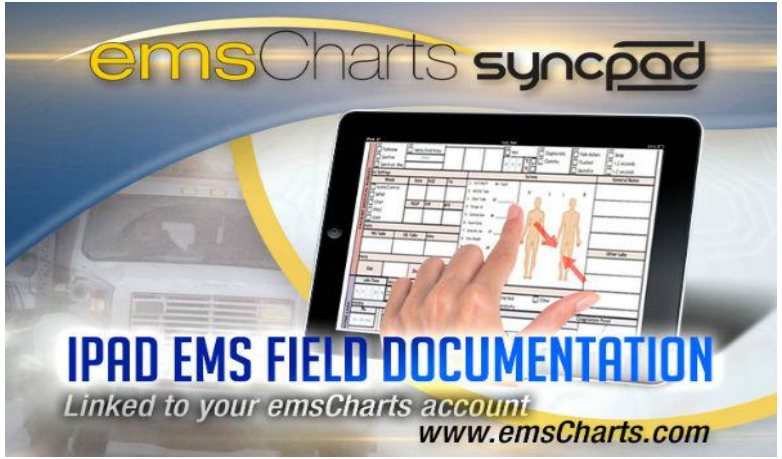
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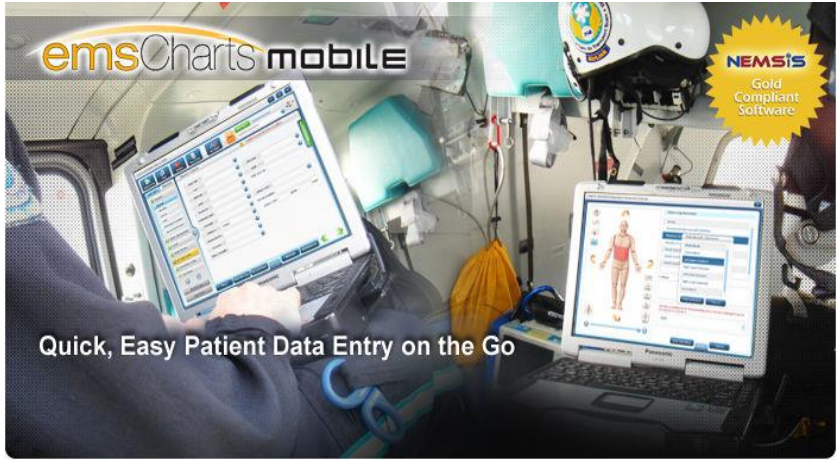
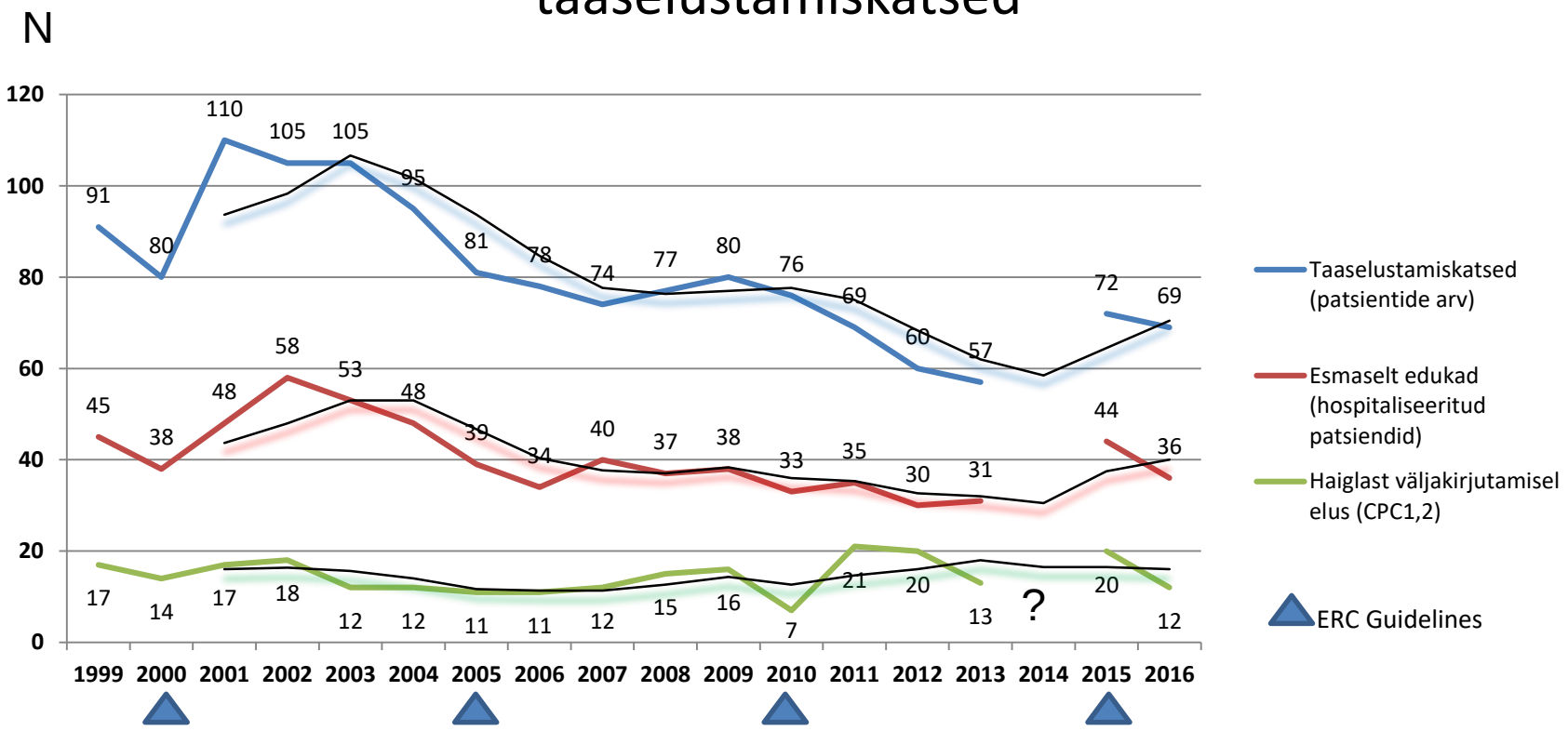
IPAD EMS FIELD DOCUMENTATION
Linked to your emsCharts account
www.emsCharts.com


emsCharts mobile
NEMSIS
Gold Compliant Software
Quick, Easy Patient Data Entry on the Go


Patient Rx LIST
HEART ATTACK
PRESCRIPTION HISTORY
MEDICAL RECORDS
Emergency Room Record
STROKE
?
Andmeanalüüs
Streeter

Tartu kiirabibrigaadide poolt rakendatud haiglavälised taaselustamiskatsed



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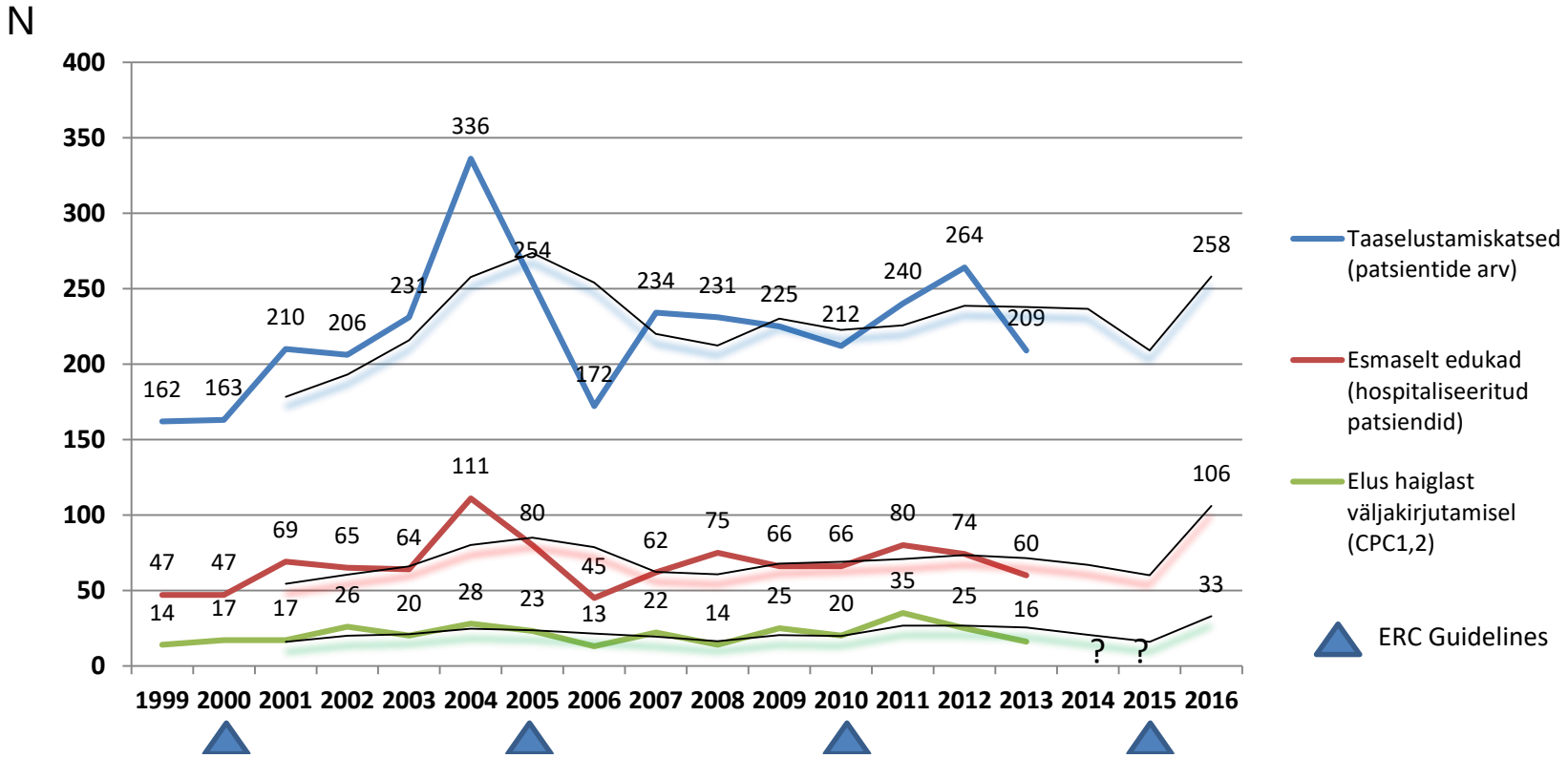
Tallinna kiirabibrigaadide poolt rakendatud haiglavälised taaselustamiskatsed



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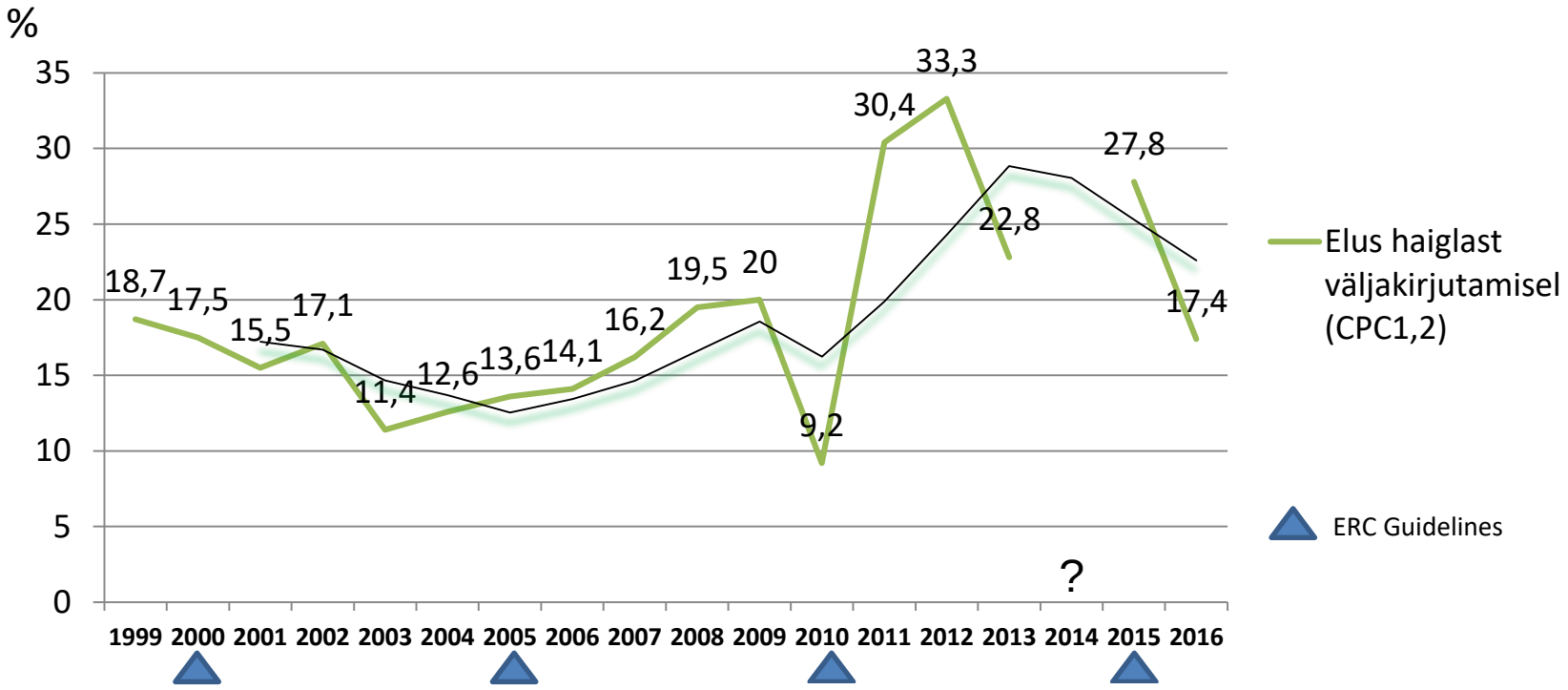
Tartu kiirabibrigaadide poolt rakendatud haiglavälised taaselustamiskatsed ja elulemus



A.Sipria

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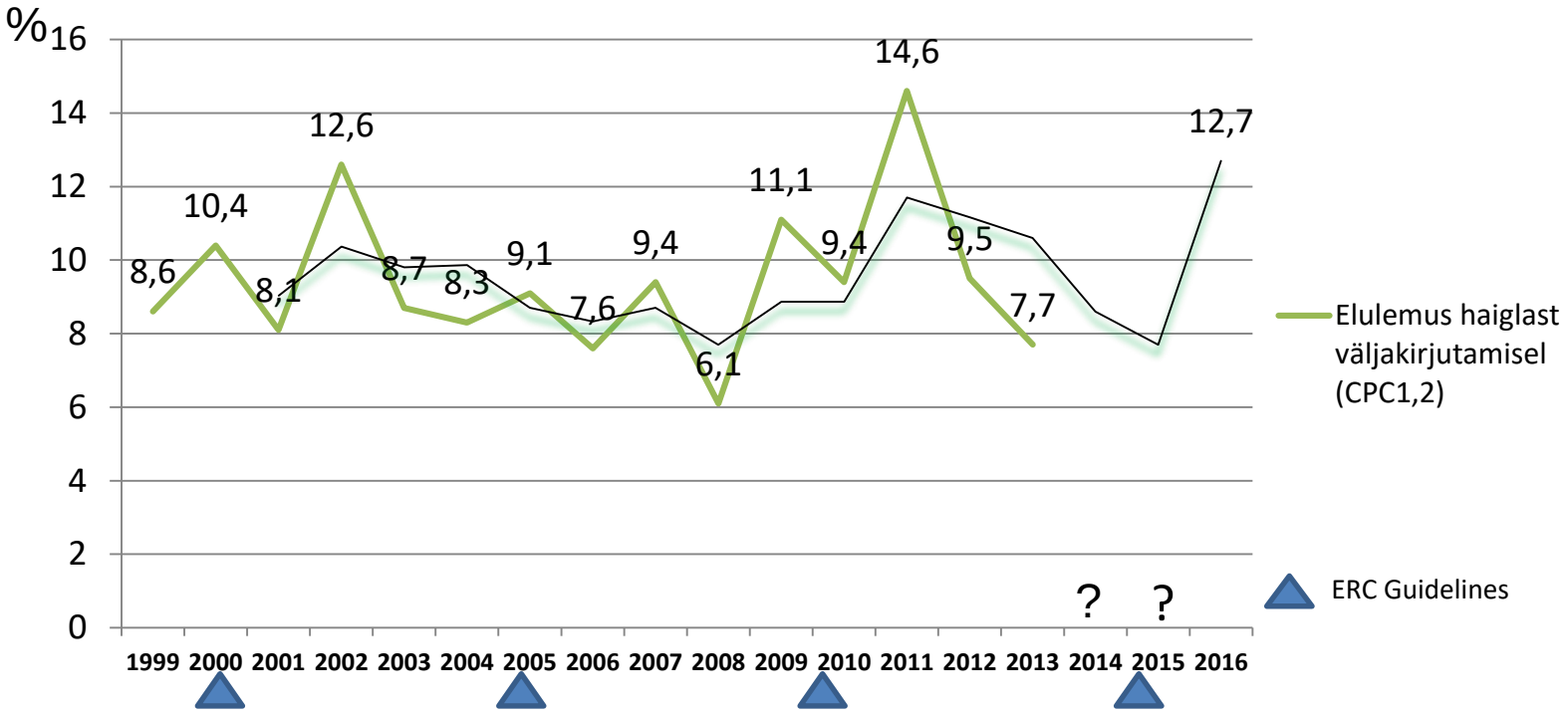

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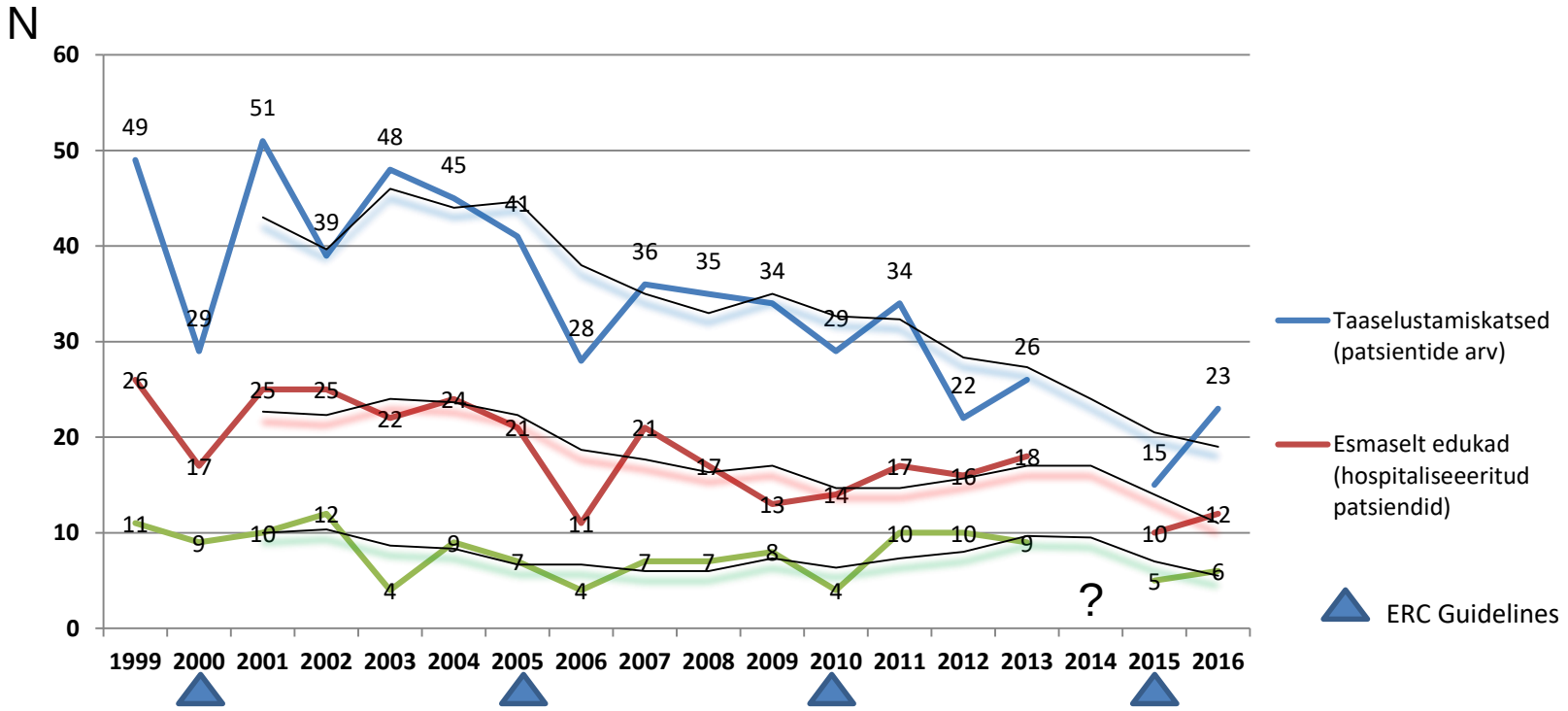
Tartu kiirabibrigaadide poolt teostatud haiglavälised taaselustamiskatsed (tunnistajatega kardiaalne äkksurm)



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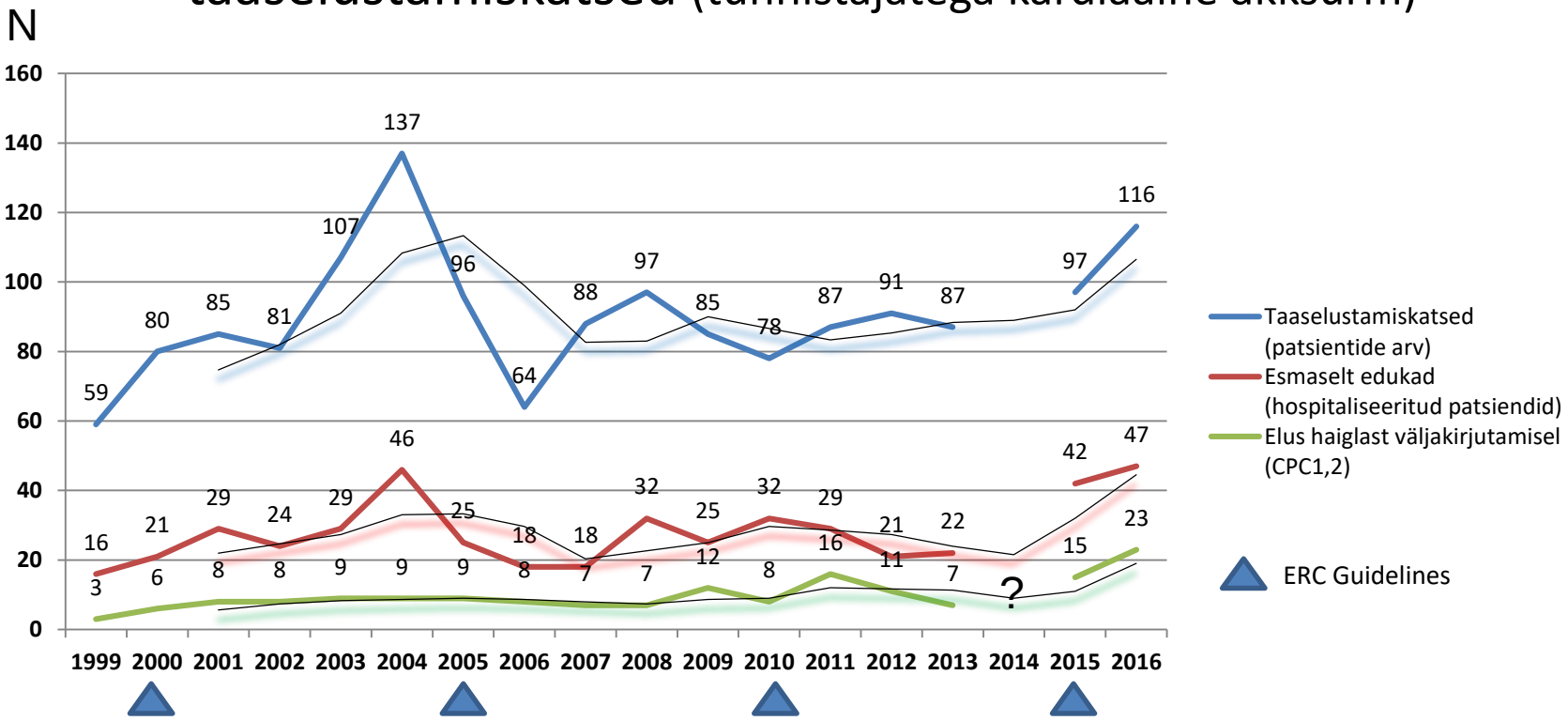

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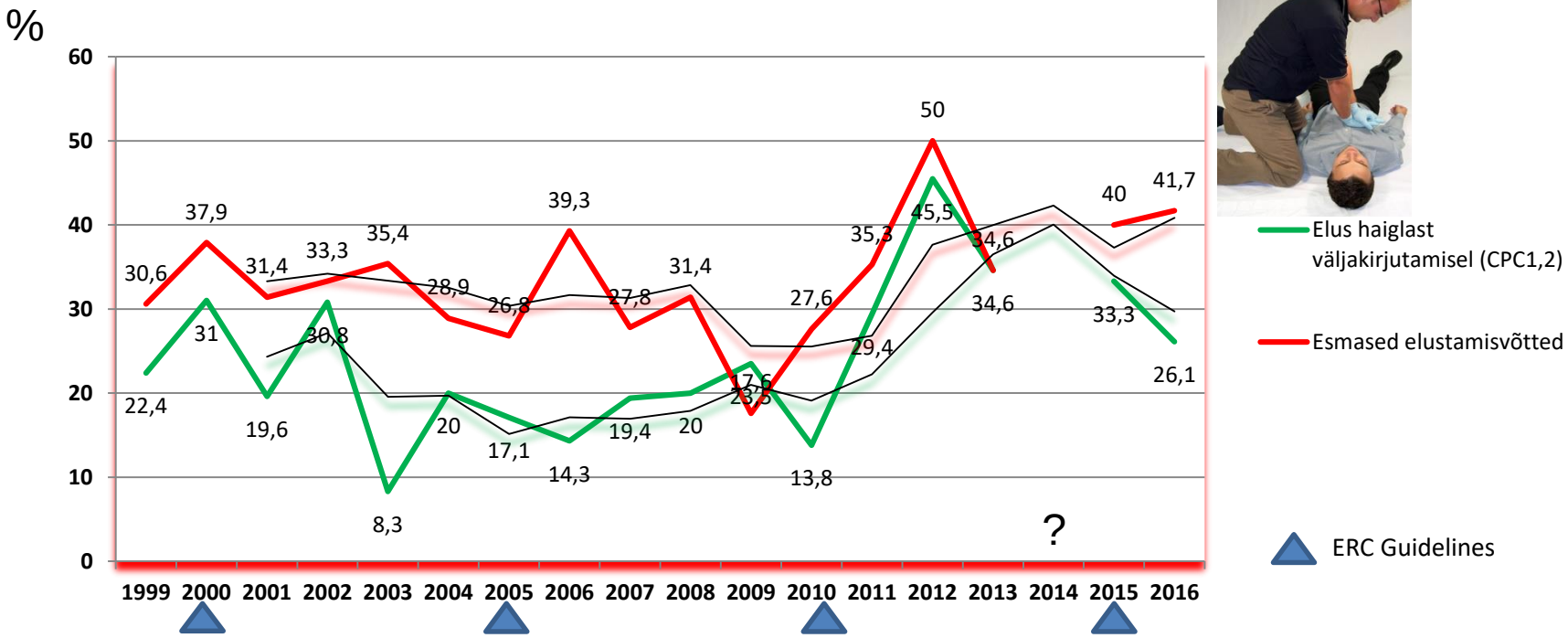
Tartu kiirabibrigaadide poolt teostatud haiglavälised taaselustamiskatsed (tunnistajatega kardiaalne äkksurm, elulemus ja esmased elustamisvõtted)



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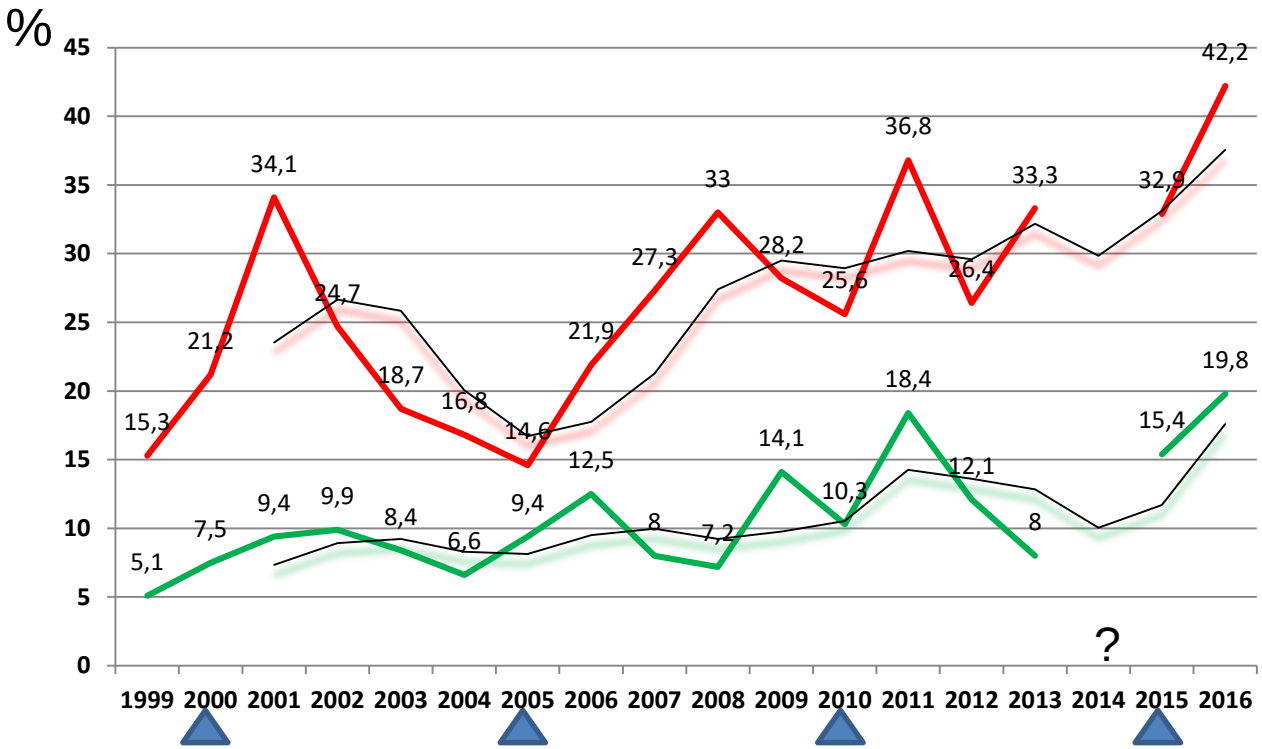

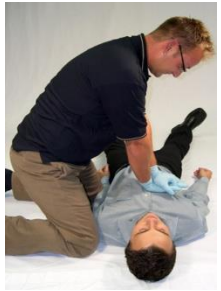

Esmased elustamisvõtted

Elus haiglast väljakirjutamisel (CPC1,2)

ERC Guidelines

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Characteristics of patients with bystander-witnessed OHCA admitted to hospital alive (%, if not otherwise stated) during study period

	1999-2003	2004-2008	2009-2013
	%	%	%
Admitted to hospital (n)	328	317	320
Median age (IQR)	65 (56-71)	66 (54-74)	66 (57-73)
Male	68.9	70.7	73.1
Bystander CPR (total)	28.1	27.8	34.7
Compression-Only CPR	12.2	16.7	24.4
First rhythm VF/VT	62.8	58.7	57.8

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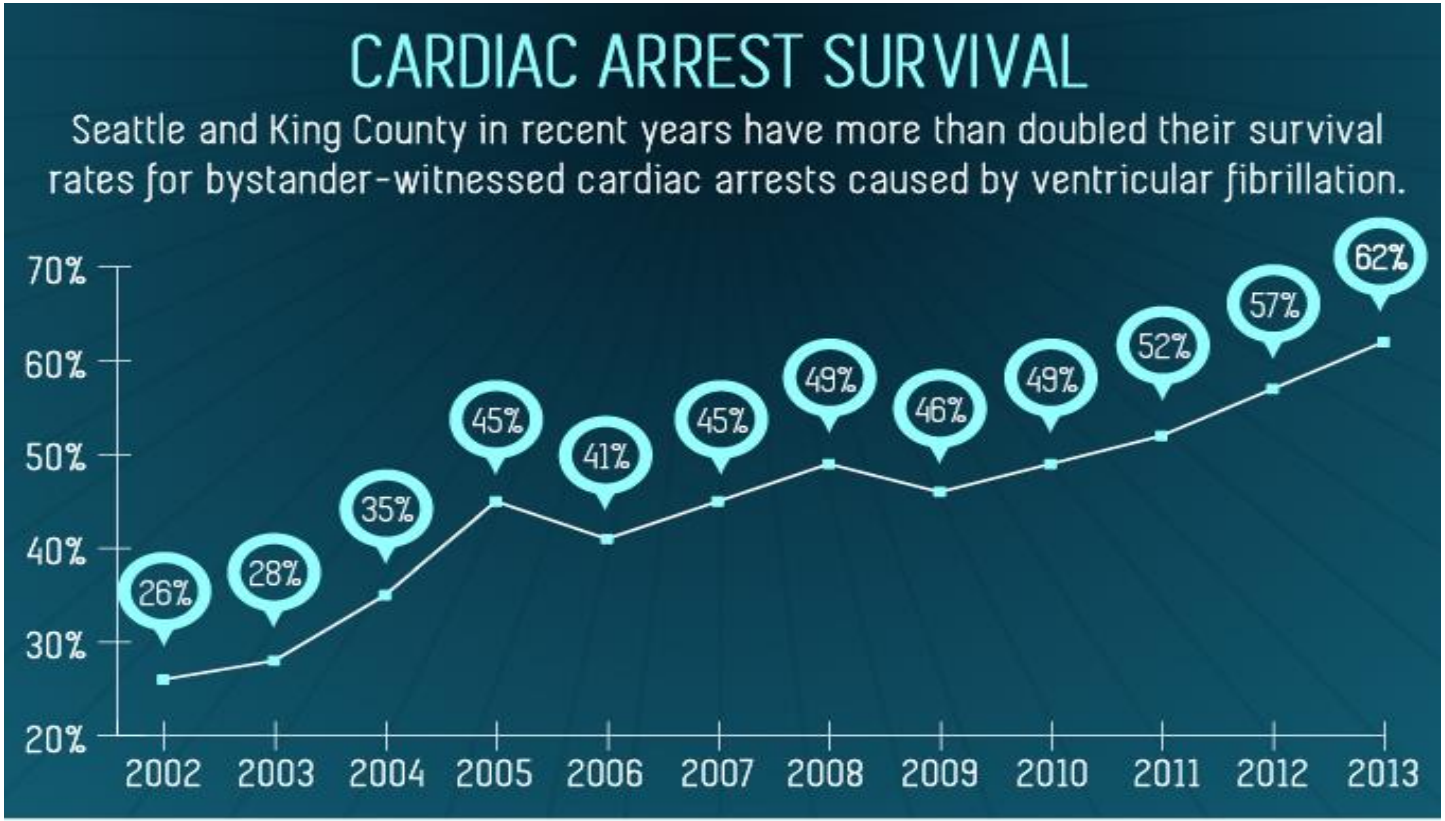
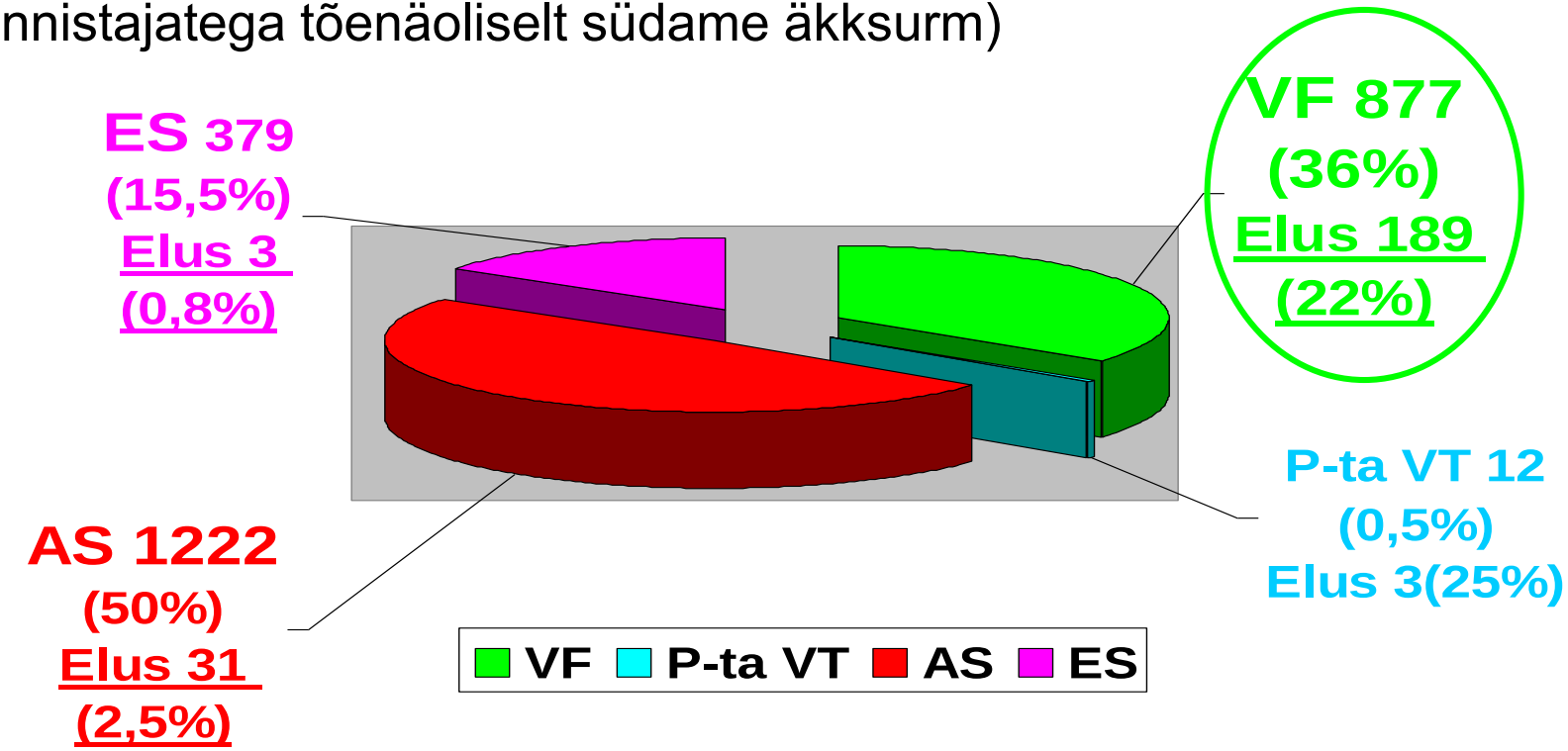


Source: King County

Haiglavälised taaselustamiskatsed Eestis aastatel 1999-2009. Elulemus ja esmane vereringeseiskuse vorm

(tunnistajatega tõenäoliselt südame äkksurm)

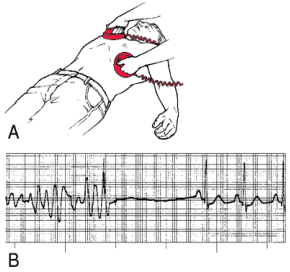


Tunnistajatega südame äkksurm ja elulemus esmase VF korral

Tartus (2015-2016)

VF juhtude arv 18 (47,4%)

Elulemus haiglast väljakirjutamisel (CPC1,2) 10 (55,6%)



Tallinnas (2015-2016)

VF juhtude arv 55 (24,3%)

Elulemus haiglast väljakirjutamisel (CPC1,2) 28 (50,9%)

Resuscitation 96 (2015) 23–29

Contents lists available at ScienceDirect

Resuscitation

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

ELSEVIER

EUROPEAN RESUSCITATION COUNCIL

Clinical paper

Causes for the declining proportion of ventricular fibrillation in out-of-hospital cardiac arrest☆

CrossMark

Michiel Hulleman*, Jolande A. Zijlstra, Stefanie G. Beesems, Marieke T. Blom, Daniel A. van Hoeijen, Reinier A. Waalewijn, Hanno L. Tan, Jan G.P. Tijssen, Rudolph W. Koster

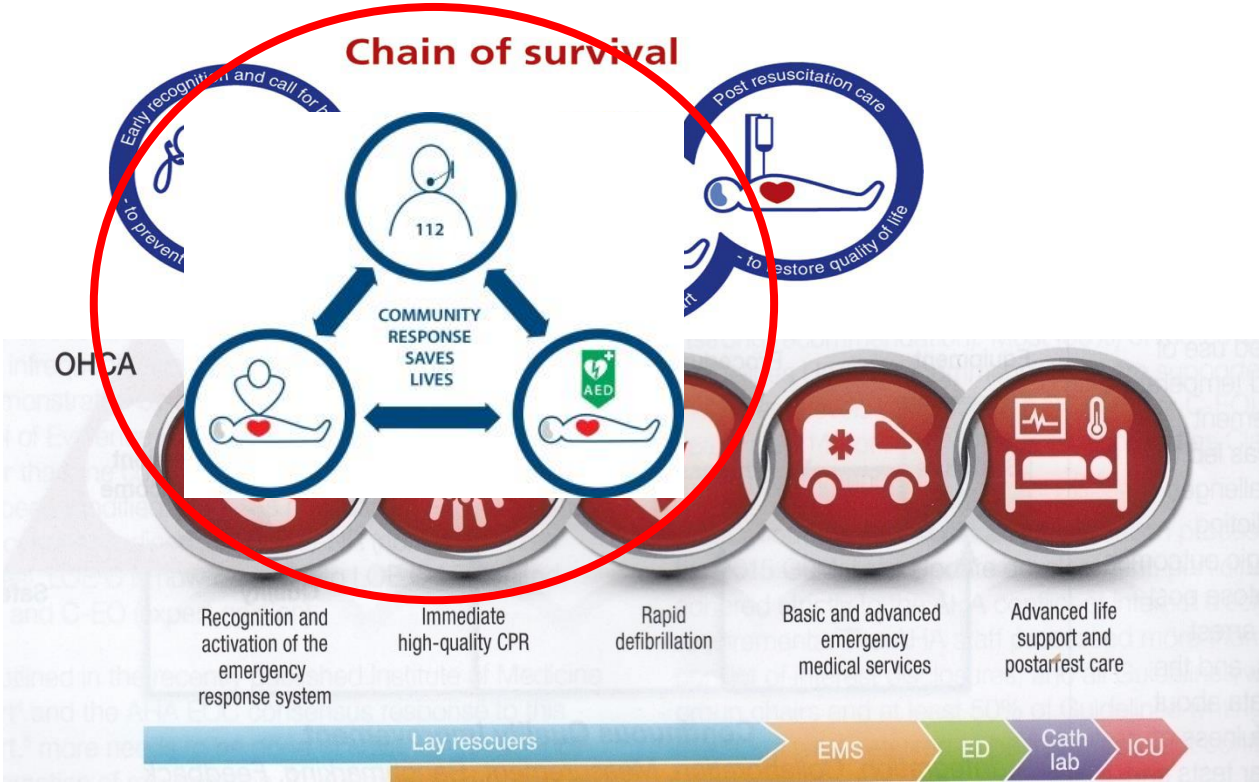
Department of Cardiology, Academic Medical Center, University of Amsterdam, Meibergdreef 9, 1105 AZ Amsterdam, The Netherlands

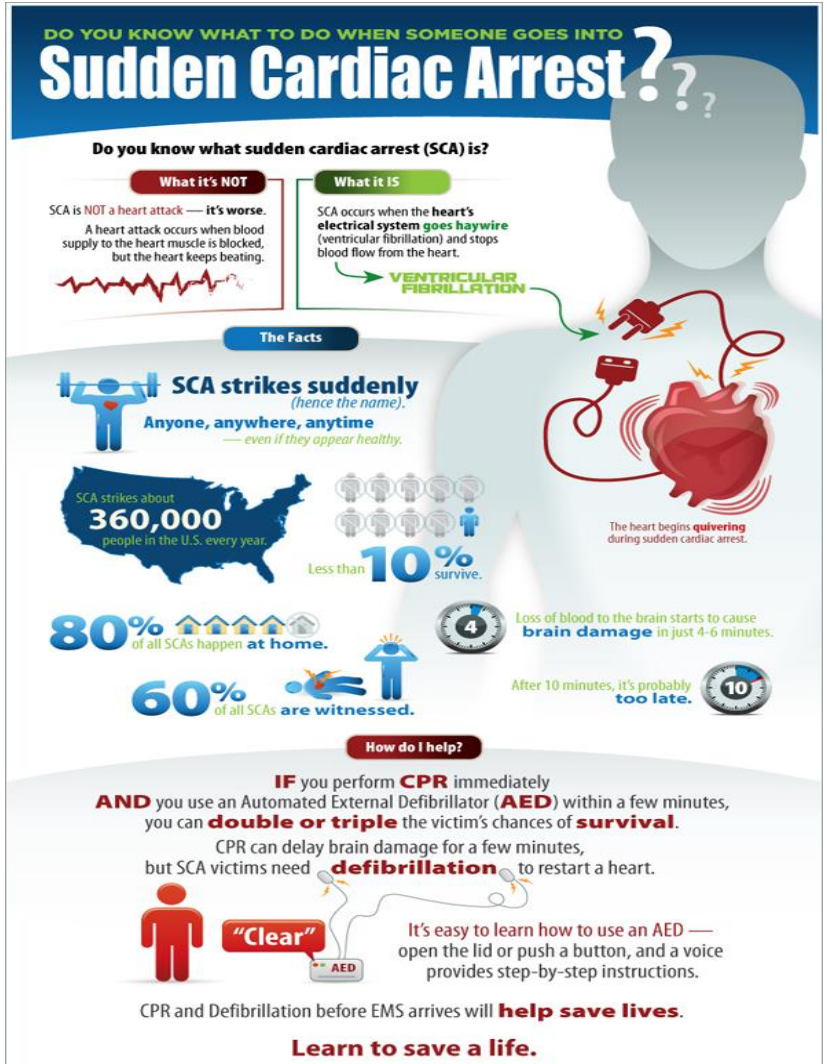
- Esmase VF esinemissagedus haiglavälise südame äkksurma korral:
- Hollandis (1995-2012) 62% → 47%,

  selle juures BCPR 54% → 73%
- Ameerika Ühendriikides 24%
- Taanis 28%
- Rootsis 18% (SCAR andmetel 1992-2011 35% → 25%,
  selle juures BCPR 55% → 53%)

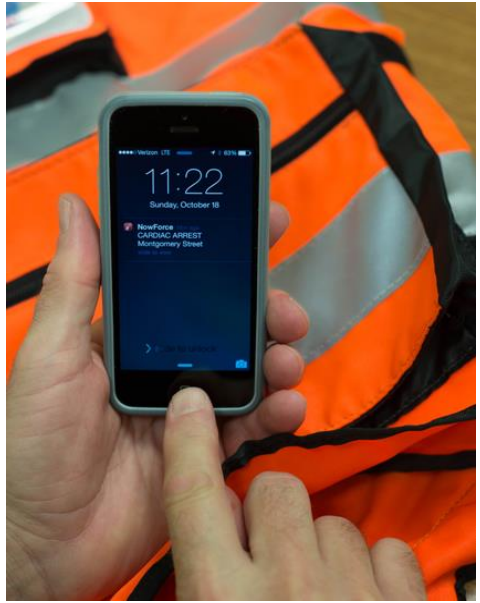
ERC
2010-2015

AHA 2015





Smartphone Use in Out-of-Hospital Cardiac Arrest



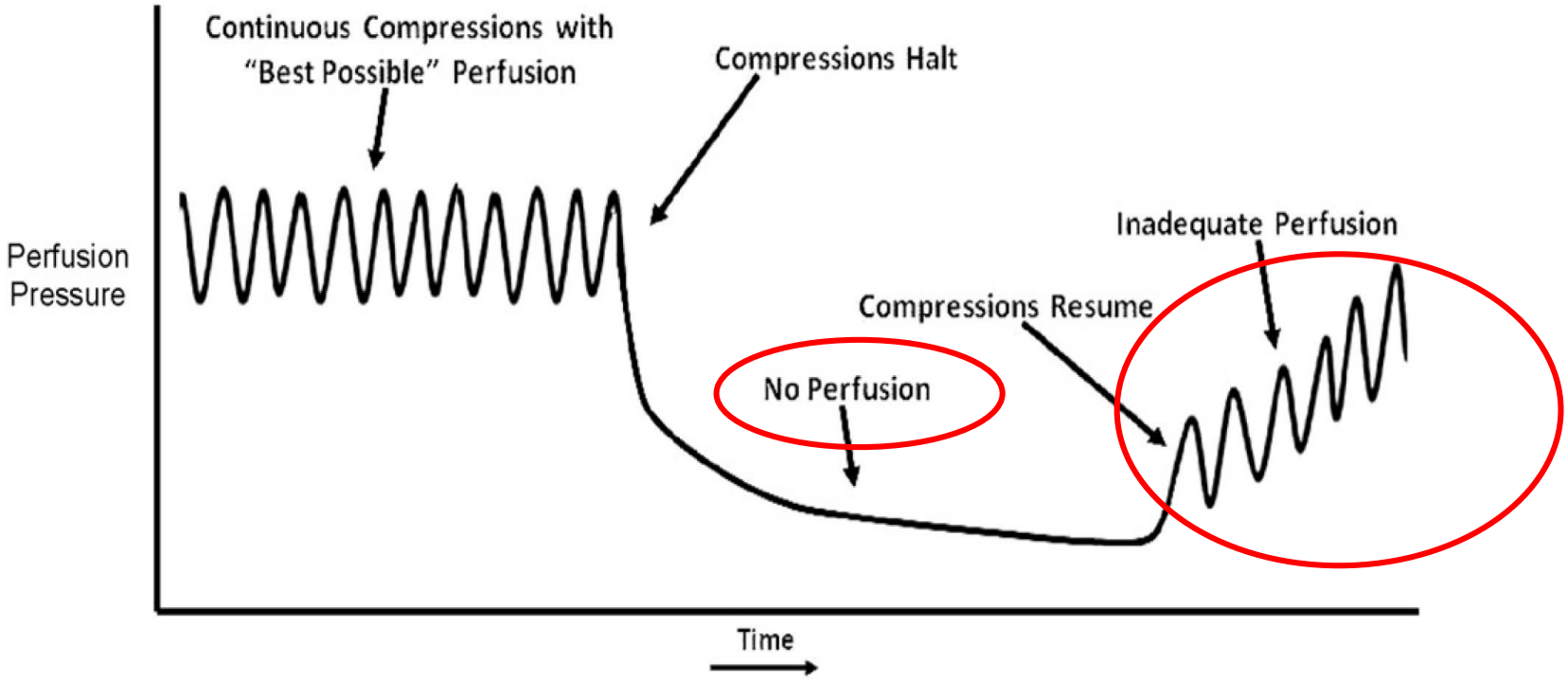
Kannatanu esmase käsitluse vead

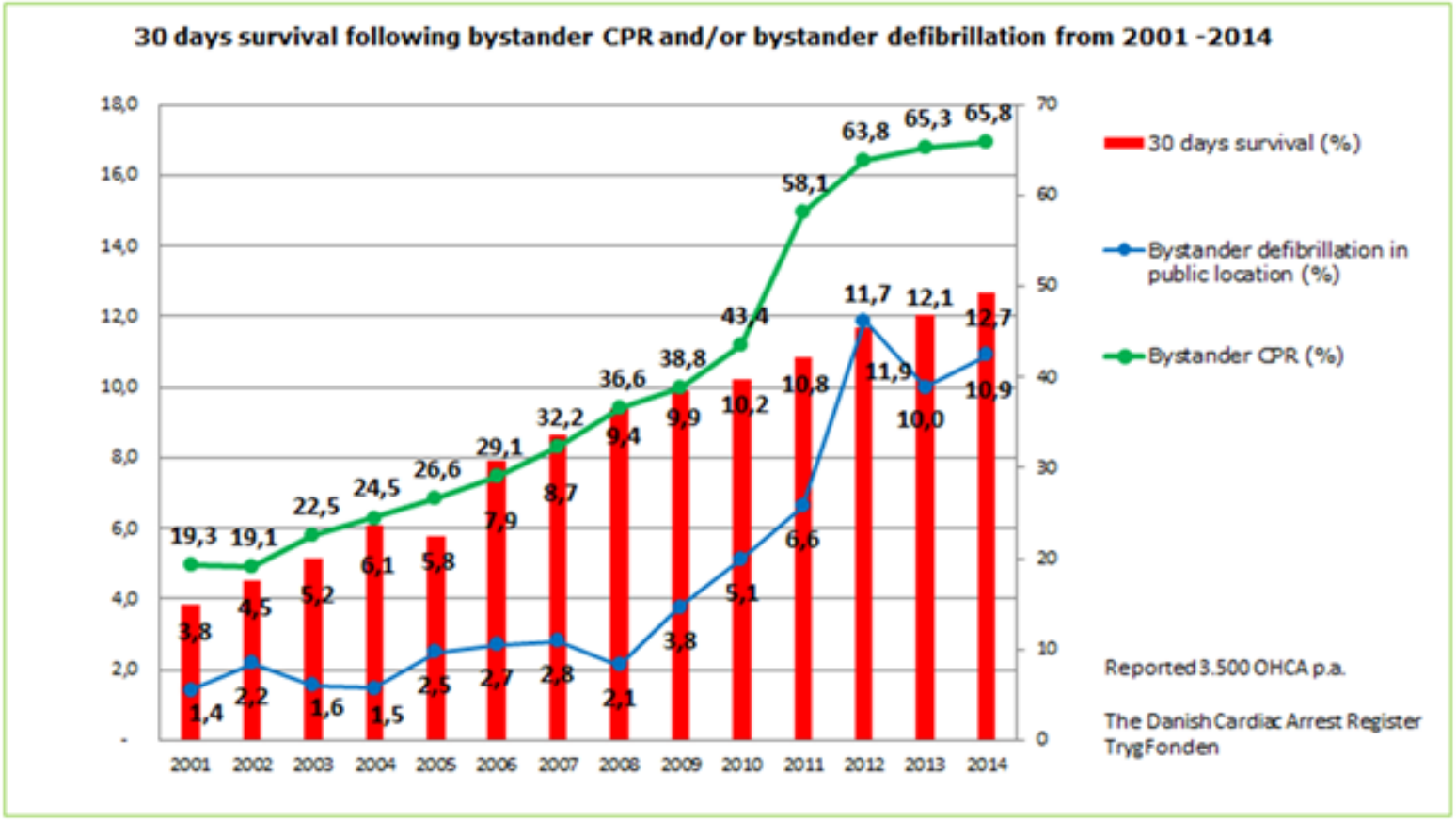
- Kannatanu üldseisundi hindamise vead (esmase vaatluse vale järjestus ja kestvus, agonaalse hingamise vale interpreteerimine, vereringe tunnuste ebaadekvaatne hindamine, puudulik informatsioon abikutse esitamisel)

- Kutsetöötluse vead häirekeskuses (puudulik kutsetöötlus, ebaefektiivne nõustamine)

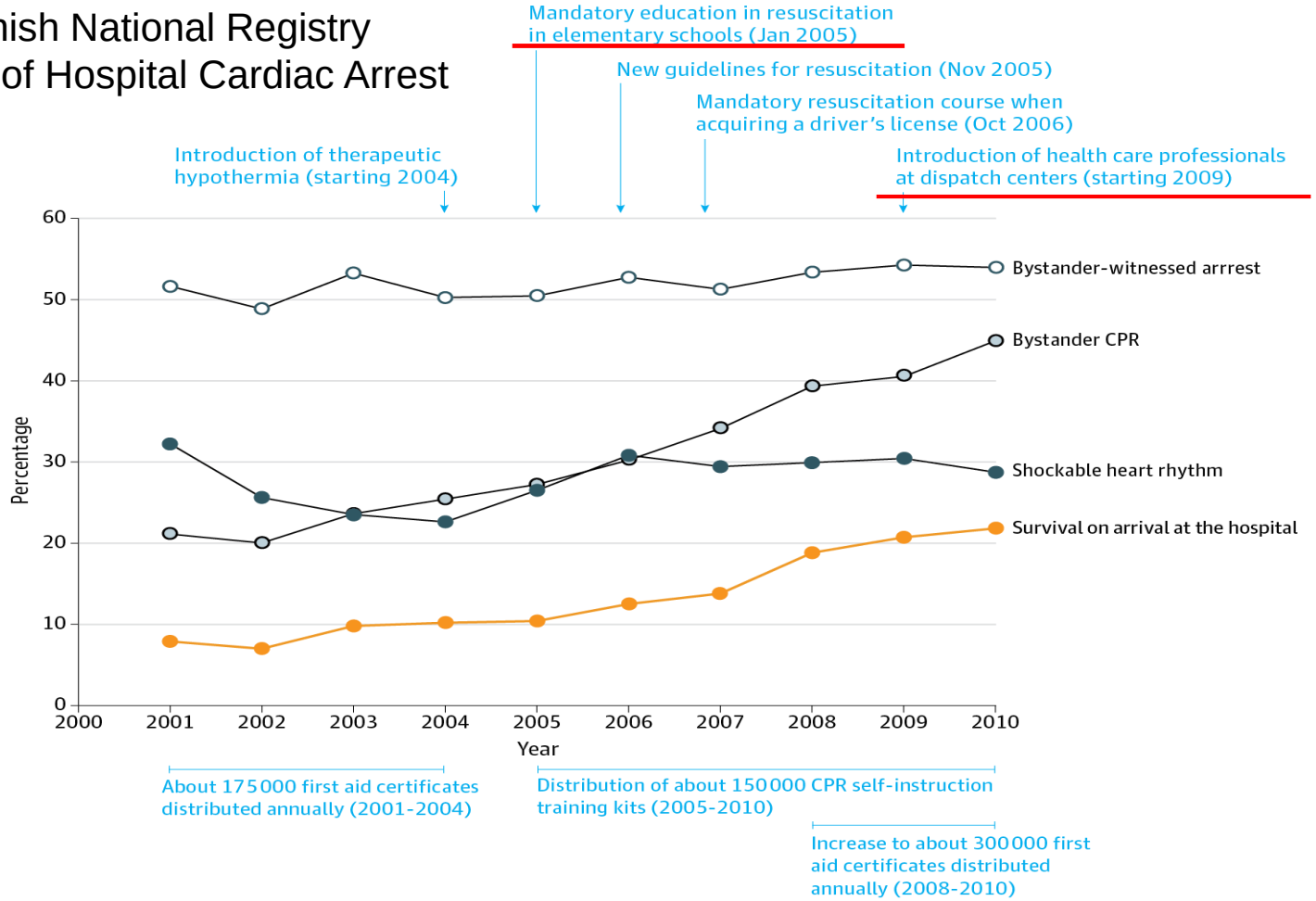
- Vead rindkere kompressioonide teostamisel (pehme alus, hiline alustamine, põhjuseta katkestamine, puudulik SM tehnika)

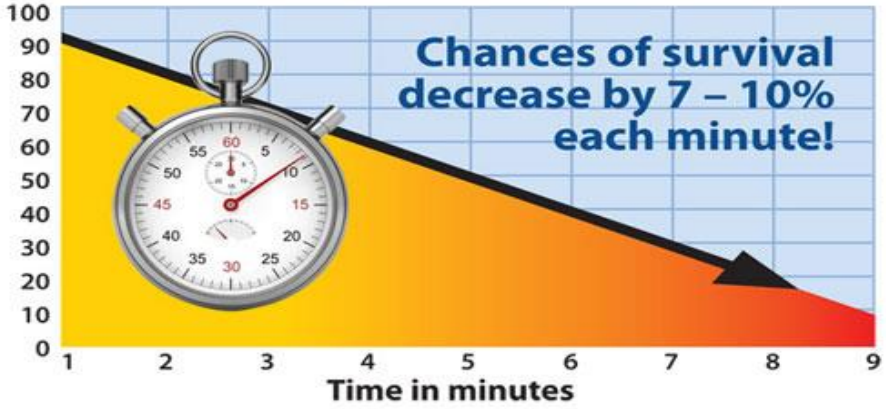
Chest Compressions During Cardiac Arrest
Magnitude of Perfusion Resulting from Chest Compressions

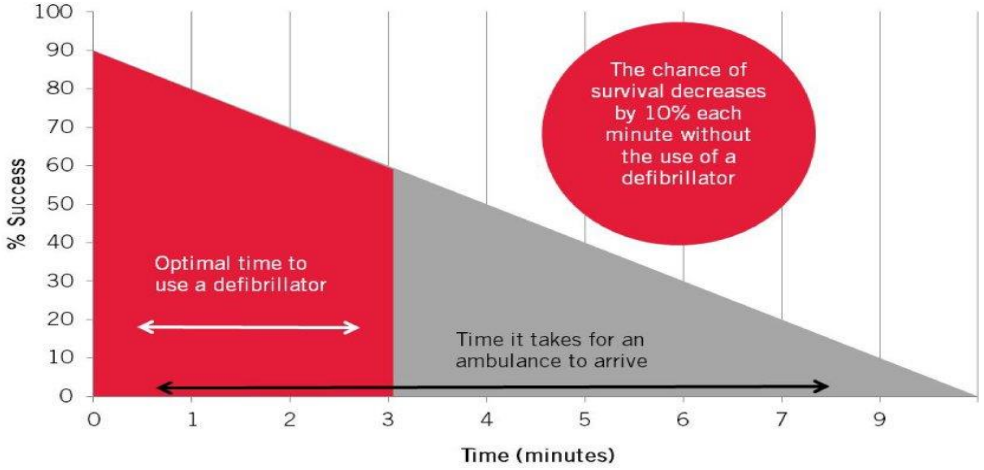



30 days survival following bystander CPR and/or bystander defibrillation from 2001 -2014
18,0
16,0
14,0
12,0
10,0
8,0
6,0
4,0
2,0
-
70
60
50
40
30
20
10
0
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
19,3
19,1
22,5
24,5
26,6
29,1
32,2
36,6
38,8
43,4
58,1
63,8
65,3
65,8
3,8
4,5
5,2
6,1
5,8
7,9
8,7
9,4
9,9
10,2
10,8
11,9
12,1
12,7
1,4
2,2
1,6
1,5
2,5
2,7
2,8
2,1
3,8
5,1
6,6
11,7
10,0
10,9
30 days survival (%)
Bystander defibrillation in public location (%)
Bystander CPR (%)
Reported 3.500 OHCA p.a.
The Danish Cardiac Arrest Register
TrygFonden

The Danish National Registry for Out of Hospital Cardiac Arrest





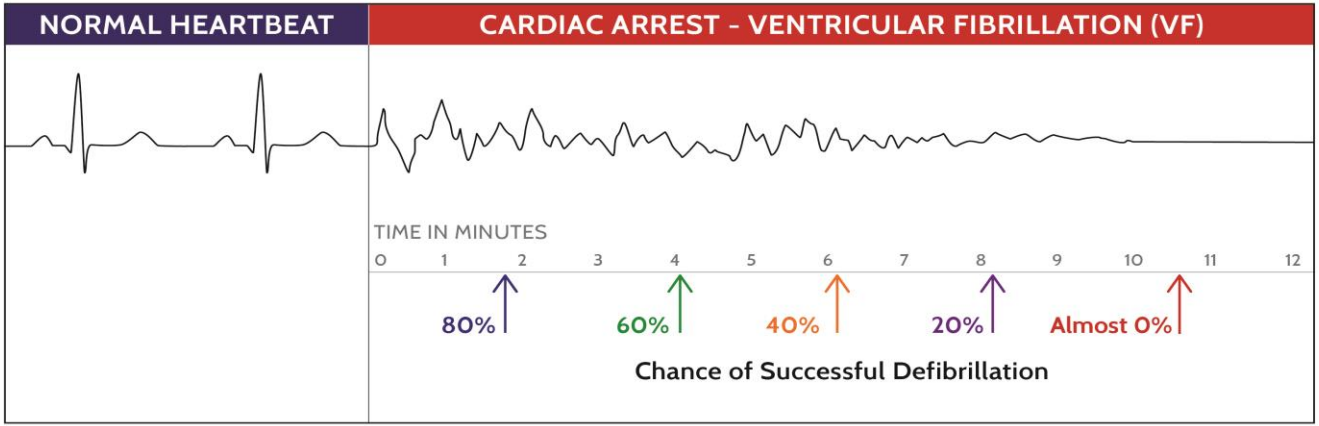


SAVING LIVES THROUGH
St John FirstAid

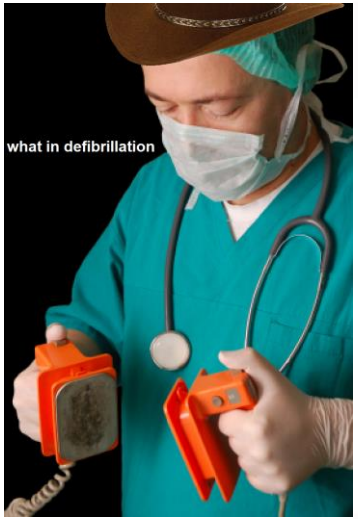
Early defibrillation is critical for survival.

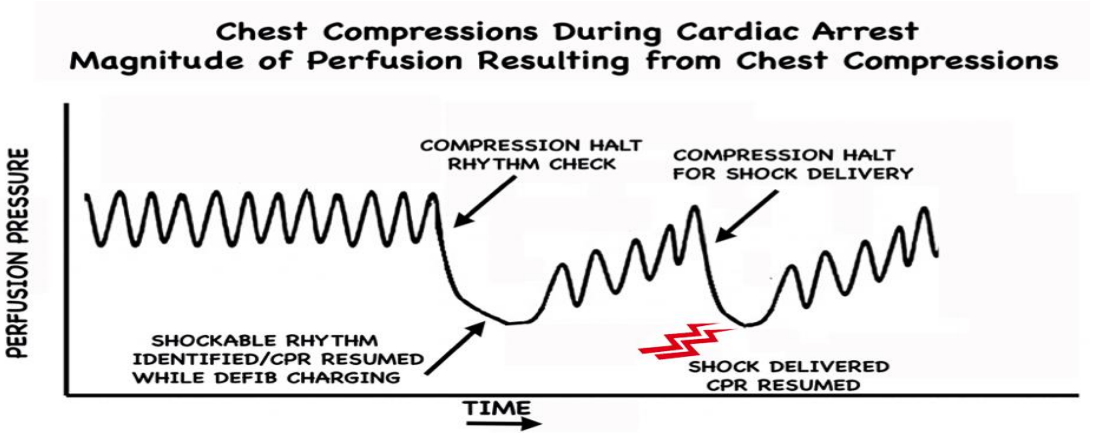
The chance of restoring a normal heartbeat decreases rapidly over time.

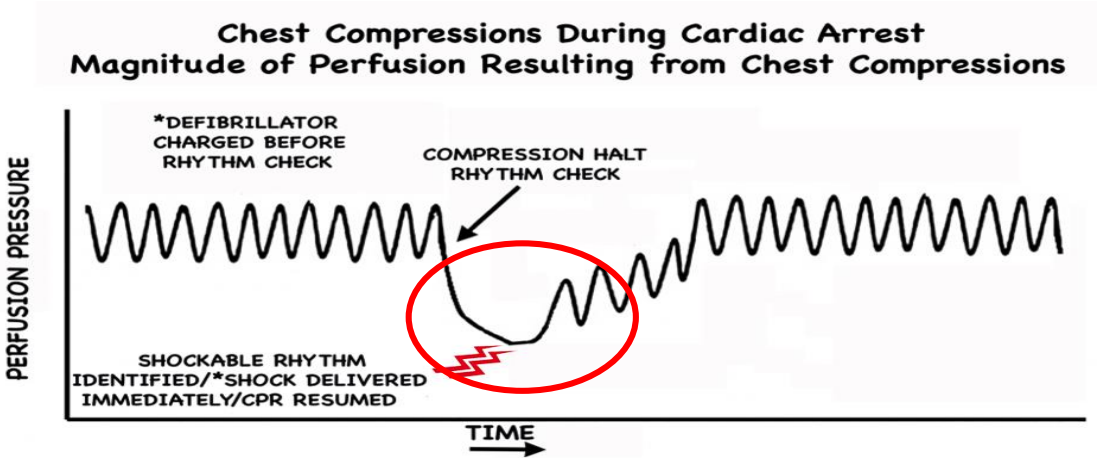
Defib First



Following a cardiac arrest, every minute of delay in applying a defibrillator reduces the chance of survival by 10%


what in defibrillation


Chest Compressions During Cardiac Arrest
Magnitude of Perfusion Resulting from Chest Compressions
PERFUSION PRESSURE
COMPRESSION HALT
RHYTHM CHECK
COMPRESSION HALT
FOR SHOCK DELIVERY
SHOCKABLE RHYTHM
IDENTIFIED/CPR RESUMED
WHILE DEFIB CHARGING
SHOCK DELIVERED
CPR RESUMED
TIME


Chest Compressions During Cardiac Arrest
Magnitude of Perfusion Resulting from Chest Compressions
PERFUSION PRESSURE
*DEFIBRILLATOR
CHARGED BEFORE
RHYTHM CHECK
COMPRESSION HALT
RHYTHM CHECK
SHOCKABLE RHYTHM
IDENTIFIED/*SHOCK DELIVERED
IMMEDIATELY/CPR RESUMED
TIME

Kuhu hospitaliseerida taaselustatud patsienti?

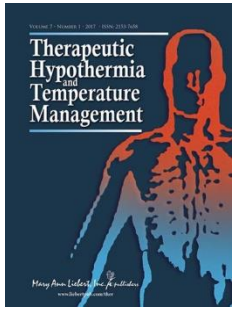
Transport to Specialized Cardiac Arrest Centers

The 2015 ILCOR systematic review addressed whether transport of OHCA patients by EMS directly to a specialist cardiac arrest center improves outcomes. A cardiac resuscitation center is a hospital that provides evidence-based practice in resuscitation and post–cardiac arrest care, including 24-hour, 7-day PCI capability; targeted temperature management, cardiorespiratory and systems support with an adequate annual volume of cases; and commitment to ongoing performance improvement that includes measurement, benchmarking, and both feedback and process change.

2015 American Heart Association Guidelines Update for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care

Taaselustamisjärgne kehatüve temperatuuri kontroll

(ERC Guidelines 2015)



- Säilitada kehatüve temperatuuri 32 -36℃ vahel

- Kehatüve temperatuuri kontroll täiskasvanutel on näidustatud spontaanse vereringe taastumisel defibrilleeritava, samuti mitte- defibrilleeritava rütmi korral
- Kehatüve temperatuuri kontroll peab kestma vähemalt 24 tundi, madalama temperatuuri valikul üles soojendamine kiirusega 0,25-0,5℃/ t

- Haiglaeelne jahutamine külma lahuse infusiooniga suures koguses ei ole soovitatud (on põhjendatud hea monitooringu korral)
- Haiglaeelne jahutamine taaselustamise ajal ei ole küllaldaselt uuritud
- Ravida hüpotermia kõrvaltoimed (värinad, SRH, hüperglükeemia jm)

Published Ahead of Print on May 10, 2017 as 10.1212/WNL.0000000000003966

SPECIAL ARTICLE

AMERICAN ACADEMY OF NEUROLOGY

Practice guideline summary: Reducing brain injury following cardiopulmonary resuscitation

Report of the Guideline Development, Dissemination, and Implementation Subcommittee of the American Academy of Neurology

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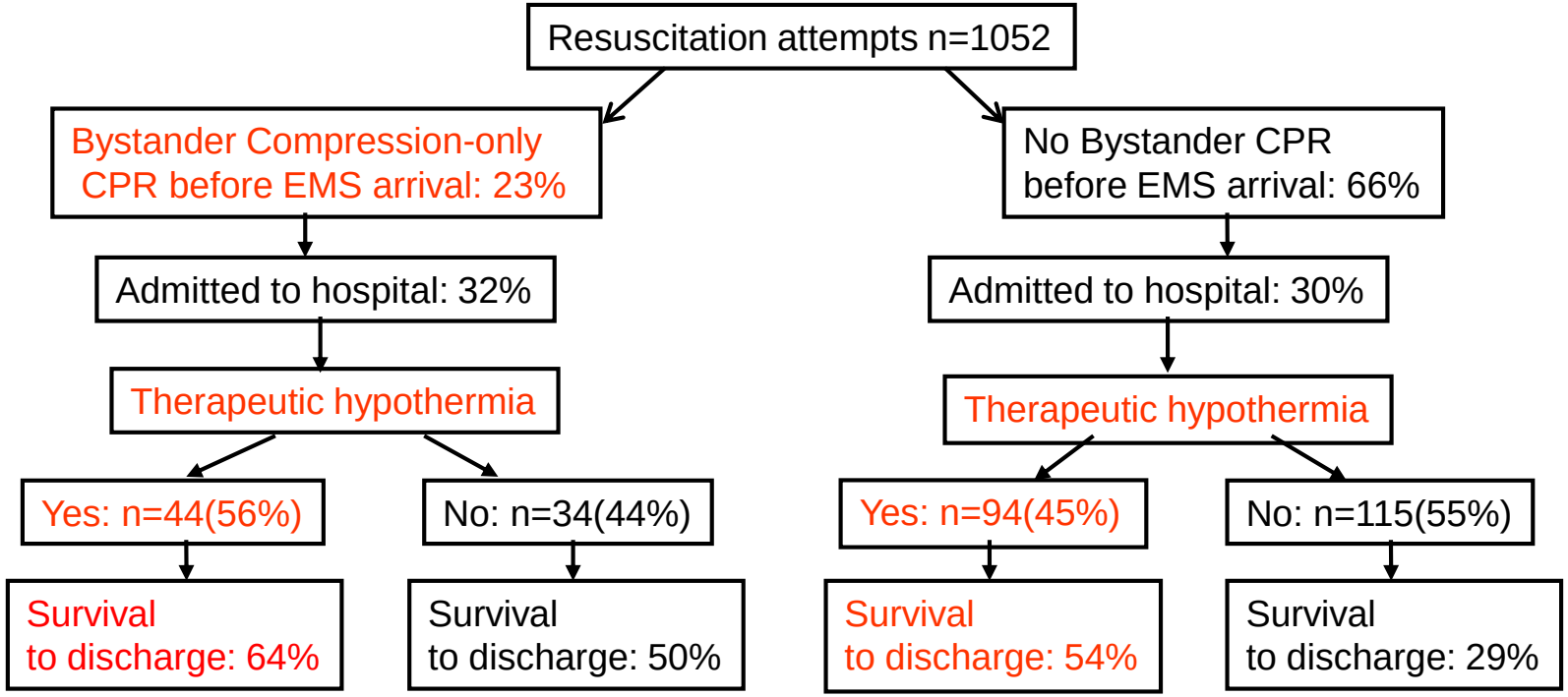
ABSTRACT

Objective: To assess the evidence and make evidence-based recommendations for acute interventions to reduce brain injury in adult patients who are comatose after successful cardiopulmonary resuscitation.

Methods: Published literature from 1966 to August 29, 2016, was reviewed with evidence-based classification of relevant articles.

Results and recommendations: For patients who are comatose in whom the initial cardiac rhythm is either pulseless ventricular tachycardia (VT) or ventricular fibrillation (VF) after out-of-hospital cardiac arrest (OHCA), therapeutic hypothermia (TH; 32–34°C for 24 hours) is highly likely to be effective in improving functional neurologic outcome and survival compared with non-TH and should be offered (Level A). For patients who are comatose in whom the initial cardiac rhythm is either VT/VF or asystole/pulseless electrical activity (PEA) after OHCA, targeted temperature management (36°C for 24 hours, followed by 8 hours of rewarming to 37°C, and temperature maintenance below 37.5°C until 72 hours) is likely as effective as TH and is an acceptable alternative (Level B). For patients who are comatose with an initial rhythm of PEA/asystole, TH possibly improves survival and functional neurologic outcome at discharge vs standard care and may be offered (Level C). Prehospital cooling as an adjunct to TH is highly likely to be ineffective in further improving neurologic outcome and survival and should not be offered (Level A). Other pharmacologic and nonpharmacologic strategies (applied with or without concomitant TH) are also reviewed. ***Neurology*® 2017;88:1–9**

Bystander-witnessed OHCA and survival in study period III (2009-2013)



A.Sipria

Tänan tähelepanu eest !