





HAPPY VALENTINES DAY



RACING To SAVE Lives in NC “NC Cardiac Arrest Registry”

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2/14/2013



Every Second Counts. Every Action Matters.

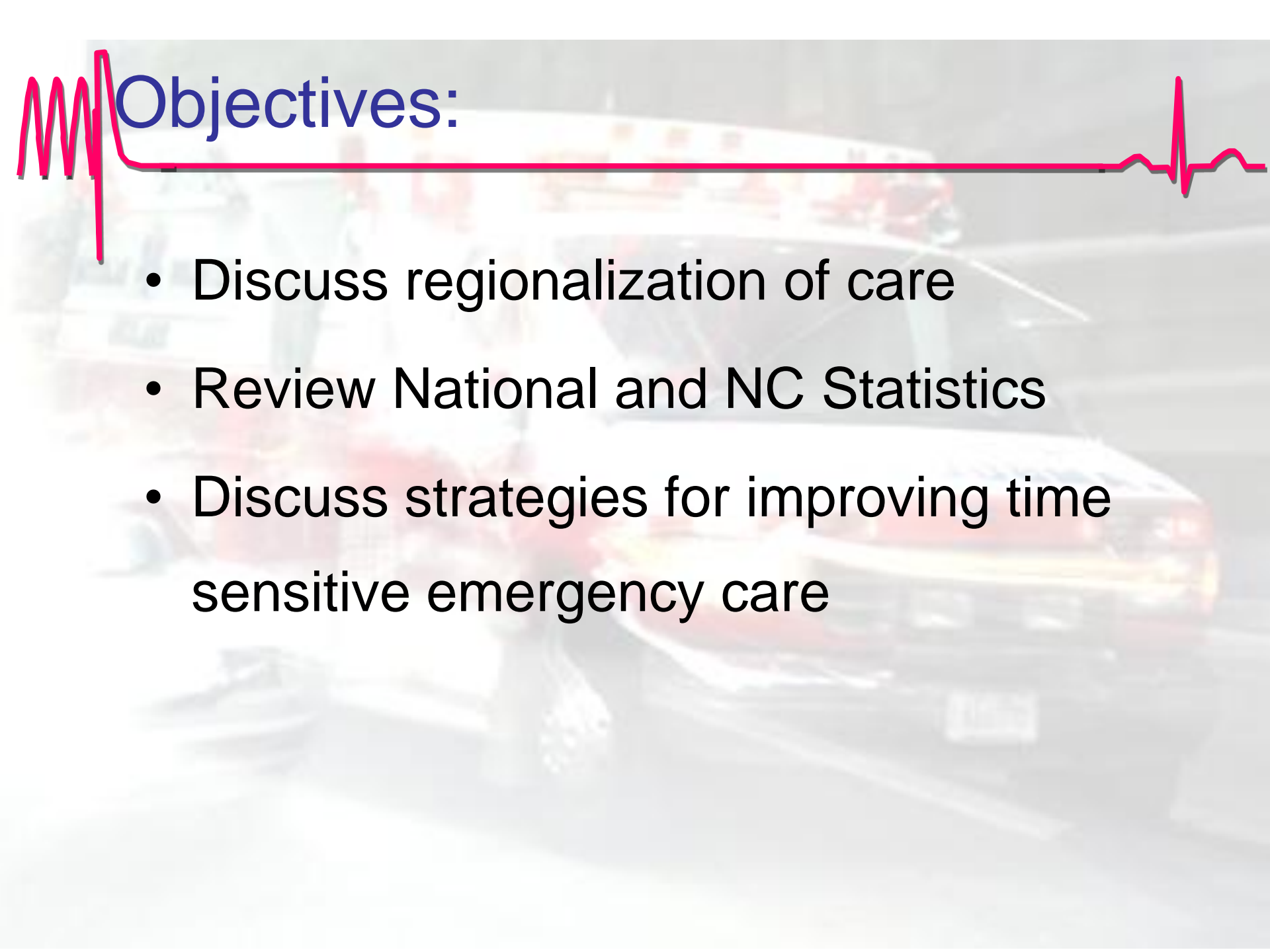


Cardiac Arrest Resuscitation System



Conflicts of Interest:

- No Conflict
- Our project is funded by the Medtronic Foundation
- The Medicines Company



Objectives:

- Discuss regionalization of care
- Review National and NC Statistics
- Discuss strategies for improving time sensitive emergency care

If we can't
save them,



RACE CARS

History STEMI Systems in NC:

“RACE moved beyond the cath lab and PCI hospitals to focus on EDs, EMS, hospital networks, and associated communication and transport systems.” Heart.org

“AHA’s Mission: Lifeline – A Call to Arms for Emergency Medicine” ACEP News Jan 2009

**RACE Pilot
1st STEMI
System**



2003

**RACE
65 hospitals/
Multiple EMS Agencies**

2005

**RACE - ER
Entire State**

2008

**RACE CARS Goal:
Improve OOHCA
survival by 50% by 2015**

**Mission Lifeline
RACECARS**

2010

2011 - 2015

“Racing Against the Clock: A North Carolina-based project becomes a model for discovery-to-balloon”

Richard R. Rogoski 2008

“RACE: A Herculean attempt to improve STEMI care”

Nov 12, 2007 Lisa Nainggolan



“North Carolina’s RACE program cuts door-in door-out times for STEMI patients”

Jun 28, 2011 Reed Miller



RACE *Cardiac Arrest Resuscitation System*

2) Establish REGIONAL *CARDIAC ARREST* CENTERS

1) Develop leadership,
funding, data structure

4) Improve system

*Measurement
& Feedback*

3c) Community by community
cardiac arrest training/AED
placement

3a) HOSPITAL by hospital
establishment of *cardiac arrest* plan
(review, consensus, training)

3b) EMS by EMS
establishment of *cardiac arrest* plan
(review, consensus, training)



Definition of Regionalization:

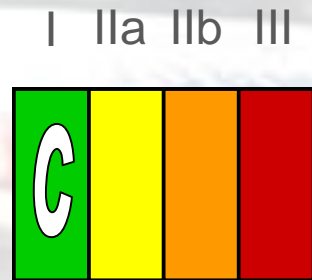
- is a systematic method of bringing patients
 - from a defined geographic region
 - in need of specialized, specific emergent medical or surgical care
 - to designated facilities with the capabilities and resources immediately available to provide such treatment.

Systems of Care

Each community should develop a STEMI system of care following the standards developed for Mission Lifeline (AHA) including:

- Ongoing multidisciplinary team meetings with EMS, non-PCI, and PCI centers
- A process for pre-hospital identification and activation
- Destination protocols for PCI centers
- Transfer protocols for non-PCI centers for appropriate patients

NEW
Recommendation



ACC/AHA 2009 Joint STEMI/PCI Guidelines
Focused Update JACC 2009

AHA/ASA Recommendations for EMS Systems of Care for Stroke

Exec Summary

1. Rapid dispatch.
2. Use algorithms/protocols.
3. Involve ER physicians, EMS and acute stroke team.
4. Transport to acute-stroke capable hospital.
5. Establish assessments for thrombolysis eligibility.

What would TRAUMA do?

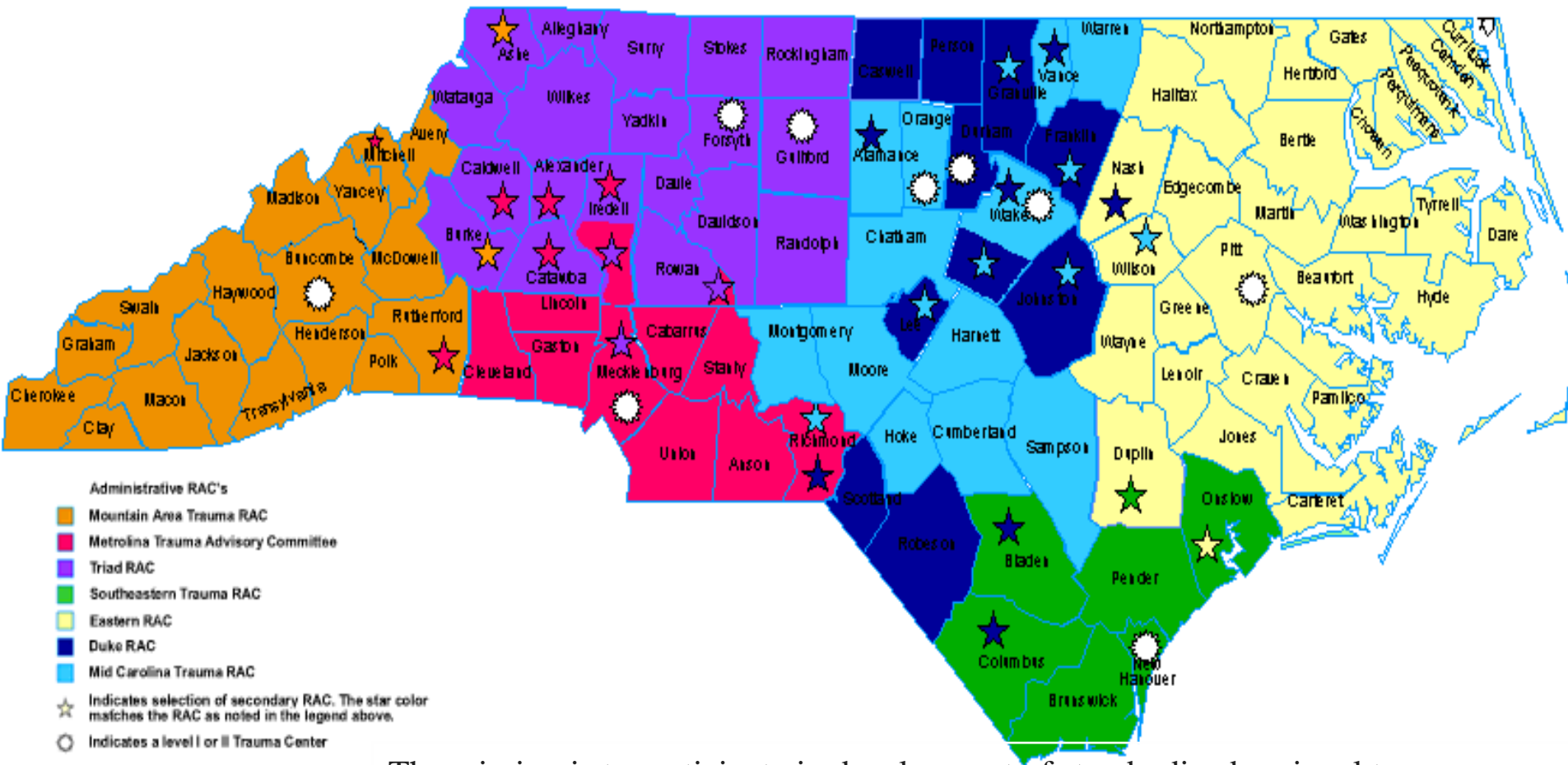
The Trauma Call:

- Patient/bystander calls 911
- Dispatch
- EMS response
- **Recognition of a RED TAG trauma by Paramedics**
- Pre-hospital emergency care/treatment
- Notification of the Trauma Team prior to ED arrival
- Transport to the most appropriate facility (Level I Trauma Center)
- Early definitive care



North Carolina Trauma Centers

RACs- Regional Advisory Committee



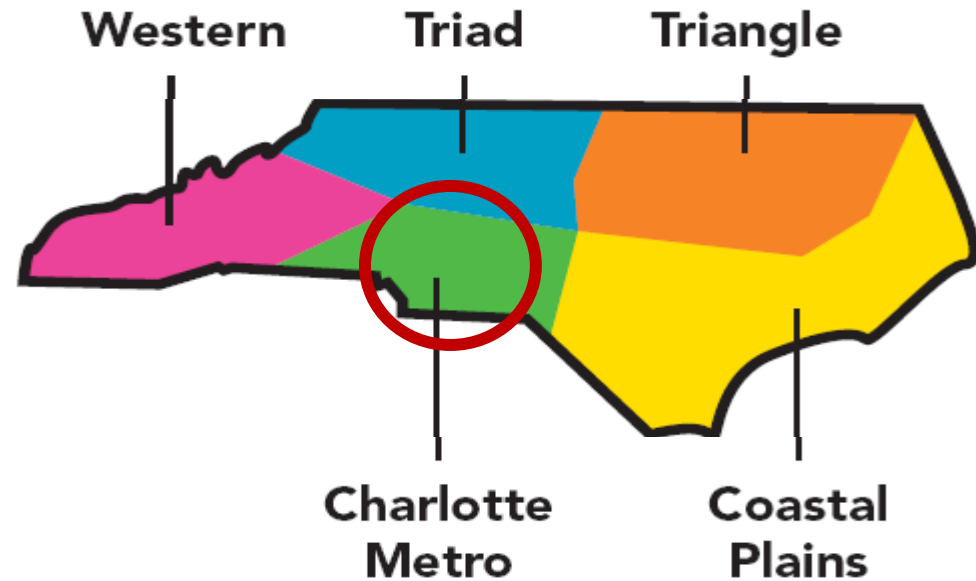
The mission is to participate in development of standardized regional trauma care, as well as the establishment and maintenance of a coordinated trauma system to promote optimal trauma care for all citizens within the Trauma RAC's area.

Charlotte Metro pop. >1,050,000 (2008)
18th largest city in the U.S.

98 Non PCI Hospitals

19 PCI Hospitals

500+ EMS Systems



RACE PCI Hospitals by Region (24 / 7 availability with on-site surgical backup)

Western	Triad	Charlotte Metro	Triangle	Coastal Plains
Frye Mission	Forsyth Highpoint Moses Cone WFUBMC	CMC CMC-Mercy CMC-Northeast Gaston Presbyterian	Duke Durham Regional UNC Rex Wake	Cape Fear Valley CarolinaEast First Health New Hanover Pitt

Hub and Spoke concept



Benefits of Regionalization:

- Right patient, right hospital, right time
- Streamlined process
- Eliminate duplication
 - Resultant cost reduction?
- Networking of un-networked hospitals

System Barriers to Implementing a Regional System:

- Lack of integrated healthcare system
- Lack of standardized protocols
- Hospital overcrowding
- Reimbursement
- EMTALA
- Ambiguity of leadership
- Resources
- EMS level of provider
- Geographical challenges



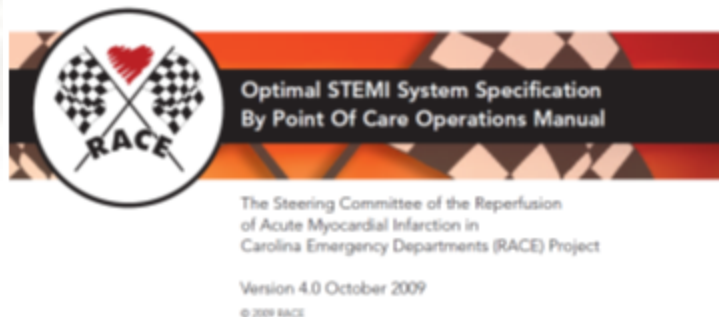
Steps for Creating a Regional System for Stroke and STEMI Care:

- Create common goals based on evidence-national guidelines and specialty recommendations
- Design care tools that emphasize goals
- Create methods to measure performance (registries)
- Create a method to feedback results (real time & registries)
- Reformulate the aims
- Sustain the Gain

RACE Operations Manual:

Optimal system specifications by point of care

- EMS, STEMI
- Non-PCI and PCI EDs
- Transfer protocols
- Catheterization lab
- Other system issues – payers, regulations
- Choice of PCI or lytic reperfusion regimens



Single best plan per hospital: RACE OPERATIONS MANUAL:

Regimen A – Primary PCI

Preferred if able to meet time goals

(To be used with institution specific standing orders/protocols for ST-elevation myocardial infarction patients)

ELIGIBLE PATIENTS

- Within 12 hours of symptom onset.
- ST-segment elevation in 2 or more contiguous leads >1mm or left bundle branch block.
- Primary angioplasty is also the best option for:
 - Cardiogenic Shock; Killip class III or >.
 - Possible ST-elevation MI but uncertain of diagnosis.
 - Contraindication to fibrinolysis.
 - Physician or patient preference.

Goal is to open artery with angioplasty balloon within 90 minutes of arrival to first hospital or first medical contact.

- Emergency department physician makes the decision about need for primary angioplasty, if possible. Consultation should be limited to situations of uncertainty.
- Notify PCI hospital of an ST-elevation MI in need of primary angioplasty.
- Complete EMTALA form as a priority.
- Fax patient records including ECG to receiving hospital WHILE PATIENT IN TRANSFER.
- Continuous IV infusions should only be used if required for stability during transfer.

OTHER MEDICATIONS

1. Heparin: Bolus at 70 IU/kg IV bolus. No maintenance infusion during transfer.
2. Aspirin: 325 mg chewed.

PRN Medications:

1. Nitroglycerin paste 1 to 2 inches topically PRN chest pain.
2. Morphine Sulfate 2-10mg IV for chest pain unrelieved by Nitroglycerin PRN.

Reperfusion Regimen B – Fibrinolysis

(To be used with institution specific standing orders/protocols for ST-elevation myocardial infarction patients)

ELIGIBLE PATIENTS

- Within 12 hours of symptom onset.
- ST-segment elevation in 2 or more contiguous leads >1mm or left bundle branch block.
- Absence of contraindications (see below).

FIBRINOLYTIC [tenecteplase (TNK) or reteplase (rPA)]

Tenecteplase (TNK) regimen

Single IV bolus over 5 seconds

Use TNK dose chart at right to determine dose. ➡

Patient weight _____ kg
Patient-specific dose _____ mg
(NOT TO EXCEED 50mg)

OR

Reteplase (rPA) regimen

10 units IV over 2 minutes given twice at 30-minute intervals.

Patient Weight (kg)	TNK (mg)	Volume TNK to be administered (ml)
< 60	30	6
≥ 60 to < 70	35	7
≥ 70 to < 80	40	8
≥ 80 to < 90	45	9
≥ 90	50	10

In nurses' notes and MAR, please note EXACT TIME of fibrinolytic administration, and obtain ECG 30 minutes after fibrinolytic administered.

OTHER MEDICATIONS:

1. Heparin:
 - a. Bolus at initiation of TNK or rPA - 60 IU/kg IV bolus (maximum 4,000 IU).
 - b. Maintenance 12 IU/kg/h (maximum 1,000 IU) to achieve activated partial thromboplastin time (APTT) 1.5 to 2 times control, maintained for 48 hrs.
2. Aspirin 325 mg chewed.

Absolute contraindications

- ☐ Any prior intracranial hemorrhage
- ☐ Known structural cerebral vascular lesion (for example arteriovenous malformation)
- ☐ Known malignant intracranial neoplasm (primary or metastatic)
- ☐ Ischemic stroke within 3 months EXCEPT acute ischemic stroke within 3 hours
- ☐ Suspected aortic dissection
- ☐ Active bleeding or bleeding diathesis (excluding menses)
- ☐ Significant closed head or facial trauma within 3 months

Relative contraindications

- ☐ History of chronic severe, poorly controlled hypertension
- ☐ Severe hypertension on presentation (systolic blood pressure greater than 180 mm Hg or diastolic blood pressure greater than 110 mm Hg)
- ☐ History of prior ischemic stroke greater than 3 months, dementia, or known intracranial pathology not covered in contraindications
- ☐ Traumatic or prolonged (greater than 10 minutes) CPR or major surgery (less than 3 weeks)
- ☐ Recent (within 2 to 4 weeks) internal bleeding
- ☐ Noncompressible vascular punctures
- ☐ Pregnancy



Successes:

- State resources already addressing regionalization of STEMI and Stroke care
 - Legislative initiatives
 - OEMS
 - Grants
- Regions exist for STEMI and Networks exist for Stroke
- Data platforms already exist
- Best treatment options are being built into plans

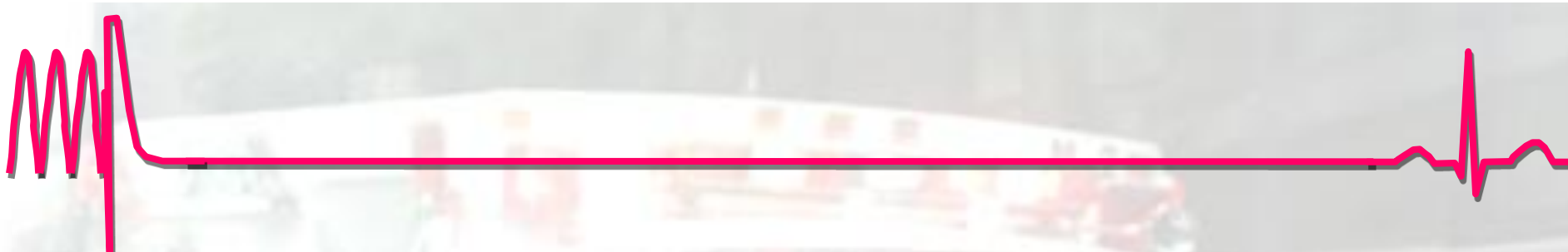


Regional Systems of Care for Out-of-Hospital Cardiac Arrest : A Policy Statement From the American Heart Association



we believe **that the time has come** for a call to **develop and implement** standards for **regional systems of care** for those with restoration of circulation after **OOHCA**; concentrate **specialized** post resuscitation skills in selected **hospitals**; transfer unconscious post– cardiac arrest patients to these hospitals as appropriate; **monitor, report**, and try to **improve** cardiac resuscitation **structure, process, and outcome**; and reimburse these activities.

Circulation. 2010;121:709-729;

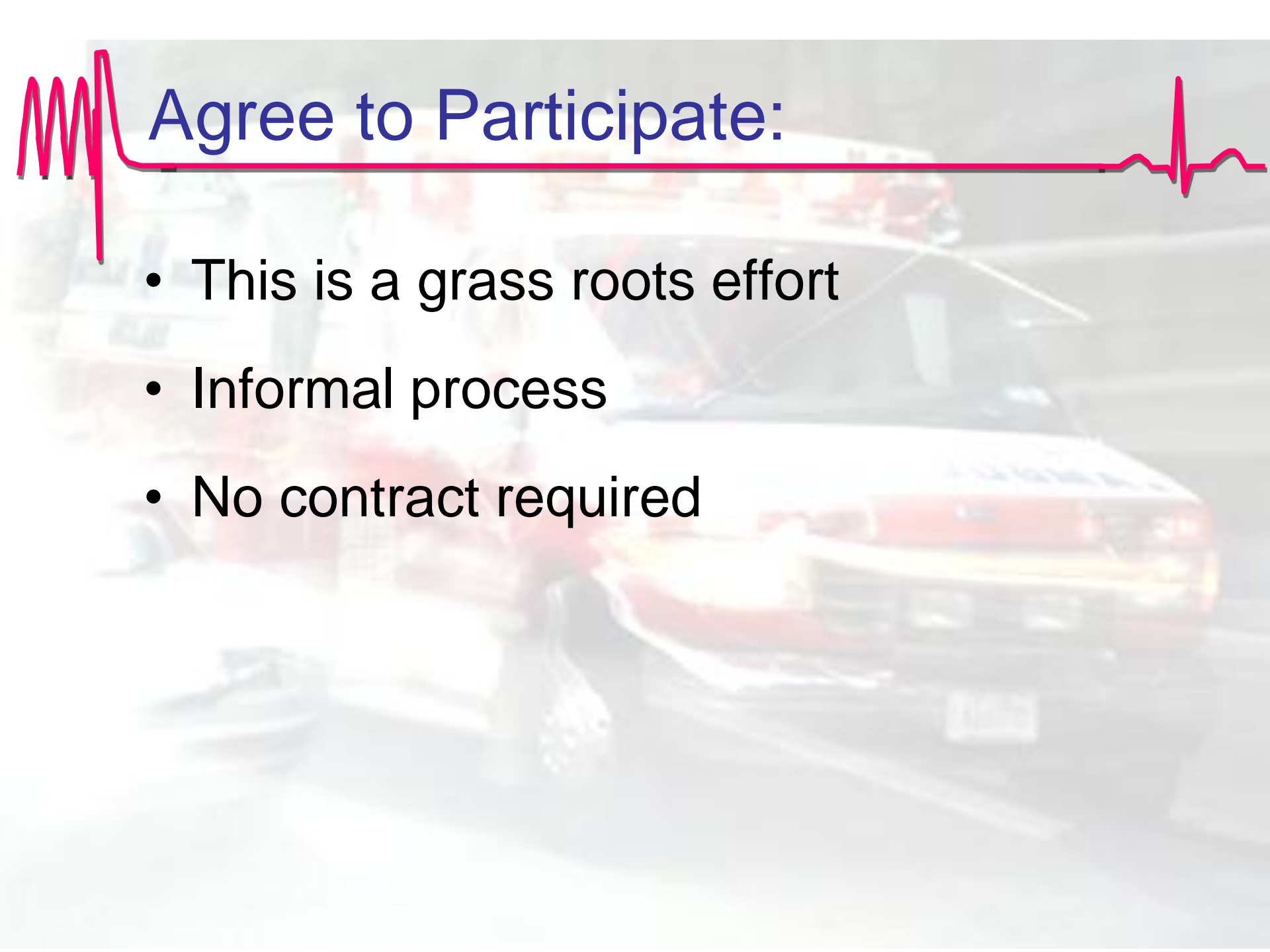


Successful implementation and maintenance of cardiac resuscitation systems of care would have a significant and important impact on the third-leading cause of death in the United States.

**The time to implement these
systems of care
IS NOW!**



Agree to Participate:

- This is a grass roots effort
 - Informal process
 - No contract required
- 



EMS Participation:

- Agree to participate
- Complete survey to understand current practice
- Participate in regional meetings
- Create/update order sets, protocols, etc., based on
 - AHA guideline recommendations, NC Operations Manual, Regional Plan, NCOEMS Protocols
- Agree to enter CARES registry data on cardiac arrest patients
- Engage First Responders and Dispatch in this project
- Implement improvement efforts as identified by your data

Hospital

- Post cardiac arrest care
 - Strong physician leader
 - Cardiac arrest team / coordinator
 - ICU / hypothermia / cath. / neurology protocols
 - Limited data measurement and feedback
- EP evaluation / Implantable defibrillators
- Community support / training





All Hospitals:

- Lead community education efforts
- Train all employees in some level of CPR based on job classification
 - Orientation and ongoing yearly training
- Train patient and families on recognition and compression only CPR on discharge



Survey:

- EMS Agencies and All hospitals
- RACE Coordinator will send to your contact to complete
- Understand current processes around cardiac arrest
- Use for regional, hospital, and agency specific plans
- Completion:
 - 76% PCI centers 16/21
 - 37% EMS 37/100
 - 31% Smaller facilities 31/100
- Complete Before and at the End of the Project to evaluate process changes



Regional Meeting:

- Understand resources
- Understand what EMS Agencies and Hospitals plans are for OOHCA
- Create regional plan based on input from all
- Consider Bypass and STEMI plans
 - If non PCI hospitals do not want to care for these cardiac arrest patients, EMS would implement their bypass plan if appropriate
 - Non PCI center still need a transfer process for STEMI patients – EMS could also bypass if appropriate
- Community Plans



Regional Plans:

- Sets expectations for best care of the cardiac arrest patient
- From Dispatch to Hospital Discharge
- Monitoring to make sure we have the best plan in place
- Adjust plans based on data and change in resources
- Decide on data, feedback, and review



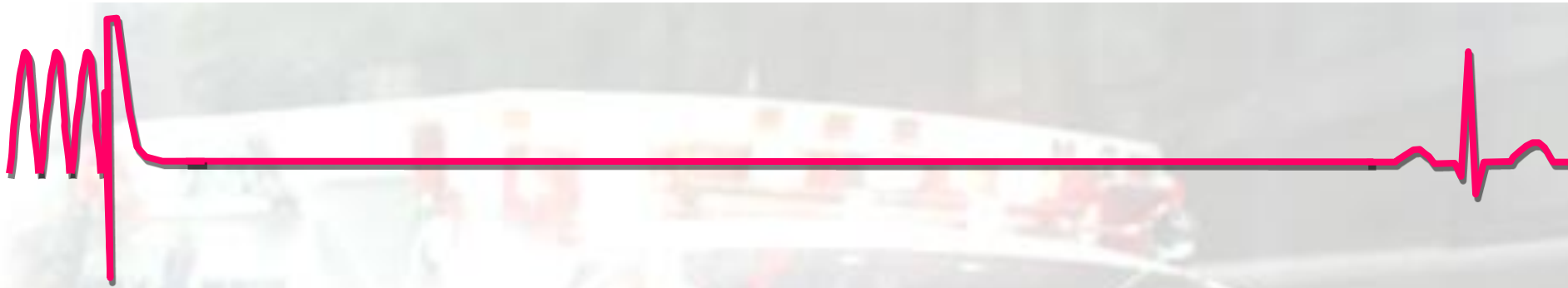
Feedback:

- Who drives this process?
- What data to include?
- Individual Case Data
- Data over time



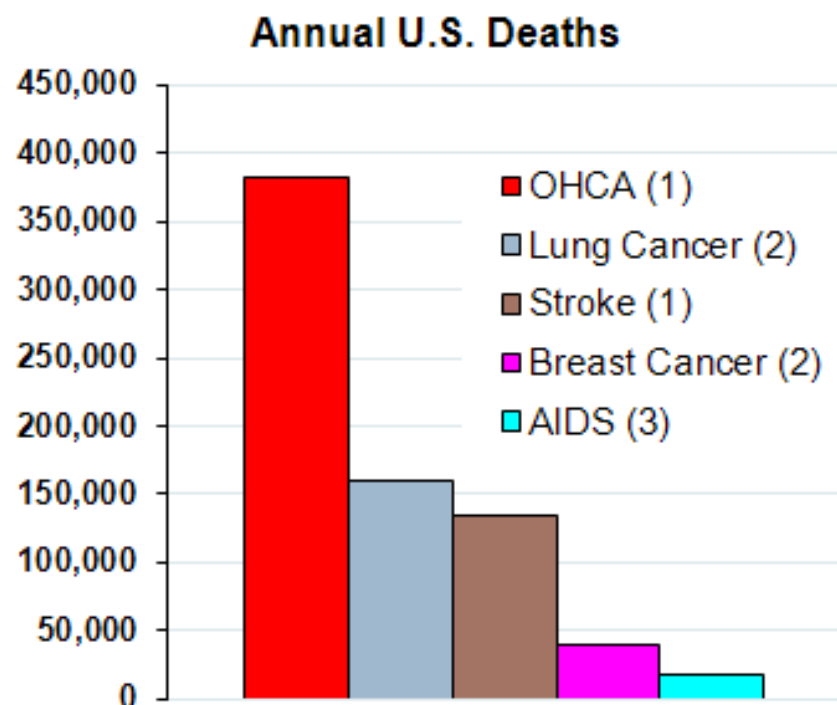
Data Review:

- What to review?
- How often to review?
- What format to review?
 - Meeting, call, written
- Case review



*“Where you live should
not determine
whether you live”*

Out-of-Hospital Cardiac Arrest: Overlooked Cause of Death



- ▶ Wide variance in local, regional, economic and ethnic survival rates
- ▶ Current data collection sporadic, minimizing motives for systemic improvement

(1) American Heart Association Heart Disease and Stroke Statistics – 2012 Update.

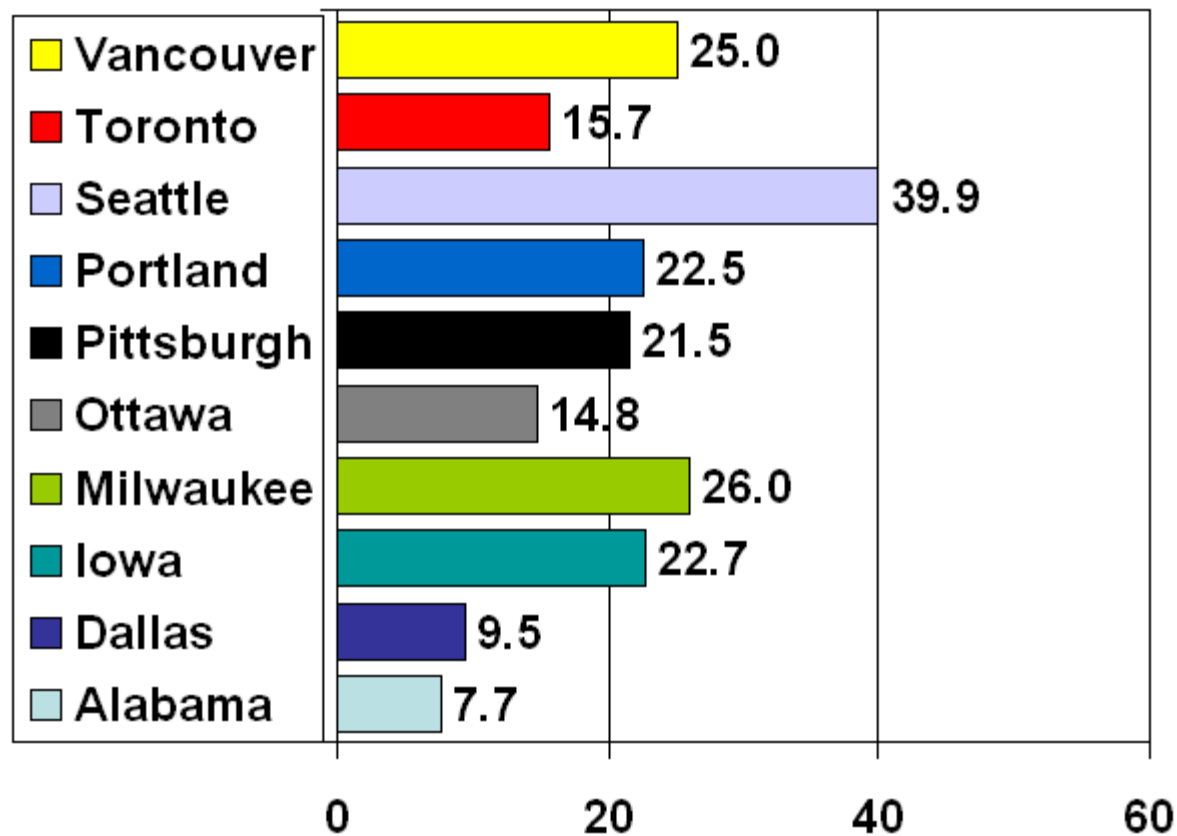
(2) Cancer.org - 2012.

(3) U.S. HIV & AIDS Statistic Summary. Avert.org.

Variation in survival VF arrest

Resuscitations Outcomes Consortium

Survival to discharge





Cardiac arrest in North Carolina:

~ 5000-8000 per year (ED vs. EMS records)

NC Office of EMS Preliminary data

- Statewide Cardiac Arrests: 5,213
- EMS Return of Spontaneous Circulation: 1,845 (35%)
- Arrived at Emergency Department Alive: 1,034 (20%)
- Admitted to Hospital Alive: 589 (11%)
- Discharge from Hospital Alive :not available... likely under 5%



Cardiac arrest in North Carolina

From the CARES Registry:

Bystander CPR 23%

AED Use 1.3%

Public CPR training 3% / year

32% Survival Rate

(Utstein criteria)

Original CARES data from Wake, Durham and
Mecklenburg Counties



NC Success Stories:

- Pregnant Woman/School Teacher – Charlotte
- Legislator-Raleigh
- Police Officer - Yadkinville
- Baseball Coach-Winston-Salem
- Former Girl scout performs CPR-Durham
- Rural EMS: Stokes County Survival Rate 66%

HeartRescue Partners





HeartRescue Partners



Program Goals:

Goal 1: Improve Survival of Cardiac Arrest by 50% over 5 years in geographies we fund.

Goal 2: Increase and improve measurement of Sudden Cardiac Arrest.

Goal 3: Expand and improve national and global impact of the HeartRescue Project.

Program Results FY12- Q1FY13:

1. Partner programs now covering 50% or more of state populations, and reported on baseline and 2011 survival outcomes. **900 survivors reported in 2011.**
2. New partners in FY12 (AMR), and FY13 (University of Illinois)
3. All partners hosted 25 Resuscitation Academies and eLearning webinars reaching 1,000+ EMS/Hospital leaders with best practice education
4. Partners presented to 1,200 EMS leaders at 8 events to date.
5. 3 million people saved a life virtually with Save-a-Life Simulator on HeartRescueNow.com

Goals:

Program Goals

Improved Survival Rates

50% improvement in SCA survival in program states

- Partner grants



Improved Reporting

Increase and improve measurement of SCA nationwide

- Common data set and registry (CARES)
- SCA national index



Improved National and Global Impact

Expand nationally and internationally

- Expand grant program
- SCA Community Playbook





CPC Score:

Cerebral Performance Category

GOAL-ALIVE WITH GOOD
NEURO OUTCOMES



The level at the time of discharge

Level 1: Alert, able to work and lead a normal life.

Level 2: Conscious and able to function independently, but may have hemiplegia, seizures, or permanent memory or mental changes.

Level 3: Conscious, dependent on others for daily support, functions only in an institution or at home with exceptional family effort.

Level 4: Coma, vegetative state.

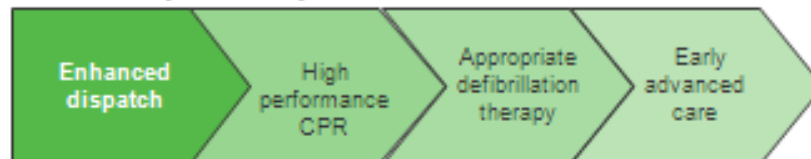
How to improve:

Improving SCA Survival

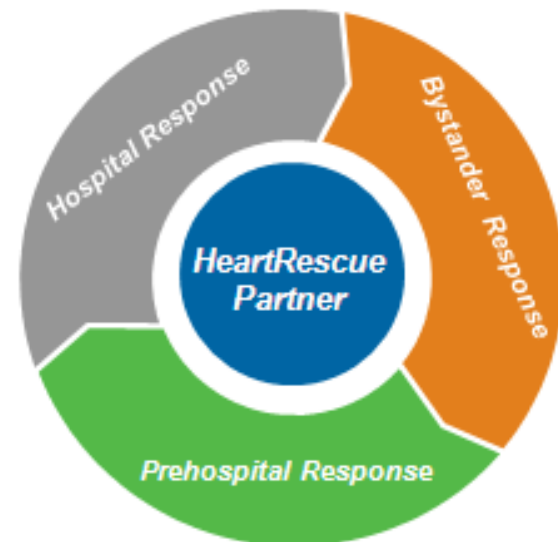
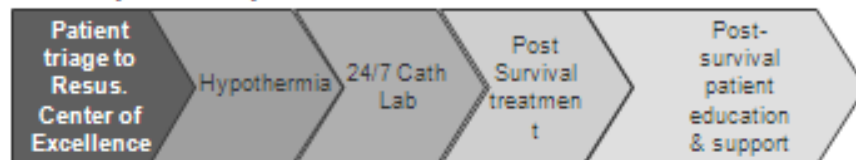
1: Bystander Response



2: Prehospital Response



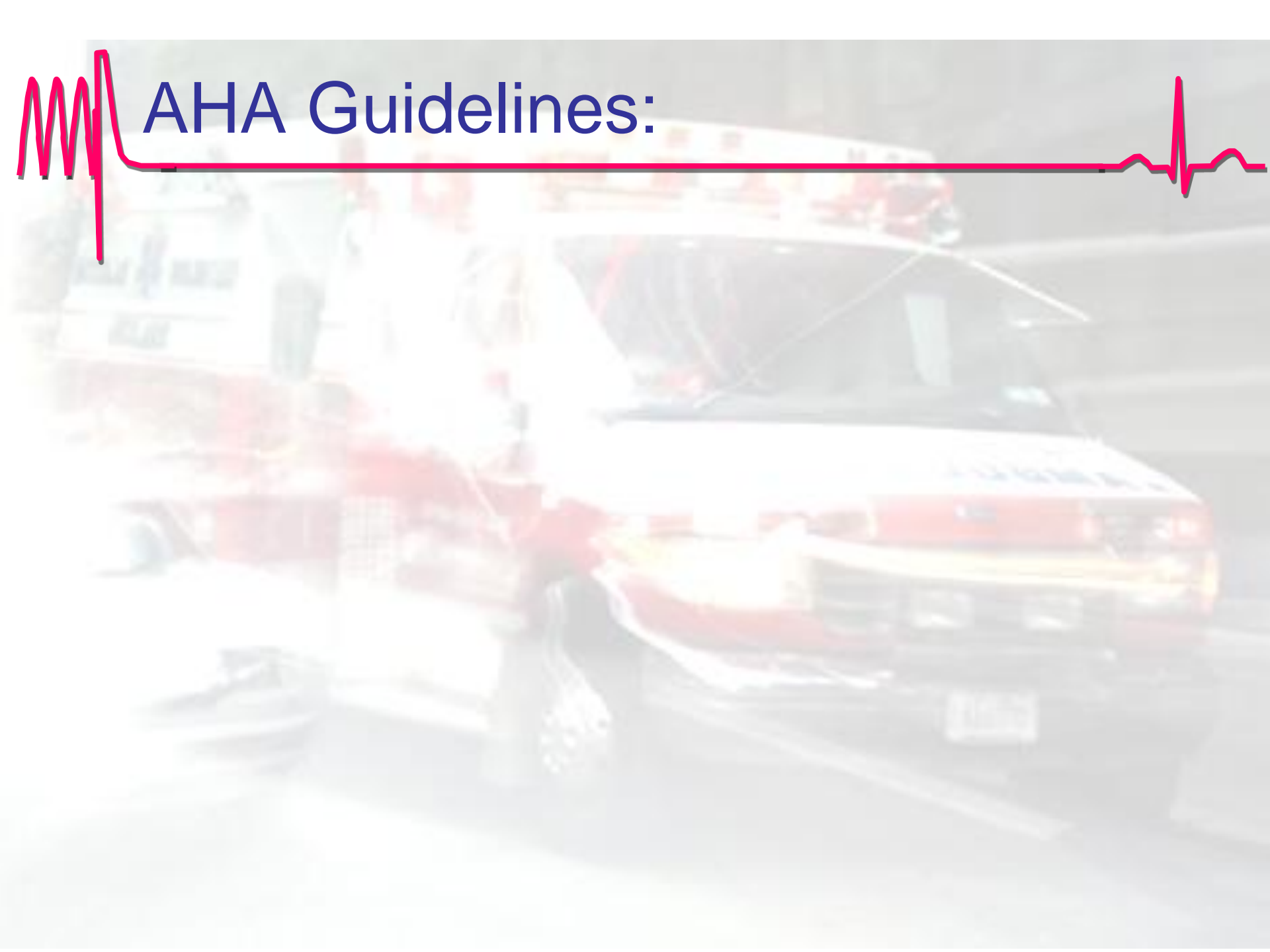
3: Hospital Response



Strategies for improving survival

- Medical leadership
- Community
 - Bystander CPR
 - Public access defibrillation
- 911 dispatch
 - Rapid first response
 - Dispatch assisted CPR
- EMS
 - High quality CPR
 - Early defibrillation
- Hospital
 - Specialized centers for treating post–cardiac arrest patients
 - Multidisciplinary post–cardiac arrest care treatment plan
 - Early PCI
 - Therapeutic hypothermia
 - Early hemodynamic optimization
 - AICD placement

AHA Guidelines:



Adult Chain of Survival



1. Immediate recognition of cardiac arrest and activation of the emergency response system
2. Early CPR with an emphasis on chest compressions
3. Rapid defibrillation
4. Effective advanced life support
5. Integrated post–cardiac arrest care



Why treat with TH?



- With TH, cell metabolic rate decreases 6 – 7 % for every 1^o C lowered temp
- ↓ cell metabolism leads to ↓ O₂ consumption
 - TH slows neuroexcitatory processes
 - Leads to ↓ in disruptions in blood brain barrier and prevents premature cell death
 - TH ↓ many chemical rxns, including free radical production
 - TH ↓ inflammatory response (by decreasing activity of neutrophils and macrophages)



Trial Outcomes

Alive at hospital discharge with favorable neurological recovery

	Hypothermia	Normothermia	P Value
HACA	53%	36%	.006
Bernard	49%	26%	.052

Alive at 6 months with favorable neurological recovery

	Hypothermia	Normothermia	P Value
HACA	52%	36%	.009



Who to Cool?

Part 9: Post-Cardiac Arrest Care

2010 American Heart Association Guidelines for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care

Mary Ann Peberdy, Co-Chair*; Clifton W. Callaway, Co-Chair*; Robert W. Neumar; Romergryko G. Geocadin; Janice L. Zimmerman; Michael Donnino; Andrea Gabrielli; Scott M. Silvers; Arno L. Zaritsky; Raina Merchant; Terry L. Vanden Hoek; Steven L. Kronick

Class I, LOE B All comatose patients with ROSC after out-of-hospital VF cardiac arrest should be cooled to 32 – 34° C for 12 – 24 hours.

Class IIb, LOE B Induced hypothermia also may be considered for comatose adult patients with ROSC after in-hospital cardiac arrest of any rhythm or after out-of-hospital cardiac arrest with an initial rhythm of pulseless electrical activity or asystole



Who to Cool?

RACE Ops Manual Recommendations



- After cardiac arrest due to VF, all intubated pts should receive TH unless:
 - The pt can follow verbal commands
 - > 8 hours have since ROSC
 - Life threatening bleeding or infection
 - Cardiopulmonary collapse is imminent, despite vasopressor support
 - Refractory hemodynamically significant arrhythmias
 - Aggressive care not warranted
- Also consider TH following cardiac arrest due to PEA or asystole



Who to Cool?

NCOEMS Protocol



- Criteria for TH:
 - Any presenting rhythm is eligible
 - Advanced airway (including BIAD) in place with no purposeful response to verbal commands
 - Initial temp $> 34^{\circ}$ C
 - Non traumatic or hemorrhage arrest
- Relative contraindications:
 - Pregnancy
 - Sepsis



When to Cool

Best time to initiate TH and the optimal duration of cooling is not well defined

Overall thought:

- Reasonable to initiate cooling as soon as possible to maximize benefits
 - Injury to the brain starts within minutes
 - Benefits of cooling have been shown with delayed initiation

Code Cool

1. Induction

2. Maintenance

3. Rewarming

Page 1 of 2

Carolinas Medical Center (CMC) Therapeutic Hypothermia Post Cardiac Arrest CMC Critical Care Committee

Initiate: CMC Therapeutic Hypothermia Post Cardiac Arrest

Verify Allergies: _____

Admit to: ICU under Dr.: _____ List: _____

Diagnosis: Cardiac Arrest

Condition: Critical

Notify Paging Operator at 355-2443 to activate Code Cool

Consults

Pulmonary and Critical Care Consultants (PCCC) ; page #3767 immediately, unless previously notified
Sanger Cardiology

Physical Medicine and Rehabilitation - List 66287

Activate Group Page 8760 for family support referral

Treatment Parameters

Refer to: CMC Therapeutic Hypothermia After Cardiac Arrest Guideline

Goal Temperature 33° C

Minimize FiO₂ to maintain SpO₂ greater than 95%

Maintain Mean Arterial Pressure (MAP) greater than 65 mmHg

Maintain PaCO₂ of 38 - 42 mmHg

Pharmacy/Treatments and Interventions Weight: _____ kg

Hold all orders for Beta Blockers and Antihypertensive medications

Maintenance IV Fluids: _____ at _____ ml per hour

Norepinephrine (Levophed) 5 mcg/min; titrate to maintain MAP greater than 65 mmHg

Induction Phase (if not completed in the ED)

Place Temperature monitoring Foley catheter

Initiate refrigerated (4° C) IV NS 30 ml/kg bolus over 1 hour as tolerated

Apply Cooling Device with goal temperature set to 33° C

Pantoprazole (Protonix) 40 mg IV Q24H; first dose upon admission to ICU

Shivering Protocol

Initiate sedation per CMC Sedation and Analgesia for the Mechanically Ventilated Non Paralyzed Patient (MD to initiate)

For refractory shivering: Vecuronium (Norcuron) 0.1 mg/kg IV Push Q1H PRN shivering

Maintenance Phase

Maintain temperature of 33° C for 24 hours via Cooling Device

Re-warming Phase

Begin controlled re-warming at less than 0.5° C per hour to 37° C via Cooling Device

Discontinue sedation once 36° C is achieved

Cooling Device to remain operational with goal temperature of 37° C until order received to discontinue

Refer to: CMCC Subcutaneous Insulin Orders for the Non-Pregnant Patient (MD to initiate)

Implement: SO CMC Tight Glucose Control for the Adult Patient in MICU SICU TICU DHU CVRU or Neuro ICU (EndoTool[®]) if 2 consecutive blood glucose checks greater than 150 mg/dL



EMS & TH



- Trial evaluated efficiency and efficacy of pre-hospital TH
- Cooled ROSC patients in the field with 4°C Saline
- Found it safe and feasible
- Effective at lowering temp
 - Expect a ↓ of 1.7 - 2°C with 2L cool saline
 - Pre-hospital cooling not associated with adverse consequences in terms of
 - BP, HR, arterial oxygenation, pulmonary edema, or re-arrest

Pilot Randomized Clinical Trial of Prehospital Induction of Mild Hypothermia in Out-of-Hospital Cardiac Arrest Patients With a Rapid Infusion of 4°C Normal Saline

Francis Kim, Michele Olsufka, W.T. Longstreth, Jr, Charles Maynard, David Carlbom, Steven Deem, Peter Kudenchuk, Michael K. Copass and Leonard A. Cobb



Summary of 2010 Guidelines

- Many resuscitation systems and communities have documented improved survival from cardiac arrest.
- Too few victims of cardiac arrest receive bystander CPR.
- CPR quality must be high.
- Victims require excellent post–cardiac arrest care by organized, integrated teams.
- Education and frequent refresher training key to improving resuscitation performance.
- We must rededicate ourselves to improving the frequency of bystander CPR, the quality of all CPR and the quality of post–cardiac arrest care.



HIGH QUALITY CPR

ACLS: De-emphasis of Devices, Drugs and other Distracters

- Focus on high-quality CPR and defibrillation
- Atropine no longer recommended for routine use in



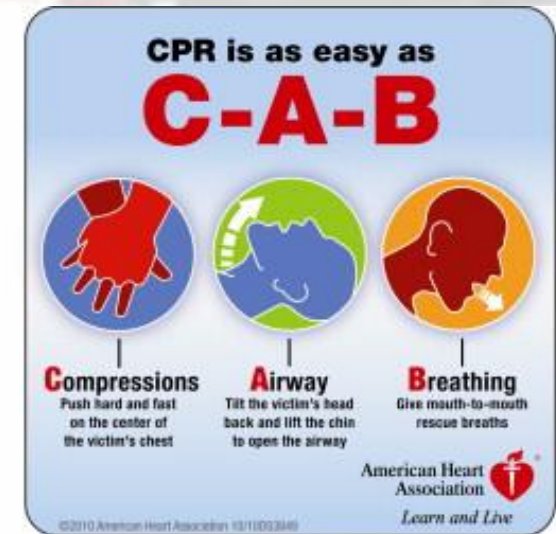
High Quality CPR



- Goal: high quality and continuous chest compressions with limited interruptions
 - Rate: 100 – 120/min
 - Depth: 2 inches
 - Allow for complete chest recoil
 - Change every 2 minutes with pulse check
 - not to exceed 5 seconds
 - Address airway after unless indicated earlier

High Quality CPR

- Best chance for survival from OOHCA:
 - Early, continuous compressions and early defibrillation
 - Don't interrupt chest compression for inserting airway
 - Adult takes 10 – 15 minutes to de-saturate below 80%





Ventilation



- Recommended rate: 8 – 10/min
- Maintain SpO₂ > 95%
- Avoid Hyperventilation
 - Worsens brain ischemia by inducing cerebral vasoconstriction as PaCO₂ falls
 - Hyperinflation of the chest
 - increased intrathoracic pressure
 - and
 - impedes venous return to heart, affecting BP

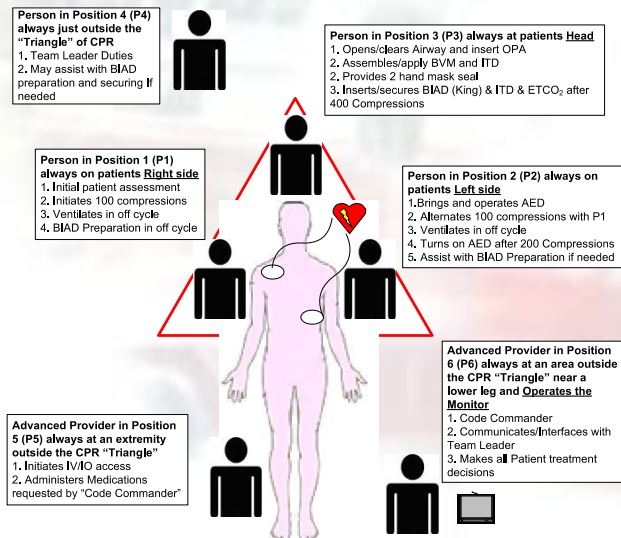


Pit Crew Approach to Resuscitation

- Focus on:
 - Leadership, team approach, skills & competencies, communication & teamwork, best practices, and rehearsal
- Emphasis on:
 - Minimally interrupted CPR
 - Controlled ventilations
 - Defibrillation
 - Appropriate timing of interventions

Pit Crew Approach

CPR Procedure



- Each person has assigned role
 - Providers focus on their assigned job expertly and efficiently
 - Practice in each role
 - Helps minimize interruptions

Pre-assigned Roles

1. Pit Crew Leader
2. Airway Leader
3. IV/IO & Medications
4. CPR Chief
5. CPR Duty Chief
6. Variable Player

Variations to this model exist for:

- 3 Rescuers
- 4 Rescuers
- 5 Rescuers
- 6 Rescuers



How to Implement:

- How are you training staff today for CPR?
- Simple training around concepts of CPR
- Practice High Quality CPR
- Adopt on scene resuscitation practice



How to Implement:

- Define roles for the team approach
 - Ask staff for input
- Educate on the roles
- Practice running resuscitation with the new roles
- Engage First Responders, practice with them



Did it work?

- Review each arrest
 - Did wells
 - Opportunities to improve
- Discuss quality of CPR
 - Machine review if possible
- Share metric times with all
- Discuss any changes that need to be made



Considerations:

- Measure what matters
- Make cardiac arrest a public health crisis
- Share your data within you community
 - Leverage support for your efforts
 - May lead to additional funding
 - Need community response to improve survival rates

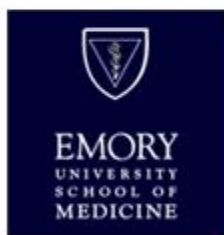
myCARES.NET



Welcome To:

Cardiac Arrest Registry to Enhance Survival (CARES)

Sponsored by:



American Heart Association
Learn and Live.



Log In to myCares™

Username:

Password:

Log In

[Did you forget your password?](#)



[CARES Introduction](#)

[More information on CareS](#)

[Press on CareS](#)

[Maps](#)

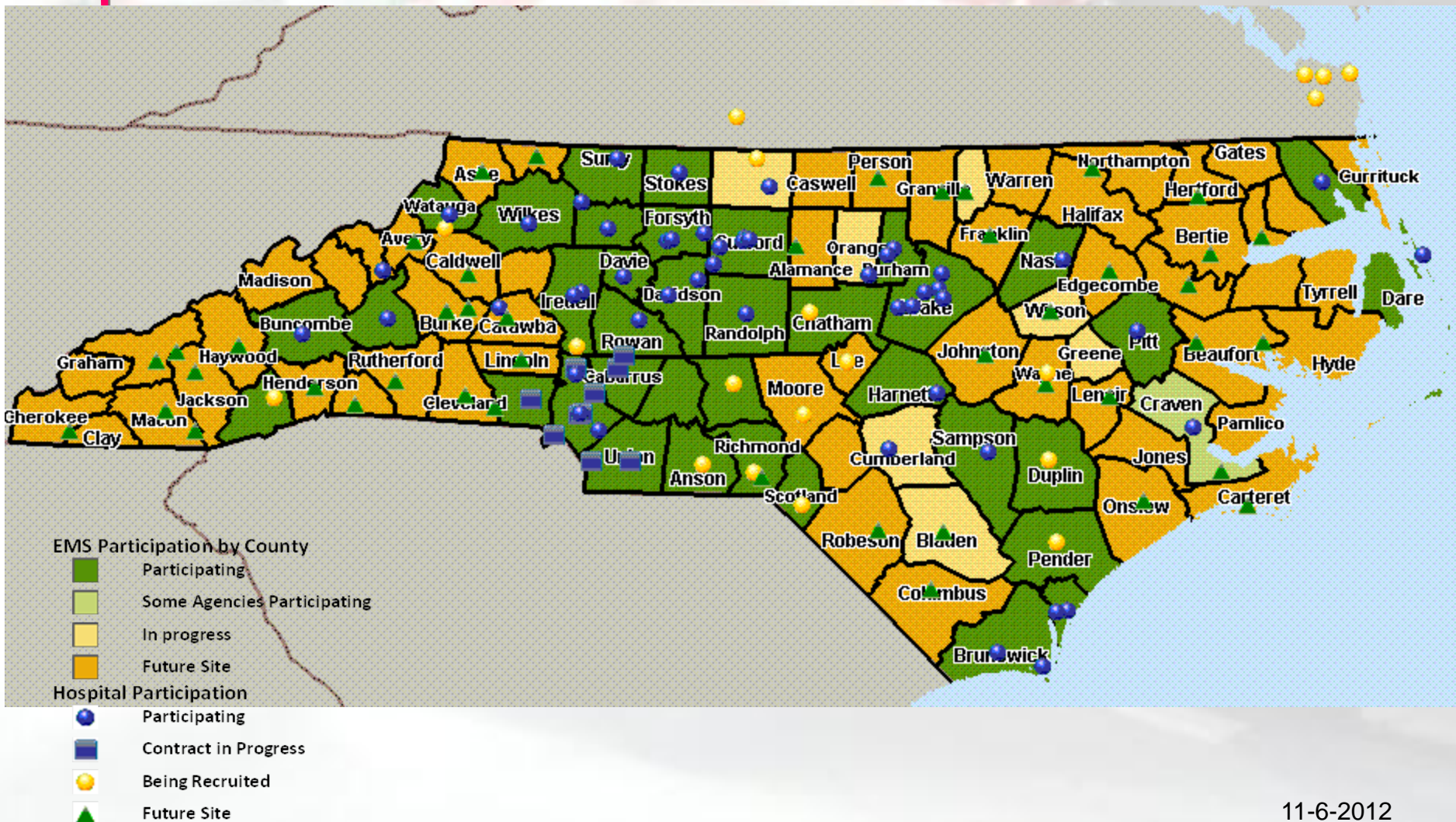
[IRB/HIPAA](#)

CARES

The Cardiac Arrest Registry to Enhance Survival (CARES) was initiated in October 2004 as a cooperative agreement between the Center for Disease Control and Prevention (CDC) and the Department of Emergency Medicine at Emory University School of Medicine to identify incidents of prehospital cardiac arrest. The CARES Program is designed to consolidate all essential data elements of a prehospital cardiac arrest event in an efficient manner. With this standardized collection system, participants can track ongoing system performance in several, tailored reports. If you have any questions about this program, please send an email to

CARES

Participation:



CARES Participation:

	Number	% Population	Cumulative Population
EMS Systems in NC	100	100%	
EMS Systems reporting into CARES	36	63.01%	63.01%
EMS Systems in Progress	9	8.85%	71.86%
Future EMS Systems	55	28.91%	100
Cases in the CARES (Audited)			
Total 2010	1643		
Total 2011	1911		
Total 2012	1829		
Grand Total to date	5383		
Hospitals in CARES			
Hospital identified by EMS as destination	79		
Hospitals Trained	56		
Hospitals with data in system	42		



North Carolina CARES

Overall Survival

Year to Date 2012

September 26, 2012

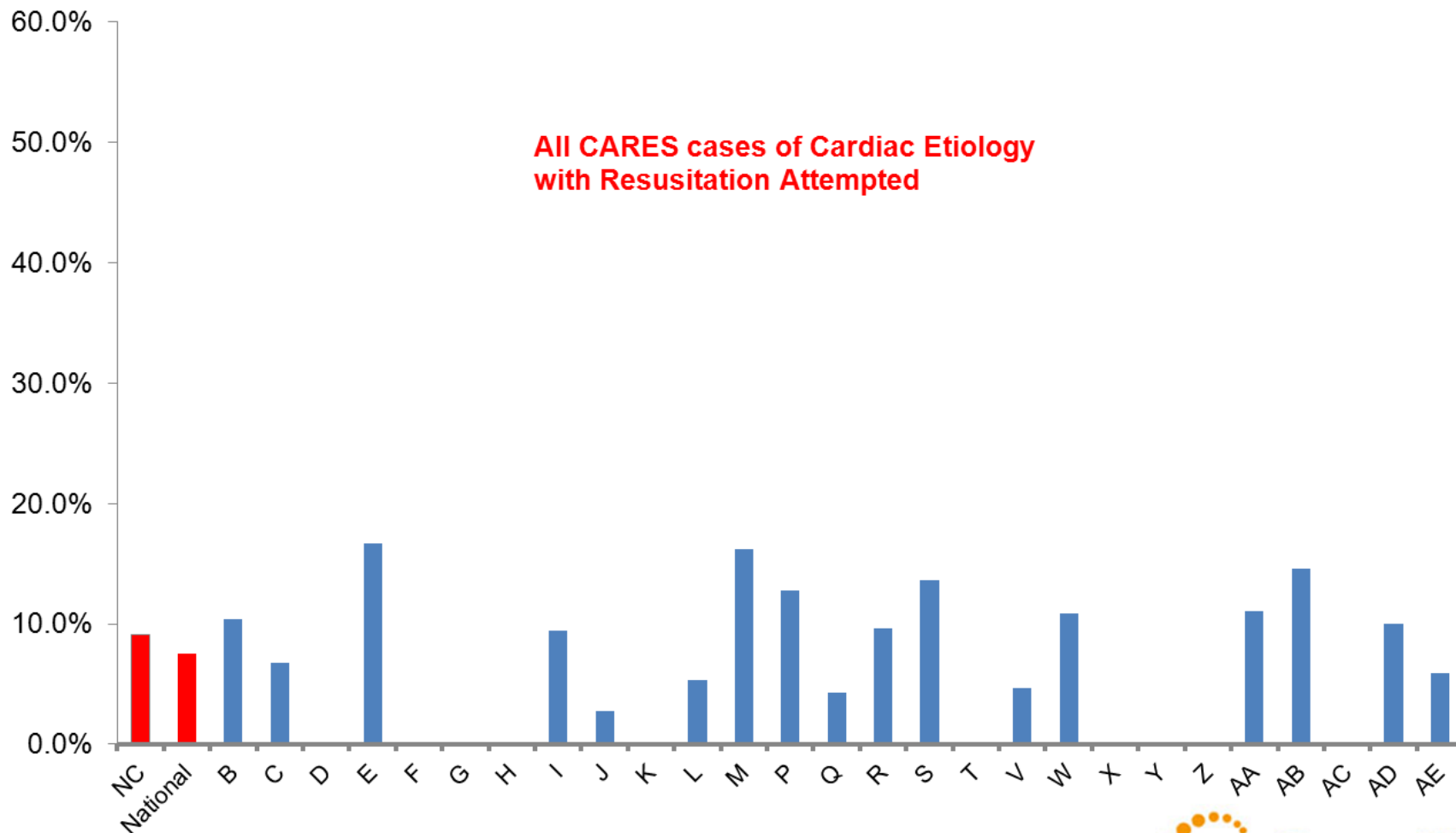


HeartRescue

PROJECT

Every second counts. Every action matters.

**All CARES cases of Cardiac Etiology
with Resuscitation Attempted**

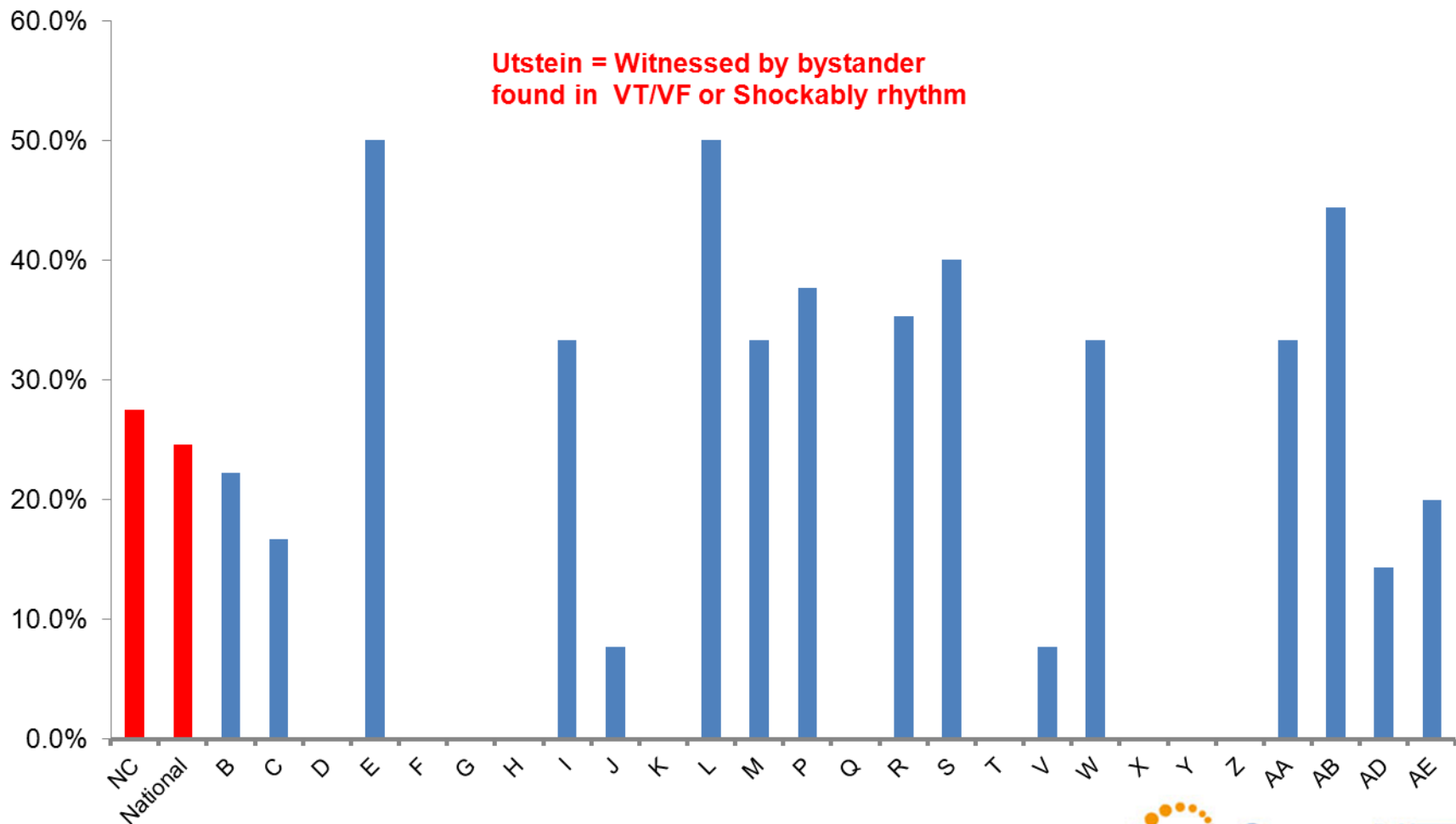




North Carolina CARES Utstein Survival Year to Date 2012 September 26, 2012

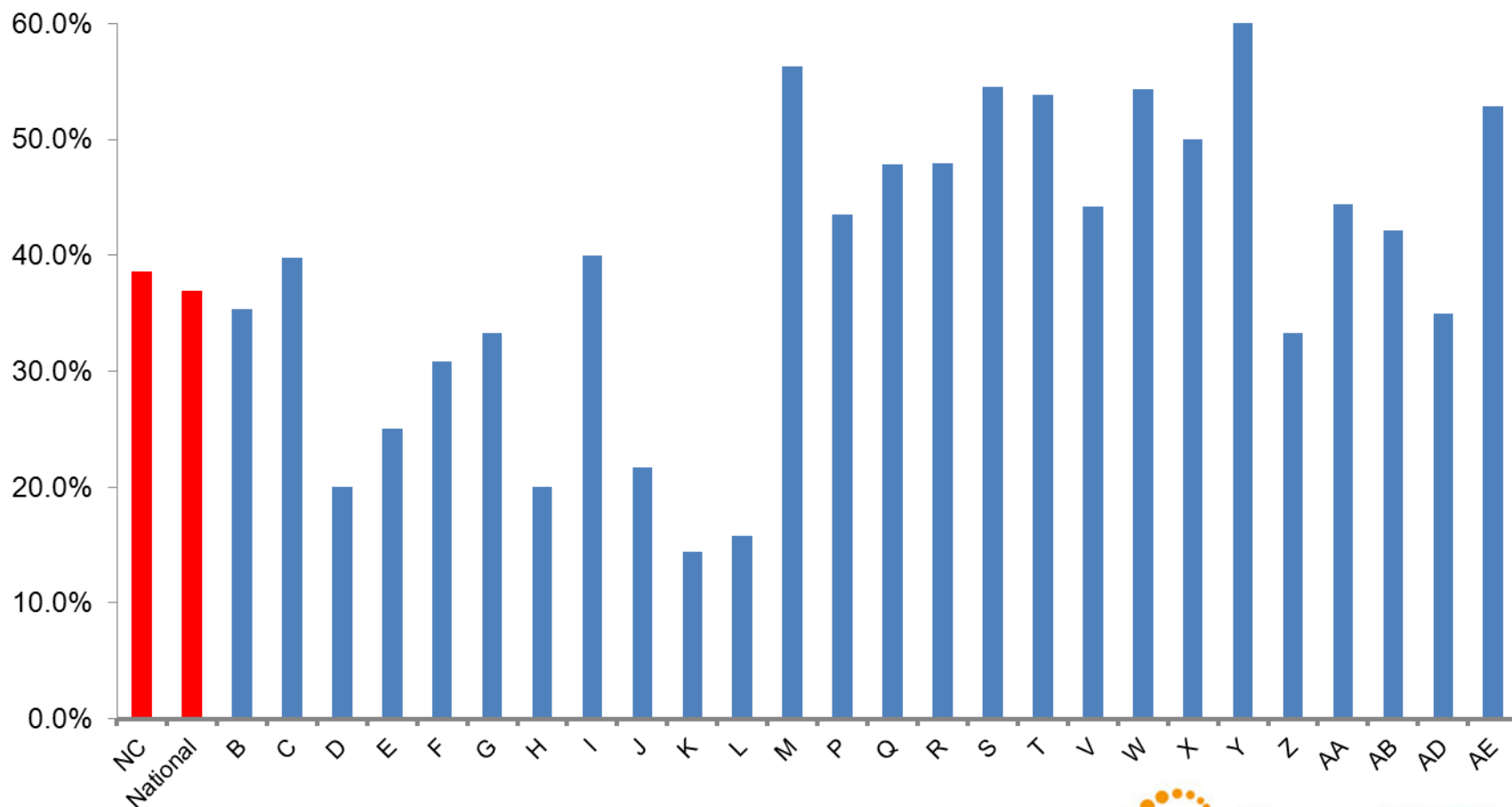


Utstein = Witnessed by bystander
found in VT/VF or Shockably rhythm



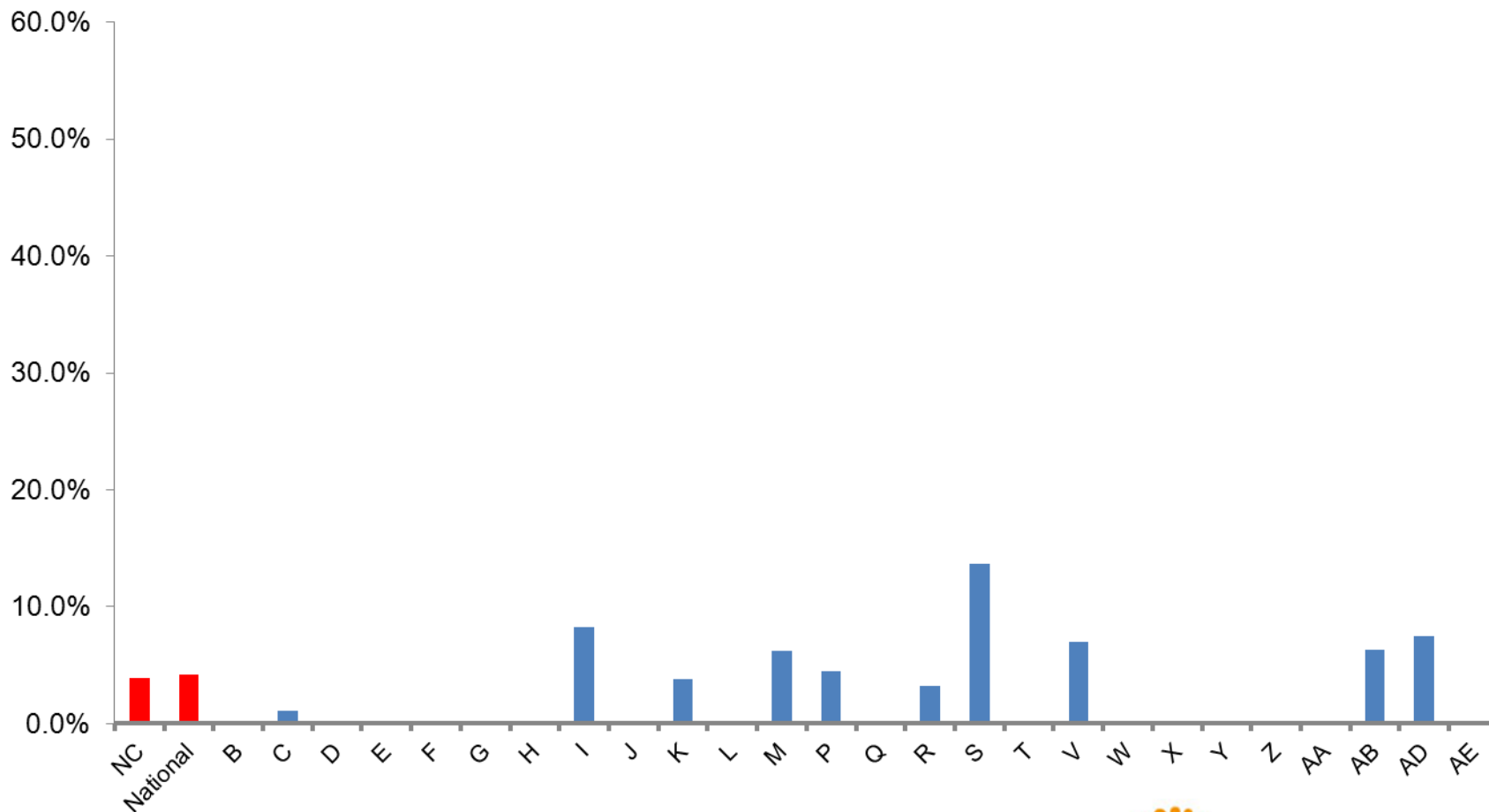


North Carolina CARES Bystander CPR Year to Date 2012 September 26, 2012





North Carolina CARES Bystander AED Application Year to Date 2012 September 26, 2012



Hospital Reports:





Hospital:

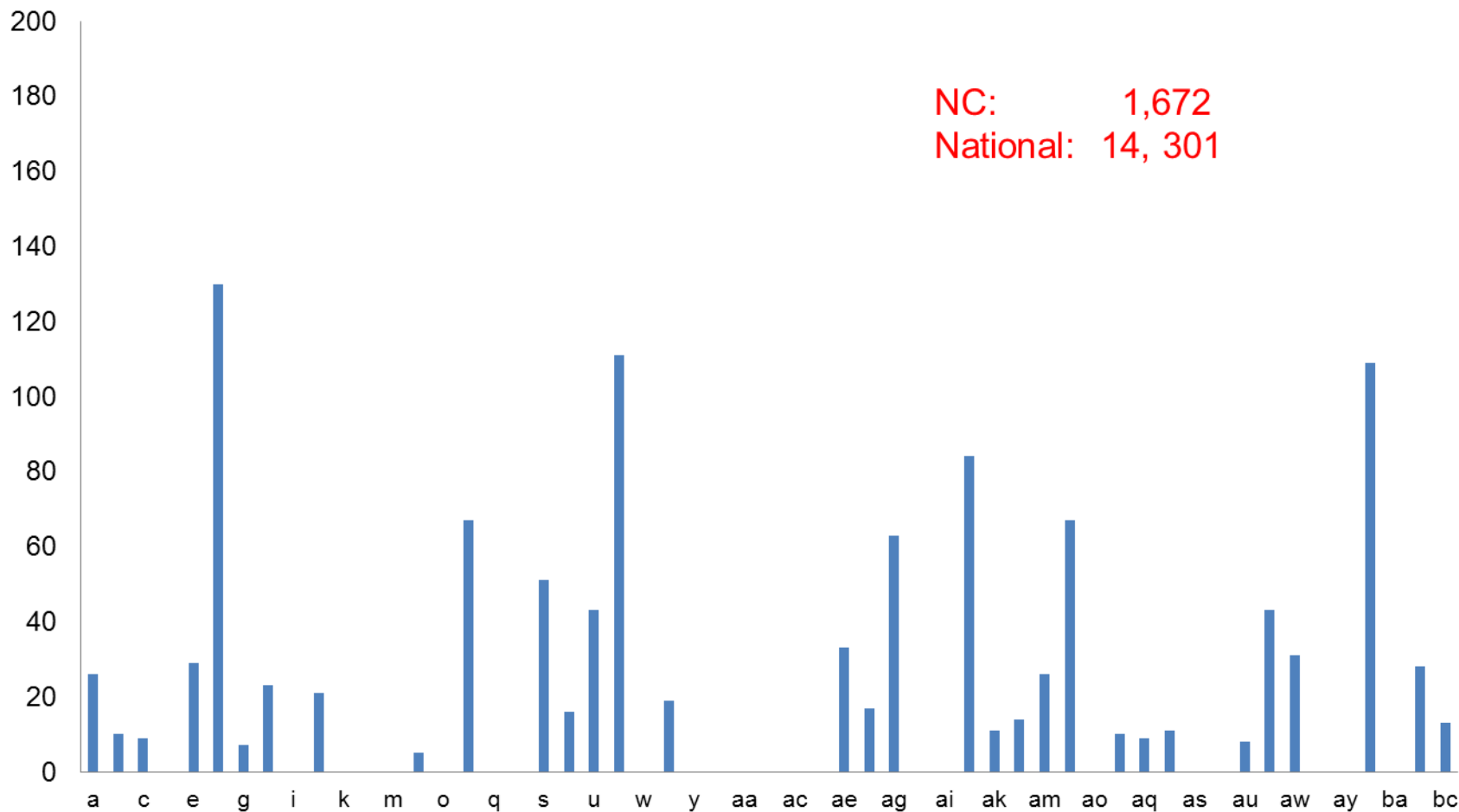
- CARES hospital data is limited:
 - Dies in ED – 1 element
 - Survives to DC – 10 elements
- Consider voluntarily entering into the INTCAR registry

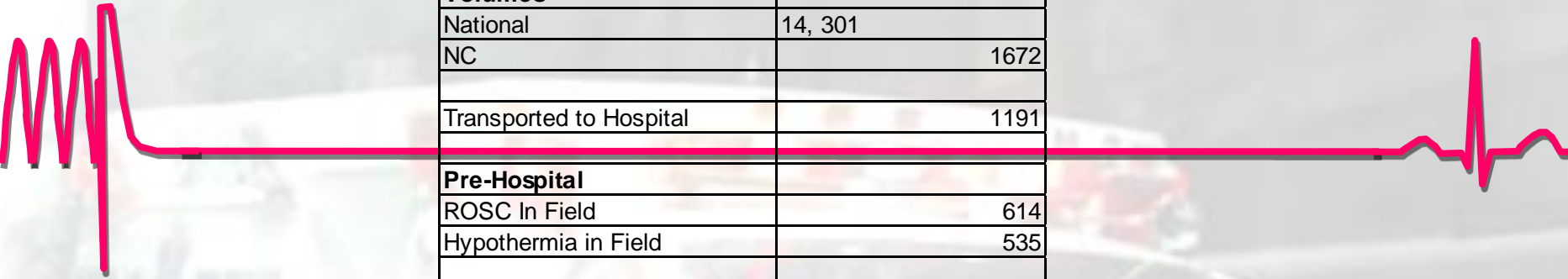


North Carolina CARES

Cases Transported to the Hospital

Year to Date: 2012
September 26, 2012





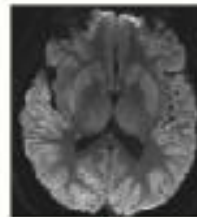
Volumes	
National	14, 301
NC	1672
Transported to Hospital	1191
Pre-Hospital	
ROSC In Field	614
Hypothermia in Field	535
ED	
Dead in ED	270
Ongoing Resus in ED	864
Admitted to Hospital	364
In-hospital	
STEMI	
Yes	84
No	291
Unknown	502
Blank	314
MI	43
Hypothermia in Hospital	194
Angio	60
Stent	26
ICD	26
CABG	1
Outcomes	
Died in Hospital	144
DC Alive	149
DC Neuro Intact	125
DNR during Stay	69
Incomplete Cases	298



INTCAR:

- International Registry for Cardiac Arrest Registry
- <http://www.intcar.org/>
- is a joint venture of hospitals, research societies and individuals dedicated to improving post-resuscitation care for cardiac arrest survivors.
- allows members to participate in research groups of their own design and choosing

Neuroimaging



Cardiology



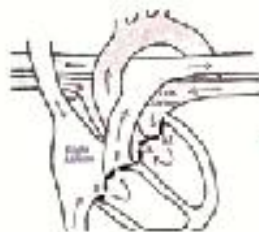
Seizures and EEG



Methods/ Complications



Prognostication

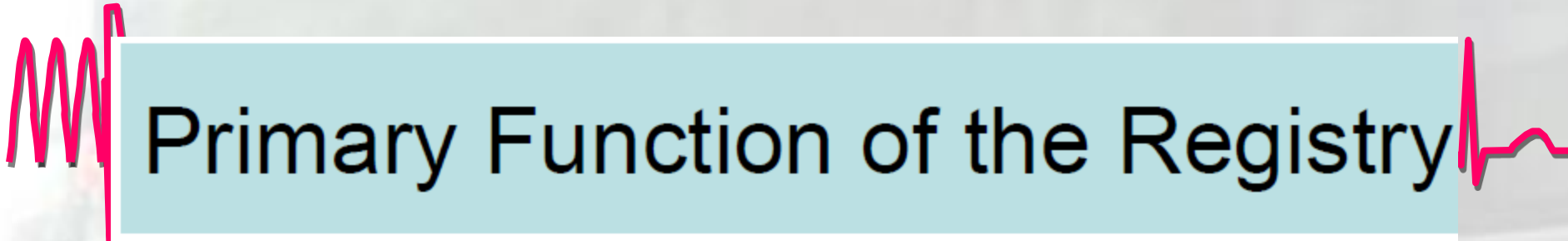


Hemodynamics



Core Set:

- 108 data elements
- 2 hours to abstract and enter
- Clinical abstractor
- Subset Example:
 - The Cardiology group was developed to evaluate the relationship between cardiac features of cardiac arrest and outcome, and was founded in 2009.



Primary Function of the Registry

- Collect data
 - HOW and on WHOM is hypothermia being performed after Cardiac Arrest
 - Characteristics of the patients
 - Utilization of PCI, EEG, MRI, etc
 - Outcomes
- Return reports to member institutions for internal QI purposes, compare outcomes and practices to norms within the registry

Secondary Functions

- Research within the registry
 - Requires approval and cooperation of the steering committees
- “Networking” function to connect centers
 - Research groups
 - Provide support for new sites

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doi: 10.1111/j.1399-4076.2009.02021.x

Outcome, timing and adverse events in therapeutic hypothermia after out-of-hospital cardiac arrest

N. NIELSEN^{1,2}, J. HOVDENR³, F. NILSSON⁴, S. RUTBERGSON⁵, P. STAMMET⁶, K. SØNCE⁷, F. VALBON⁸, M. WANSCHER⁹ and H. FIMBERG^{1,10}, for the Hypothermia Network
¹Department of Clinical Sciences, Lund University, Lund, Sweden; ²Departments of Anaesthesiology and Intensive Care, Helsingborg Hospital, Helsingborg, Sweden; ³Rikshospitalet, Oslo, Norway; ⁴Competence Center for Clinical Research, Lund University, Lund, Sweden; ⁵Uppsala University Hospital, Uppsala, Sweden; ⁶Centre Hospitalier de Luxembourg, Luxembourg, Luxembourg; ⁷Department of Anaesthesiology and Intensive Care, University Hospital, Oslo, Norway; ⁸Department of Anaesthesiology and Intensive Care, University Hospital, Lund, Sweden; ⁹Rigshospitalet, Copenhagen, Denmark and ¹⁰Sweden and Lund University Hospital, Lund, Sweden



INTCAR Commitment

- Identify a principle investigator and data coordinator
- Report ALL unconscious patients admitted to your ICU, ICU group, or hospital with a primary diagnosis of cardiac arrest*
 - Even if not treated with hypothermia
- PI should maintain contact with INTCAR administrator, and must take responsibility for high quality data entry

Registration

- Go to the INTCAR or the Neurocritical Care Society website and follow registration instructions
- Seek exemption from local IRB to enter fully de-identified patient data
- Administrator will contact you by email, conduct a brief telephone interview, and provide you with a logon and password
- Review the “test patient” field
- Discuss data questions with administrator
- Begin entering patient data for ALL comatose survivors of cardiac arrest admitted to your institution

Database Management

- Submit to INTCAR
- Develop a standing database to pull data back locally
- Develop reports to be generated for Quality Improvement
- Research questions addressed by query
- May add fields locally

Community Reporting:





Public Health Crisis:

- have significant impacts on community health, loss of life, and on the economy
- Need transparency of data
- Creates accountability
- Can help leverage resources



HOME

ABOUT

PARTICIPATE

REPORTS



HeartRescue
PROJECT

Every Second Counts. Every Action Matters.

Community SCA
Response Guide



VIEW ONLINE

Learn About Our Partners



Detailed, reliable data on sudden cardiac arrest

Welcome

Welcome to the
HeartRescue Project
treated and managed

The Data Bank

- Publicly stat
- A common s
- A commitme

This site is designed to bring SCA data to your fingertips, presenting it in context with both major risk factors such as heart disease and diabetes and demographic information such as household income.

If your community is participating in this program and sharing its data, you can view information such as the

Home page for the Data Bank.

This site links to the
www.heartrescueproject.com and will
be reached by links on that site

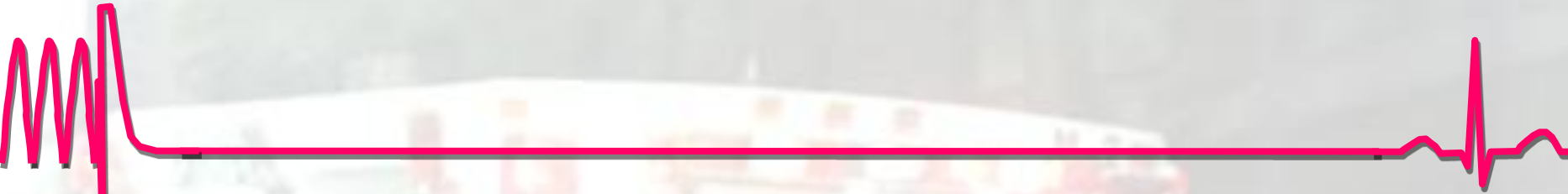
	Massachusetts: Plymouth
Demographics	
1. Median Age	40.9
2. Median Household Income	72,634
3. Percent of Population with Bachelors Degree or Higher	32.5%
4. Population	494,919
5. Population Density	750.9
Out-of-Hospital Cardiac Arrest Response	
Bystander	
6. Bystander CPR	28
7. Bystander CPR - Rate	39.0%
8. Witnessed Events - Bystander	71
Pre-Hospital	
9. Arrests - Cardiac etiology	291
Hospital	
10. Treatment Provided - Number	76

This table of data
is display
(continued on next
slide.)

Hospital	
10. Treatment Provided - Number	76
Risk Factors	
11. Cardiovascular Deaths (per 100,000 population)	241.3
12. Diabetes Prevalence Rate	8.3%
13. Heart Attack Prevalence Rate	5.1%
14. Heart Disease Prevalence Rate	4.2%
15. Obesity Prevalence Rate	23.1%
16. Smoking Rate (percent of adults that smoke)	19.9%
Survival	
17. Events - VT / VF	119
18. Shockable Rhythm Survival Rate	46.0%
19. Survival Rate - Overall	26.5%
20. Survivors, Total	77

Data Notes

1. Source: U.S. Census Bureau American Fact Finder
2. Source: U.S. Census Bureau American Fact Finder
3. Source: U.S. Census Bureau American Fact Finder



	Massachusetts: Hampshire	Massachusetts: Plymouth
Demographics		
1. Median Age	36.2	40.9
2. Median Household Income	59,591	72,634
3. Percent of Population with Bachelors Degree or Higher	42.4%	32.5%
4. Population	158,080	494,919
5. Population Density	299.8	750.9
Out-of-Hospital Cardiac Arrest Response		

A county to county(s) comparison would list the data side by side where it is available.

You can compare up to four counties.

		Compared with counties in the same Median Age quartile		
	Massachusetts: Plymouth	Low	Median	High
Demographics				
1. Median Age	40.9	37.4	39.8	41.0
2. Median Household Income	72,634	14,916	41,007	95,563
3. Percent of Population with Bachelors Degree or Higher	32.5%	6.9%	32.1%	53.7%
4. Population	494,919	19,677	26,415	19,378,102
5. Population Density	750.9	3.4	5.9	4,704.8
Out-of-Hospital Cardiac Arrest Response				

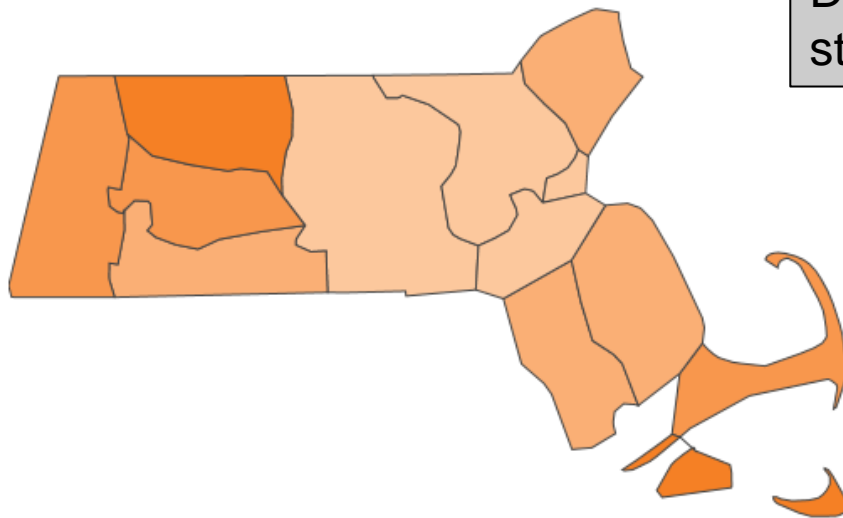
Comparison to a group of counties would compare it to the low, median and high value among that group. (There must be at least five counties in the group for data to appear in the comparison columns.)

Location

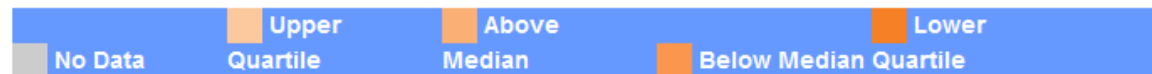
Massachusetts

Data

Out-of-Hospital Cardiac Arrest Response, Bystander: Bystander CPR



Data is displayed by quartile for the state.



Print

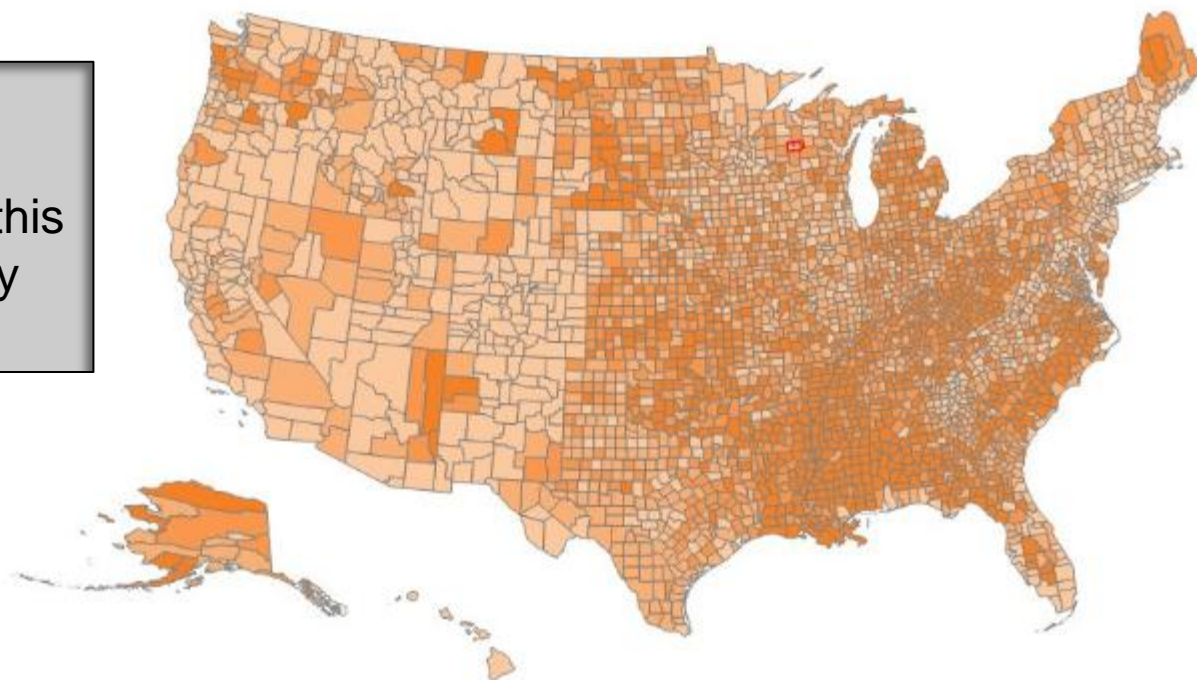
Location

United States

Data

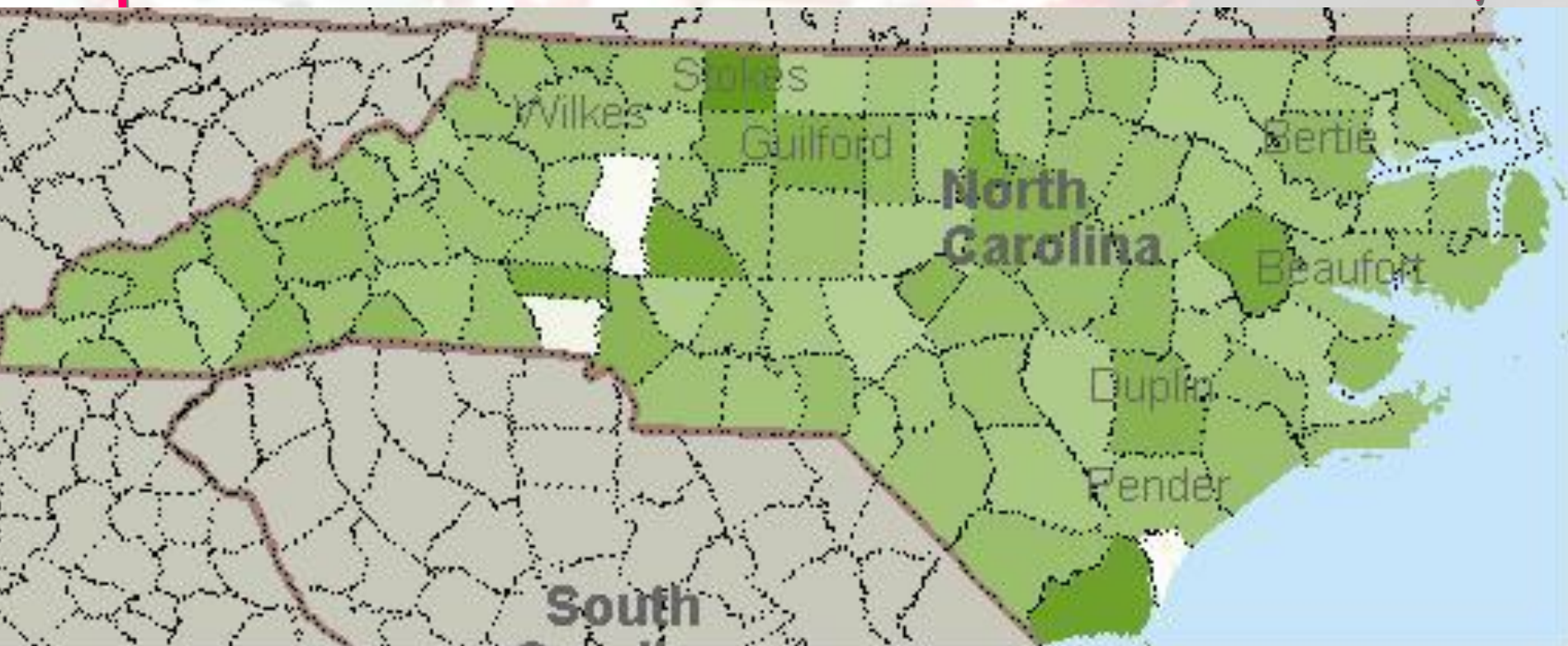
Risk Factors: Obesity Prevalence Rate

You can display risk factors by state or nationally – such as this example of obesity by county for the U.S.

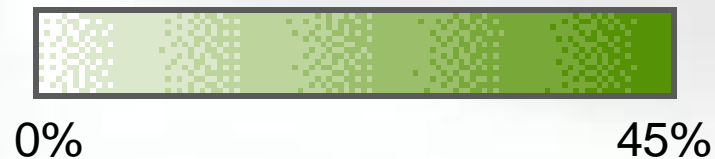


Print

Regional Trends



Utstein Style Survival Rates



Community Efforts:





Public Health Crisis:

- Have significant impacts on community health, loss of life, and on the economy
- Need transparency of data
- Creates accountability
- Can help leverage resources



North Carolina: RACE CARS



- Challenges
 - EMS response times vary from 4-10 minutes, rural communities even longer
 - Victim's need CPR started within 4 minutes or brain damage begins to occur
 - At 10 minutes, without CPR, survival is not likely
- You can help by learning:
 - Early recognition of SCA
 - Early Access – call 911
 - Early CPR



Cardiac Arrest Resuscitation System



Community Plans:

Goal: Increase the rate of bystander CPR and AED use

- Coordination by hospitals
 - Survey to understand what resources exist today
- Certification vs Education
 - AHA/Red Cross
 - RACE CARS developed materials
- AED devices – funding and identification
- Train all hospital employees of some level of CPR
- Train all heart patients and families on discharge

EMS, First Responders, and Hospitals will work together to off community education



Compression Only CPR:



- **Check**
 - If your victim is not responsive or breathing normally
- **Call 9-1-1**
- **Compressions**
 - Place victim on back on hard surface
 - Kneel next to victims side
 - Place heel of hand in center of chest
 - Place other hand on top and interlock fingers
 - Push hard, about 2 inches
- Push fast, as least 100/minute
- Switch every 2 minutes, it's very tiring

SO EASY A DOG CAN DO IT!





AED:

- If someone else is with you, get the AED while the other does CPR
- Open the AED and follow the prompts
- The AED was meant for untrained rescuers to operate



Strong Hearts for NC Youth

Our mission is to create a safe environment for our students, staff, and visitors in North Carolina (NC) public and private elementary, middle and high schools.

- Securing funding for an AED
- Placing an AED in the school
- Implementing an Emergency Action Plan (EAP) in each school to respond in case of an emergency
- Tracking AED status in all schools
- Sending monthly reminders to check the AED pad expiration date and battery life
- Reporting location of AED's to local 9-11 Centers

Community Updates:

- [House Bill 837](#) -passed
 - requires students to learn CPR
 - pass a test showing proficiency in order to graduate
 - Effective with the Class of 2015
- [House Bill 914](#) -passed
 - requires at least one AED in every state building
 - state workers must be trained to use them





VIDEO:

- What happened to this person?
- Describe the actions of the bystander.
- Who was the first responder
- When did EMS get there

Adult Chain of Survival



1. Immediate recognition of cardiac arrest and activation of the emergency response system
2. Early CPR with an emphasis on chest compressions
3. Rapid defibrillation
4. Effective advanced life support
5. Integrated post–cardiac arrest care



Summary:

- Search the web address
- Click directly on the RACE CARS Icon
- Click on the tab menu across the top to access the information desired
- To access the document in the file, click directly on the wording
- Please send feedback to lisa.monk@duke.edu

Thanks for your time!



HeartRescue Flagship Premier Partner Program:

1st Chain: Community Response

- i. Early SCA Recognition
- ii. Early 911
- iii. Early and effective bystander CPR or CCC
- iv. Early Public Access to AED

2nd Chain: Pre-Hospital Response

- i. Enhanced dispatch
- ii. Enhanced/high performance CPR or CCC
- iii. Defibrillation care (e.g. one shock therapy for VF patients)
- iv. Pre-hospital hypothermia
- v. Drug delivery (e.g. Intra-osseous drug delivery)

3rd Chain: Hospital Response

- i. Patient triage to Resuscitation Center of Excellence
- ii. Hypothermia as indicated by local protocol
- iii. 24/7 Cath Lab
- iv. Patient indicated therapies provided (e.g. ICD, PTCA, stent, CABG)
- v. Post survival patient and family education and support

Improving outcomes in cardiac arrest

Conclusions:

- Cardiac arrest is common and the third leading cause of death.
- Victims of out of hospital cardiac arrest are unlikely to survive
- Simple interventions in the chain of survival are likely to improve survival
- Data drives change

**USE YOUR CARES DATA
TO IT'S FULL POTENTIAL!**



Let's make NC the best
place in the country
to have a heart attack
or a cardiac arrest!







RESOURCES:

RACE CARS Website

<https://cee.dcri.duke.edu/>

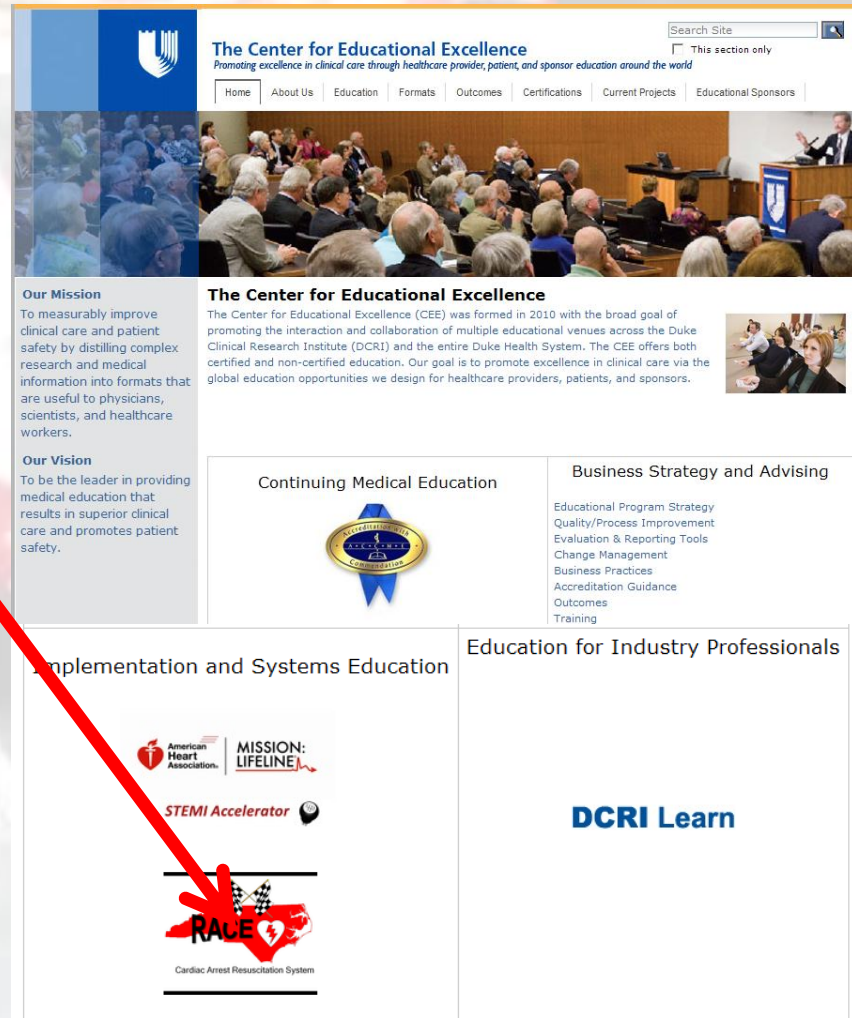


Every Second Counts. Every Action Matters.



Search: <https://cee.dcri.duke.edu/>

- This is the Home Page
- Scroll down to find the RACE Logo
- Click on the RACE Logo at the bottom of the page
- This will take you into the RACE Project site



RACE CARS Home Page:

- **RACE Home**
 - provides an overview of the project
- At the top of the screen is a menu:
 - Click on each tab to access the information
- At the bottom of the screen is a:
 - Heart Rescue Public Service Announcement
 - Heart Rescue links for Twitter and Facebook

The screenshot shows the RACE CARS Home Page. A red line and arrow point from the title to the top navigation menu, which includes links for Home, The Team, Our Approach, Upcoming Meetings, Operations Manual, Training Videos, and Resources. Another red arrow points from the text 'At the top of the screen is a menu:' to the same menu. A third red arrow points from the text 'At the bottom of the screen is a:' to the bottom section of the page, which contains a video player for a 'Sudden Cardiac Arrest Public Service Announcement' and social media icons for Facebook and Twitter. The main content area features a large graphic of the state of North Carolina with the word 'RACE' and a heart with a lightning bolt, and the text 'Cardiac Arrest Resuscitation System'. Below this is a paragraph describing the RACE project and its goals, followed by another paragraph about the importance of cardiac arrest response and the RACE system's role.

RACE Home

RACE Cardiac Arrest Resuscitation System

The Regional Approach to Cardiovascular Emergencies (RACE) project is a North Carolina statewide system for providing rapid coordinated care of cardiovascular emergencies. Established in 2003, the RACE system incorporates quality improvement efforts of over 119 hospitals, 540 emergency medical agencies and thousands of health care providers working in a coordinated manner to provide timely and lifesaving care. Initially, the RACE system was developed to treat acute myocardial infarction. With an eventual goal to rapidly coordinate the treatment of all cardiovascular emergencies, our current phase called RACE CARS (Cardiac Arrest Resuscitation System) is focusing on out of hospital cardiac arrest.

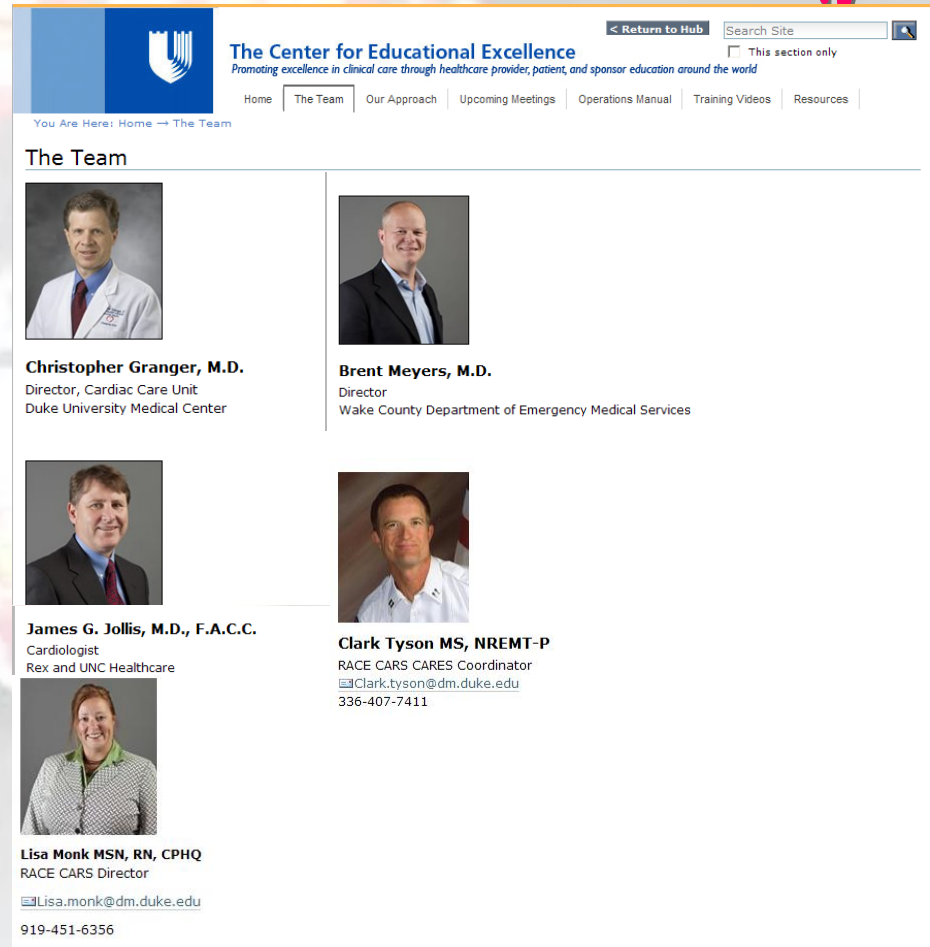
As the third leading cause of death, cardiac arrest claims 300,000 Americans lives each year. If witnessed, recognized and treated with cardiopulmonary resuscitation (CPR), external defibrillation, and hospital post-arrest care, almost half of victims can survive and return to functional lives. Unfortunately, we currently fall well short of this goal in North Carolina, with only 1 in 5 victims receiving bystander CPR, and only 1 in 20 surviving to hospital discharge. Supported by the Medtronic Foundation HeartRescue Project, and hospitals and emergency medical systems throughout the state, we hope to double survival from cardiac arrest within 5 years.

Sudden Cardiac Arrest Public Service Announcement

Facebook Twitter

Click on the Team Tab:

- Provides the names of our NC RACE CARS Administrative Team
- Provides contact information:
 - for the CARES Coordinator and
 - Project Lead

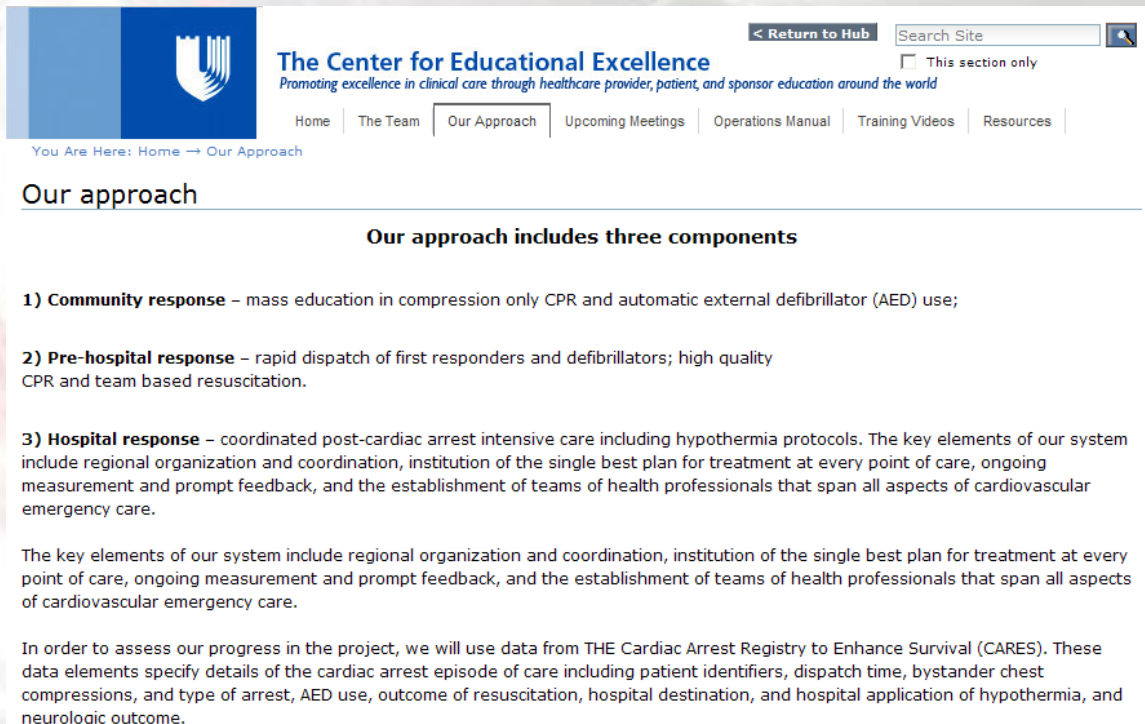


The screenshot displays the website for The Center for Educational Excellence. The header includes the center's logo, name, and tagline: "Promoting excellence in clinical care through healthcare provider, patient, and sponsor education around the world". A navigation menu lists: Home, The Team, Our Approach, Upcoming Meetings, Operations Manual, Training Videos, and Resources. A breadcrumb trail shows "You Are Here: Home → The Team". The main content area is titled "The Team" and features five team members, each with a portrait photo, name, title, and contact information.

Name	Title	Contact Information
Christopher Granger, M.D.	Director, Cardiac Care Unit Duke University Medical Center	
Brent Meyers, M.D.	Director Wake County Department of Emergency Medical Services	
James G. Jollis, M.D., F.A.C.C.	Cardiologist Rex and UNC Healthcare	
Clark Tyson MS, NREMT-P	RACE CARS CARES Coordinator	Clark.tyson@dm.duke.edu 336-407-7411
Lisa Monk MSN, RN, CPHQ	RACE CARS Director	Lisa.monk@dm.duke.edu 919-451-6356

Click the Our Approach Tab:

- Provides our approach to the project including:
 - Community
 - Pre-hospital
 - Hospital



The screenshot displays the website for The Center for Educational Excellence. The header features the organization's logo, name, and tagline: "Promoting excellence in clinical care through healthcare provider, patient, and sponsor education around the world". A navigation menu includes links for Home, The Team, Our Approach (which is highlighted), Upcoming Meetings, Operations Manual, Training Videos, and Resources. A search bar and a "Return to Hub" link are also present. The main content area is titled "Our approach" and lists three components: 1) Community response, 2) Pre-hospital response, and 3) Hospital response, each with a brief description of the approach.

The Center for Educational Excellence
Promoting excellence in clinical care through healthcare provider, patient, and sponsor education around the world

Home | The Team | **Our Approach** | Upcoming Meetings | Operations Manual | Training Videos | Resources

You Are Here: Home → Our Approach

Our approach

Our approach includes three components

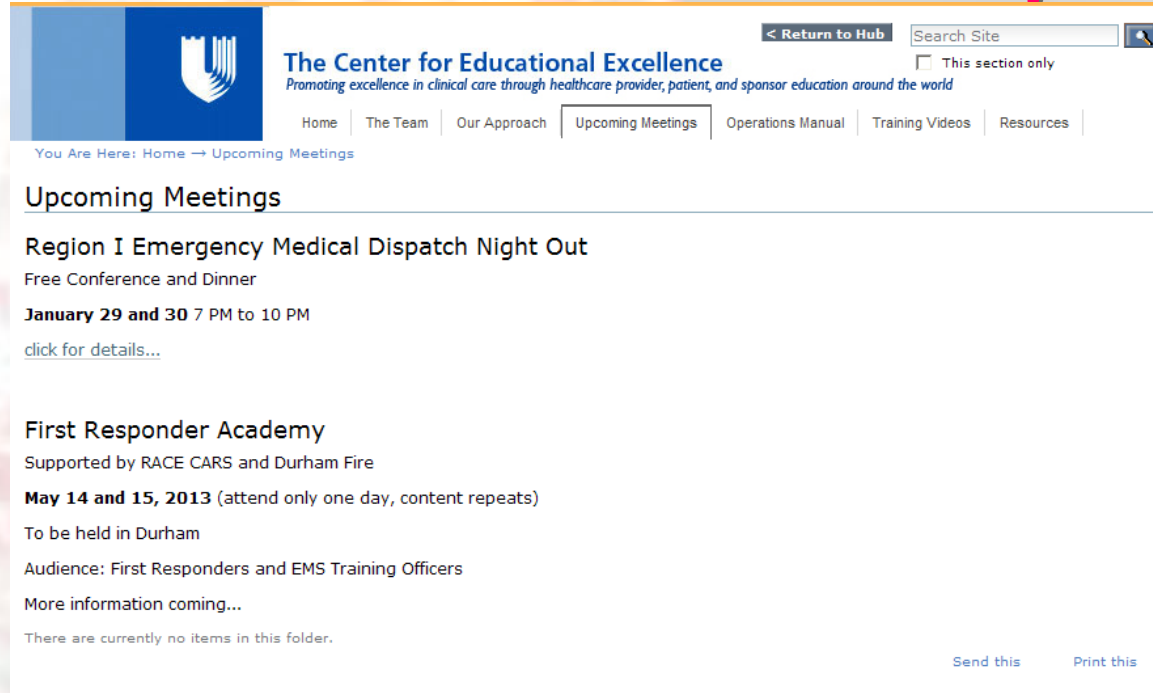
- 1) Community response** – mass education in compression only CPR and automatic external defibrillator (AED) use;
- 2) Pre-hospital response** – rapid dispatch of first responders and defibrillators; high quality CPR and team based resuscitation.
- 3) Hospital response** – coordinated post-cardiac arrest intensive care including hypothermia protocols. The key elements of our system include regional organization and coordination, institution of the single best plan for treatment at every point of care, ongoing measurement and prompt feedback, and the establishment of teams of health professionals that span all aspects of cardiovascular emergency care.

The key elements of our system include regional organization and coordination, institution of the single best plan for treatment at every point of care, ongoing measurement and prompt feedback, and the establishment of teams of health professionals that span all aspects of cardiovascular emergency care.

In order to assess our progress in the project, we will use data from THE Cardiac Arrest Registry to Enhance Survival (CARES). These data elements specify details of the cardiac arrest episode of care including patient identifiers, dispatch time, bystander chest compressions, and type of arrest, AED use, outcome of resuscitation, hospital destination, and hospital application of hypothermia, and neurologic outcome.

Click the Upcoming Meetings Tab:

- Provides information on upcoming meetings that RACE has planned or is involved with



The screenshot shows the website for The Center for Educational Excellence. The header includes the organization's logo, name, and tagline: "Promoting excellence in clinical care through healthcare provider, patient, and sponsor education around the world". A navigation menu contains links for Home, The Team, Our Approach, Upcoming Meetings (which is highlighted), Operations Manual, Training Videos, and Resources. A search bar is located in the top right corner. Below the navigation menu, a breadcrumb trail reads "You Are Here: Home → Upcoming Meetings". The main content area is titled "Upcoming Meetings" and lists two events: "Region I Emergency Medical Dispatch Night Out" and "First Responder Academy". Each event includes details about the date, time, and audience. At the bottom of the page, there are links for "Send this" and "Print this".

The Center for Educational Excellence
Promoting excellence in clinical care through healthcare provider, patient, and sponsor education around the world

[Home](#) | [The Team](#) | [Our Approach](#) | **[Upcoming Meetings](#)** | [Operations Manual](#) | [Training Videos](#) | [Resources](#)

[< Return to Hub](#)

☐ This section only

You Are Here: Home → Upcoming Meetings

Upcoming Meetings

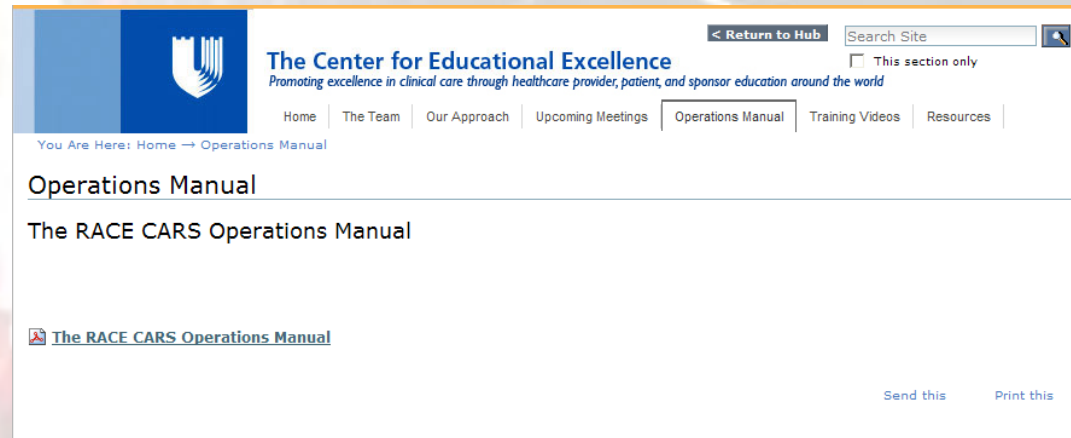
Region I Emergency Medical Dispatch Night Out
Free Conference and Dinner
January 29 and 30 7 PM to 10 PM
[click for details...](#)

First Responder Academy
Supported by RACE CARS and Durham Fire
May 14 and 15, 2013 (attend only one day, content repeats)
To be held in Durham
Audience: First Responders and EMS Training Officers
More information coming...
There are currently no items in this folder.

[Send this](#) [Print this](#)

Click the Operations Manual Tab:

- Provides a PDF of the Operations Manual
- The Manual is divided into sections:
 - Pre-hospital
 - Dispatch
 - First Responders
 - EMS
 - Hospital
 - Community
 - CPR Education and tracking
 - AED funding, placement, and location



Click the Training Videos Tab:

- Provides:
 - Instruction for using the videos,
 - Videos of topics
 - Copies of the power points used in the videos
 - Q&A to assure understanding of the topic
 - Certificate of completion for each topic
 - NCCOR Thank you is a summary of our work



The screenshot displays the website of The Center for Educational Excellence. The header includes the organization's name, a tagline, and a navigation menu with links to Home, The Team, Our Approach, Upcoming Meetings, Operations Manual, Training Videos (which is highlighted), and Resources. A search bar is also present. Below the navigation, a breadcrumb trail reads 'You Are Here: Home → Training Videos'. The main content area is titled 'Training Videos' and contains a list of nine topics, each with a blue underlined link. At the bottom of the list, there is a section titled 'NCCOR Thank you' with a message stating 'There are currently no items in this folder.' and two links: 'Send this' and 'Print this'.

The Center for Educational Excellence
Promoting excellence in clinical care through healthcare provider, patient, and sponsor education around the world

[Home](#) | [The Team](#) | [Our Approach](#) | [Upcoming Meetings](#) | [Operations Manual](#) | **[Training Videos](#)** | [Resources](#)

You Are Here: [Home](#) → [Training Videos](#)

Training Videos

Instructions for our training videos

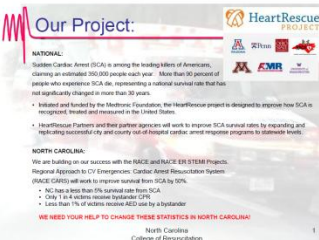
- [1. Overview and Latest Research on Out of Hospital Cardiac Arrest](#)
- [2. Dispatchers Role in Out of Hospital Cardiac Arrest](#)
- [3. First Responders Role in Out of Hospital Cardiac Arrest](#)
- [4. EMS Role in Out of Hospital Cardiac Arrest](#)
- [5. Review of North Carolina College of Emergency Physicians EMS Cardiac Protocols](#)
- [6. Unsuccessful Resuscitation of the Out of Hospital Cardiac Arrest Patient](#)
- [7. On Scene Resuscitation of the Out of Hospital Cardiac Arrest Victim](#)
- [8. Overview and Latest Research on Pre-hospital Hypothermia](#)
- [9. In Hospital Post Resuscitation Care: Hypothermia Therapy](#)

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Under Training Videos: click on the instruction for training videos wording

- Overview of project
- Table of Content
- Instructions for using the videos
- Link to the HeartRescue Website
 - Provides link to other partnering states and all of their resources
 - The HeartRescue Guidebook
 - PSA's
 - Resource links



Our Project: HeartRescue PROJECT

NATIONAL: Sudden Cardiac Arrest (SCA) is among the leading killers of Americans, claiming an estimated 350,000 people each year. More than 90 percent of people who experience SCA die, representing a national survival rate that has not significantly changed in more than 30 years.

- Initiated and funded by the Medtronic Foundation, the HeartRescue project is designed to improve how SCA is recognized, treated and responded to in the United States.
- HeartRescue Partners and their partner agencies will work to improve SCA survival rates by expanding and sustaining community and hospital-based cardiac arrest response programs to eliminate death.

NORTH CAROLINA: We are building on our success with the RACE and NAC's ERS SYSTEM Projects. Regional Approach to CV Emergencies: Cardiac Arrest Resuscitation System (RACE CARS) will work to improve survival from SCA by 50%.

- NC has a less than 1% survival rate from SCA.
- Only 1 in 4 victims receive bystander CPR.
- Less than 1% of victims receive AED use by a bystander.

WE NEED YOUR HELP TO CHANGE THESE STATISTICS IN NORTH CAROLINA

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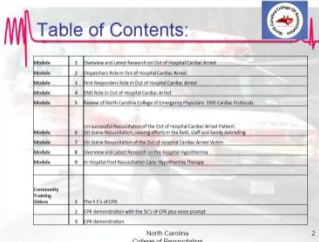
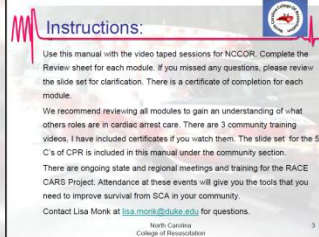


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Instructions:

Use this manual with the video taped sessions for NCCOR. Complete the Review sheet for each module. If you missed any questions, please review the slide set for clarification. There is a certificate of completion for each module.

We recommend reviewing all modules to gain an understanding of what others roles are in cardiac arrest care. There are 3 community training videos. I have included certificates if you watch them. The slide set for the 5 C's of CPR is included in this manual under the community section.

There are ongoing state and regional meetings and training for the RACE CARS Project. Attendance at these events will give you the tools that you need to improve survival from SCA in your community.

Contact Lisa Monk at lisa.monk@duke.edu for questions.

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Please visit the Heart Rescue Project website:
<http://www.heartrescueproject.com/index.htm>

Many of these materials were taken from our partners and adapted for this presentation. A special thanks to:

- The Medtronic Foundation Heart Rescue Project
- Our partners:
 - Allen Institute
 - Arizona
 - Minnesota
 - Pennsylvania
 - Washington

References:

- AHA 2010 Guidelines
- HeartRescue: A Community Response Planning Guide for SCA
- On the scene, when appropriate
- A minor published tool can be supplied upon request

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Under Training Videos:

Click on the first topic:

- Provides
 - The training video
 - The PowerPoint that is used in the video
 - A Review or Q&A to assure mastering of content
 - Certificate of completion

You Are Here: Home → Overview And Latest Research On Out Of Hospital Cardiac Arrest

Overview and Latest Research on Out of Hospital Cardiac Arrest

1. Overview and Latest Research on Out of Hospital Cardiac Arrest

Strategies for improving survival

- Medical leadership
- Community
 - Bystander CPR
 - Public access defibrillation
- 911 dispatch
 - Rapid first response
 - Dispatch assisted CPR
- EMS
 - High quality CPR
- Hospital
 - Specialized centers for treating post-cardiac arrest patients
 - Early post-cardiac treatment plan
 - Therapeutic hypothermia
 - Early hemodynamic optimization
 - AICD placement

Playlist: RACE NCCOR (9 videos)

Module 1:
Overview and Research
Review
Certificate

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