Who C.A.R.E.S.?

Why Should We Use the National Cardiac Arrest Registry to Enhance Survival

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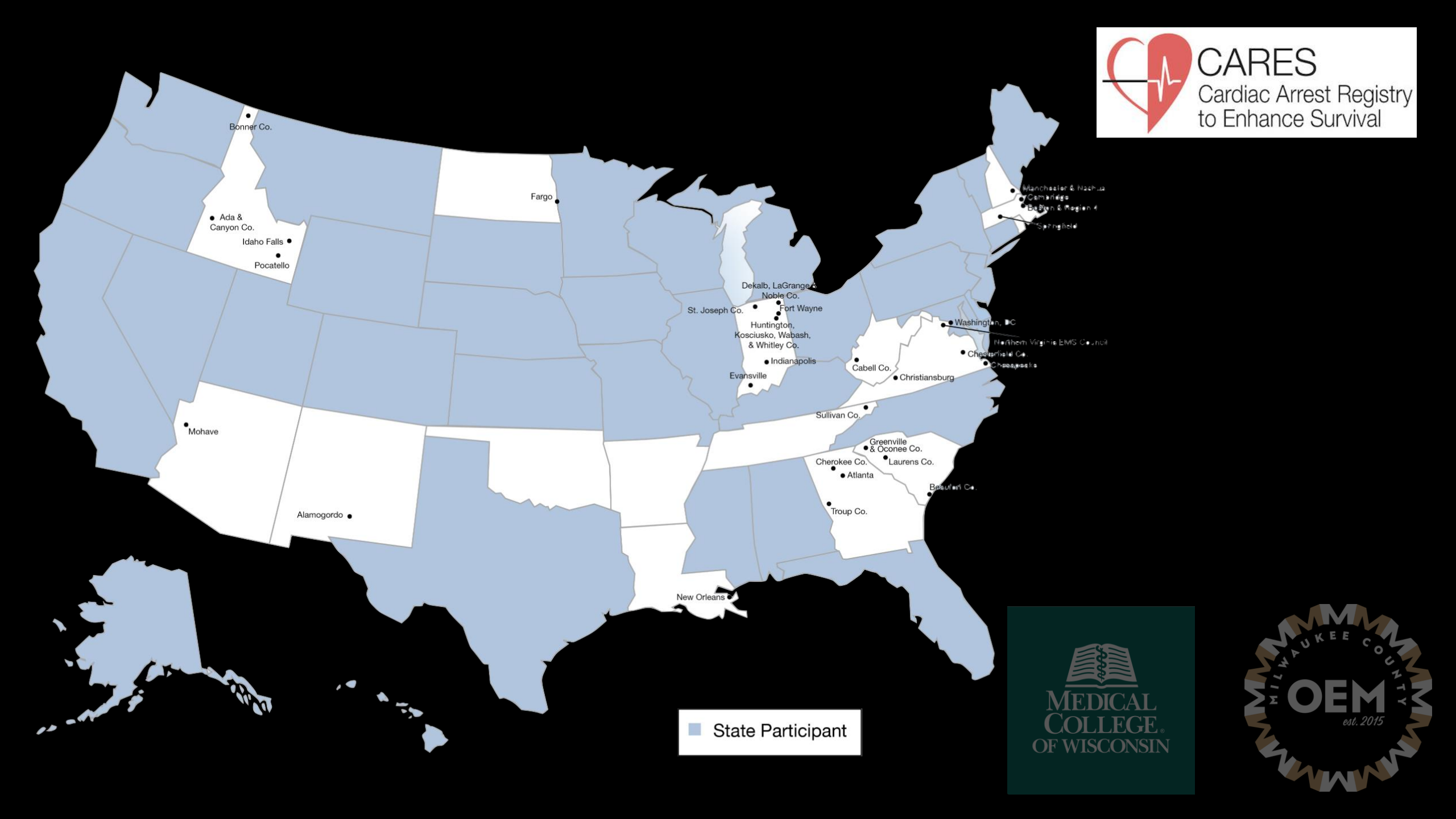
Milwaukee County EMS

@BenWWeston


CARES
Cardiac Arrest Registry
to Enhance Survival
Bonner Co.
Ada &
Canyon Co.
Idaho Falls
Pocatello
Fargo
Dekalb, LaGrange &
Noble Co.
St. Joseph Co.
Fort Wayne
Huntington,
Kosciusko, Wabash,
& Whitley Co.
Indianapolis
Evansville
Washington, DC
Cabell Co.
Christiansburg
Sullivan Co.
Greenville
& Oconee Co.
Cherokee Co.
Laurens Co.
Atlanta
Troup Co.
Mohave
Alamogordo
New Orleans
State Participant
MEDICAL
COLLEGE
OF WISCONSIN
MILWAUKEE COUNTY
OEM
est. 2015

Leverage your data internally…

and externally.

Cardiac Arrest Dashboard

CARES Public Facing Dashboard

Language translation coming soon

Data Notes & Resources

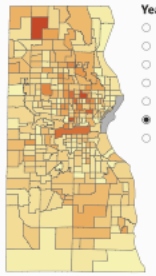
Year: All | Municipality: All | Fire Department: All | Clear all filters

Data with less than 5 cases are not shown to protect patient privacy.

Location of cardiac arrests

Map of where cardiac arrests are occurring in Milwaukee County

Rate per 100,000 residents by census tract



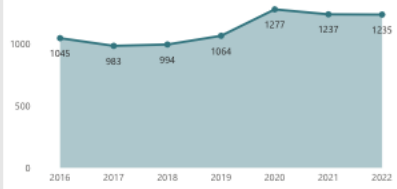
Year: 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022

Map of cardiac arrests | Municipality

Cardiac arrest incidents by year

Sudden cardiac arrest is a life-threatening emergency that occurs when the heart suddenly stops beating. A person who is experiencing cardiac arrest will be unresponsive and not breathing normally – often snoring or gasping. Sudden cardiac arrest can lead to death in minutes if life-saving care including chest compressions and defibrillation are not started immediately.

Total cardiac arrests that occurred by year



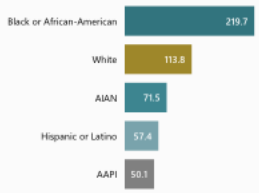
By Year | Fire Department | Hospital

Demographics of cardiac arrest patients (2020 - 2022)

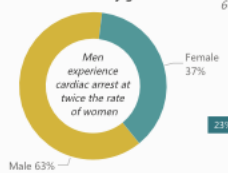
Select a year: 2020 | 2021 | 2022 *Select a municipality:* All

Cardiac arrest rate per 100,000 by race/ethnicity

Overall, there are 134.2 cardiac arrests per 100,000 residents in Milwaukee County per year

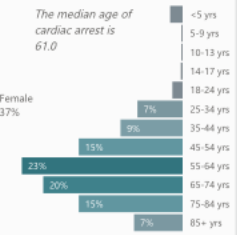


Percent of cardiac arrests by gender



Percent of cardiac arrests by age

The median age of cardiac arrest is 61.0

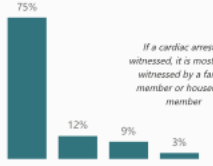


Only displaying years of complete demographic data 2020-2022. Some filter features are disabled to prevent identification of patients

Characteristics of the cardiac arrest event

Location where cardiac arrest occurred

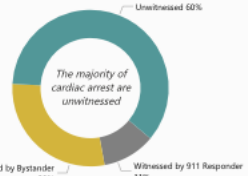
The most common place for a cardiac arrest to occur is in a home or residence.



If a cardiac arrest is witnessed, it is most likely witnessed by a family member or household member

Who witnessed the cardiac arrest

A witnessed cardiac arrest is one that is seen or heard by another person



Presenting cardiac rhythm type

AEDs can help fix shockable rhythms

Report created by the Milwaukee County Office of Emergency Management

Cardiac Arrest Dashboard

Data are refreshed annually

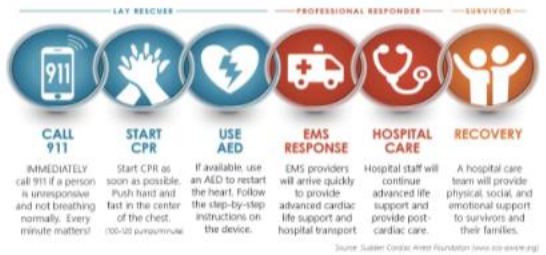
CARES Public Facing Dashboard

Data Notes & Resources

Year: All | Municipality: All | Fire Department: All | Clear all filters

Data with less than 5 cases are not shown to protect patient privacy.

You can help save a life by following the chain of survival!



Patients who received CPR by a bystander

During cardiac arrest, the heart cannot pump blood to the rest of the body causing brain damage within minutes. CPR uses chest compressions to mimic how the heart pumps, assisting blood and oxygen circulation throughout the body.

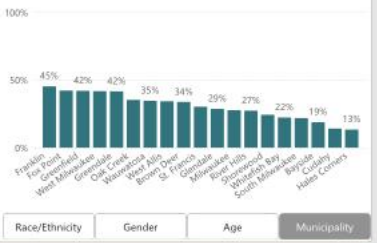
Percent of patients who received CPR from a bystander

If CPR is started before an ambulance arrives, the patient's chances of survival dramatically increase by 3 times.

29.2%

Overall rate

Percent of patients who received bystander CPR by municipality



Race/Ethnicity | Gender | Age | Municipality

Patients who had an AED applied by a bystander

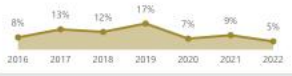
AEDs are used to help shock a heart back into a normal rhythm. For each minute defibrillation is delayed, the odds of survival are reduced by approximately 10%. Every AED provides clear instructions. The AED will also talk you through how to apply its sticky pads to the person's chest to assess the heart rhythm and safely provide a shock, if necessary.

Percent of patients who had an AED applied by bystander

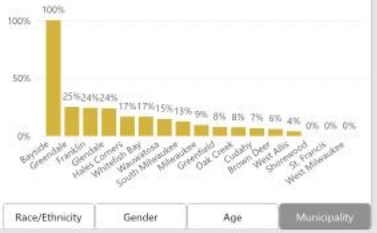
Reducing delays to defibrillation improves outcomes for patients in a shockable rhythm.

10.2%

Overall rate



Percent of patients who had an AED applied by municipality



Race/Ethnicity | Gender | Age | Municipality

Report created by the Milwaukee County Office of Emergency Management

Cardiac Arrest Dashboard

CARES Public Facing Dashboard

Data Notes & Resources

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Median EMS response time

Milwaukee County median response time by year (minutes)

Milwaukee County median response time

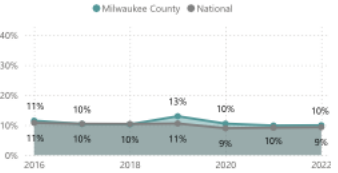
5.1

minutes

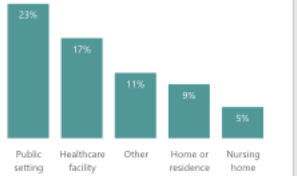
***Response time** is measured from when the ambulance is dispatched to arrival of the ambulance at the scene. Time from call receipt at dispatch center was not used as the starting time due to missing data*

Patient survival and outcomes

Percent of patients who survived their cardiac arrest to hospital discharge



Percent of patients who survived to hospital discharge by the location where their cardiac arrest occurred



Overall | Race/ethnicity | Gender | Age category

Survival outcomes | Cognitive outcomes | Survival by rhythm

Rate of survival by whether the patient received bystander CPR

Percent of patients who survived to hospital discharge by bystander CPR

CPR is a critical intervention that can save lives during a cardiac arrest. Early intervention of CPR and AED application by bystanders can significantly improve survival outcomes and prevent brain damage. It can literally make the difference between life and death.

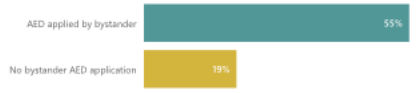
11%

National survival rate to hospital discharge for those who received CPR from a bystander

Rate of survival by whether an AED was applied by a bystander

Percent of patients who survived to hospital discharge by public AED use

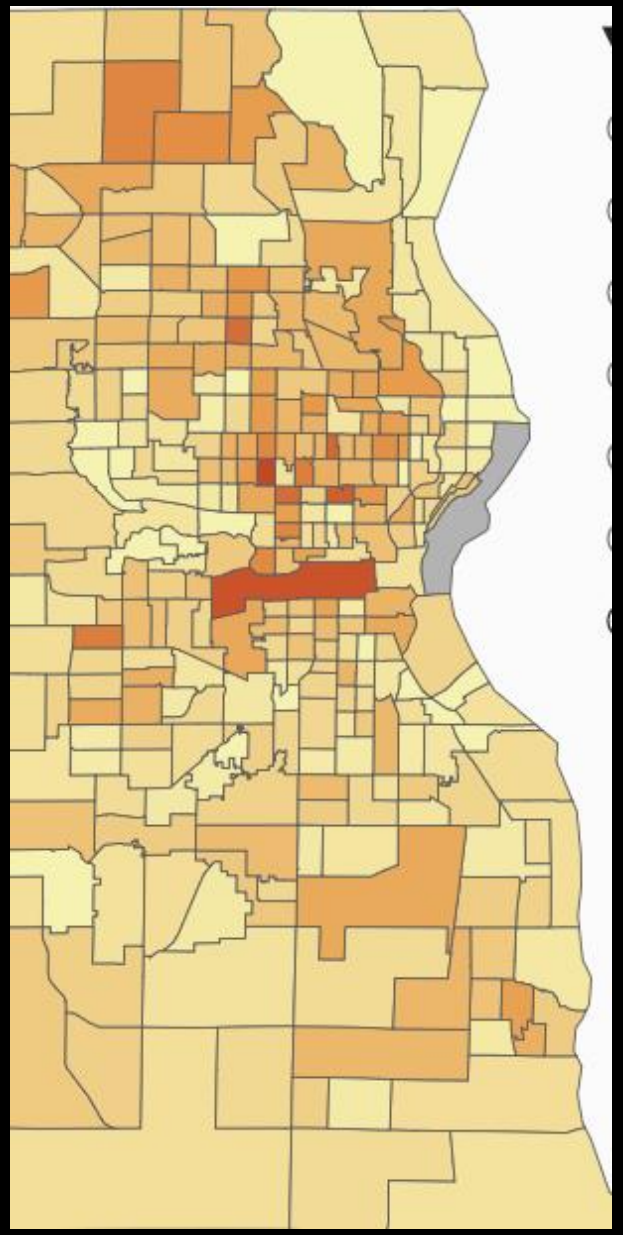
AEDs are designed to be user-friendly and designed for people with little or no medical training. Early defibrillation with an AED can restore a normal heart rhythm and significantly increase the chances of survival. For every minute that passes without defibrillation, the chances of survival decrease by approximately 10%.



44%

National survival rate to hospital discharge to those who received AED from a bystander

Report created by the Milwaukee County Office of Emergency Management



Location where cardiac arrest occurred

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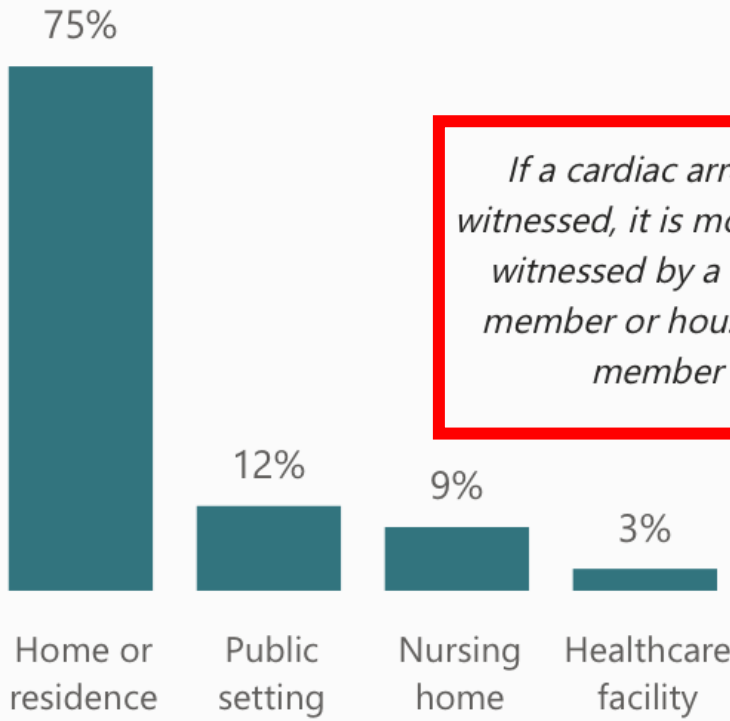

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Medical College of Wisconsin

Milwaukee County OEM est. 2015

Percent of patients who received CPR from a bystander

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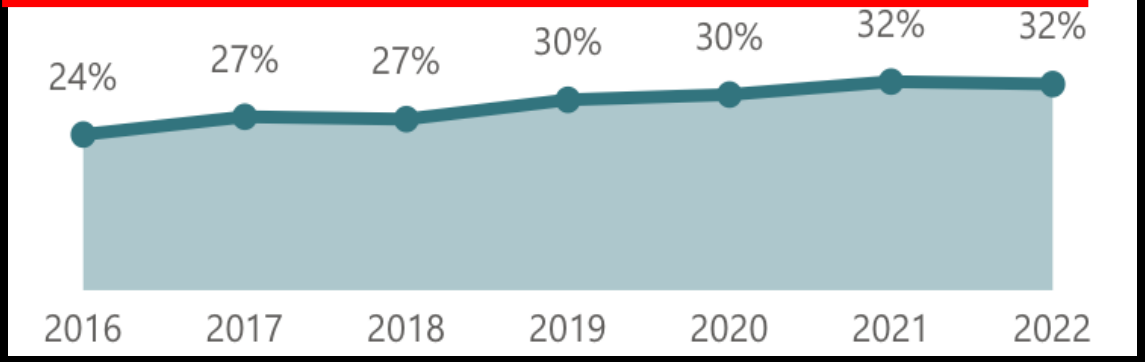
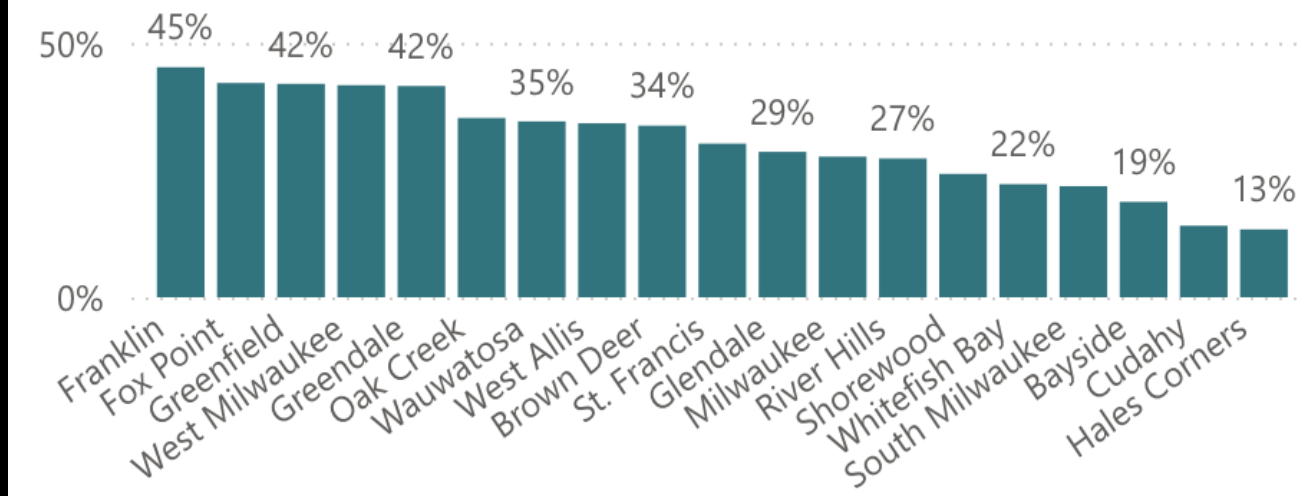


Percent of patients who received bystander CPR by municipality



MEDICAL COLLEGE OF WISCONSIN

MILWAUKEE COUNTY OEM est. 2015

You have the data

Use it

Share it

Thank you

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Milwaukee County EMS

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Heads up on CARES.

Survival for Nonshockable Cardiac Arrests Treated With Noninvasive Circulatory Adjuncts and Head/Thorax Elevation*

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José Labarère, MD, PhD[4]

Remle P. Crowe, PhD[5]

Lauren D. Emanuelson, RN, BS, EMT-P[6]

Charles J. Lick, MD[7]

Guillaume P. Debaty, MD, PhD[8]

Joseph E. Holley, MD, FACEP, FAEMS[9,10]

Ryan P. Quinn, BS, EMT-P[11]

Kenneth A. Scheppke, MD, FAEMS[12,13]

Paul E. Pepe, MD, MPH, FAEMS, MCCM, MACP, FACEP, FRCP[13–16]

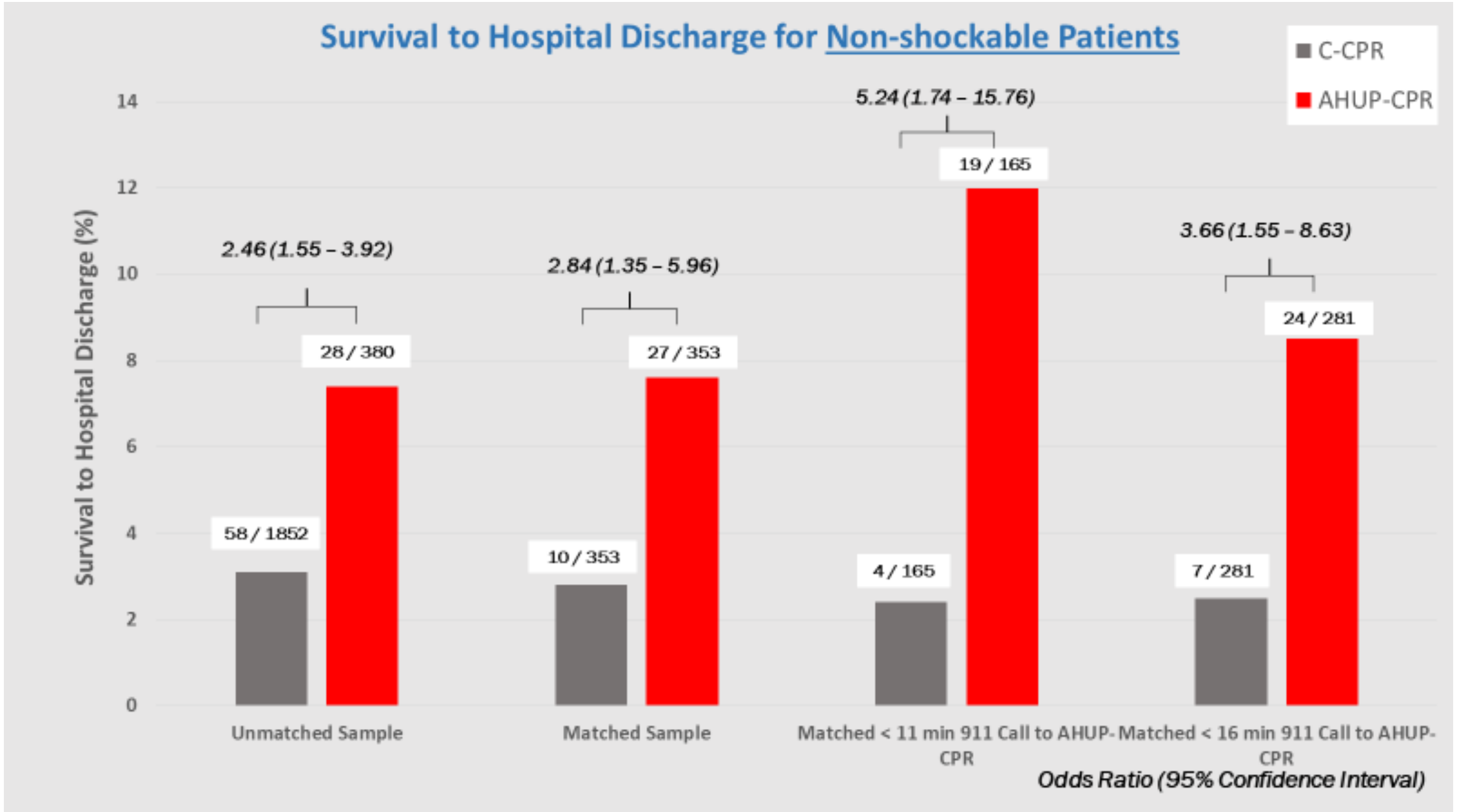
OBJECTIVES: Cardiac arrests remain a leading cause of death worldwide. Most patients have nonshockable electrocardiographic presentations (asystole/pulseless electrical activity). Despite well-performed basic and advanced cardiopulmonary resuscitation (CPR) interventions, patients with these presentations have always faced unlikely chances of survival. The primary objective was to determine if, in addition to conventional CPR (C-CPR), expeditious application of noninvasive circulation-enhancing adjuncts, and then gradual elevation of head and thorax, would be associated with higher likelihoods of survival following out-of-hospital cardiac arrest (OHCA) with nonshockable presentations.

DESIGN: Using a prospective observational study design (ClinicalTrials.gov NCT05588024), patient data from the national registry of emergency medical services (EMS) agencies deploying the CPR-enhancing adjuncts and automated head/thorax-up positioning (AHUP-CPR) were compared with counterpart reference control patient data derived from the two National Institutes of Health clinical trials that closely monitored quality CPR performance. Beyond unadjusted comparisons, propensity score matching and matching of time to EMS-initiated CPR (T_{CPR}) were used to assemble cohorts with corresponding best-fit distributions of the well-established characteristics associated with OHCA outcomes.

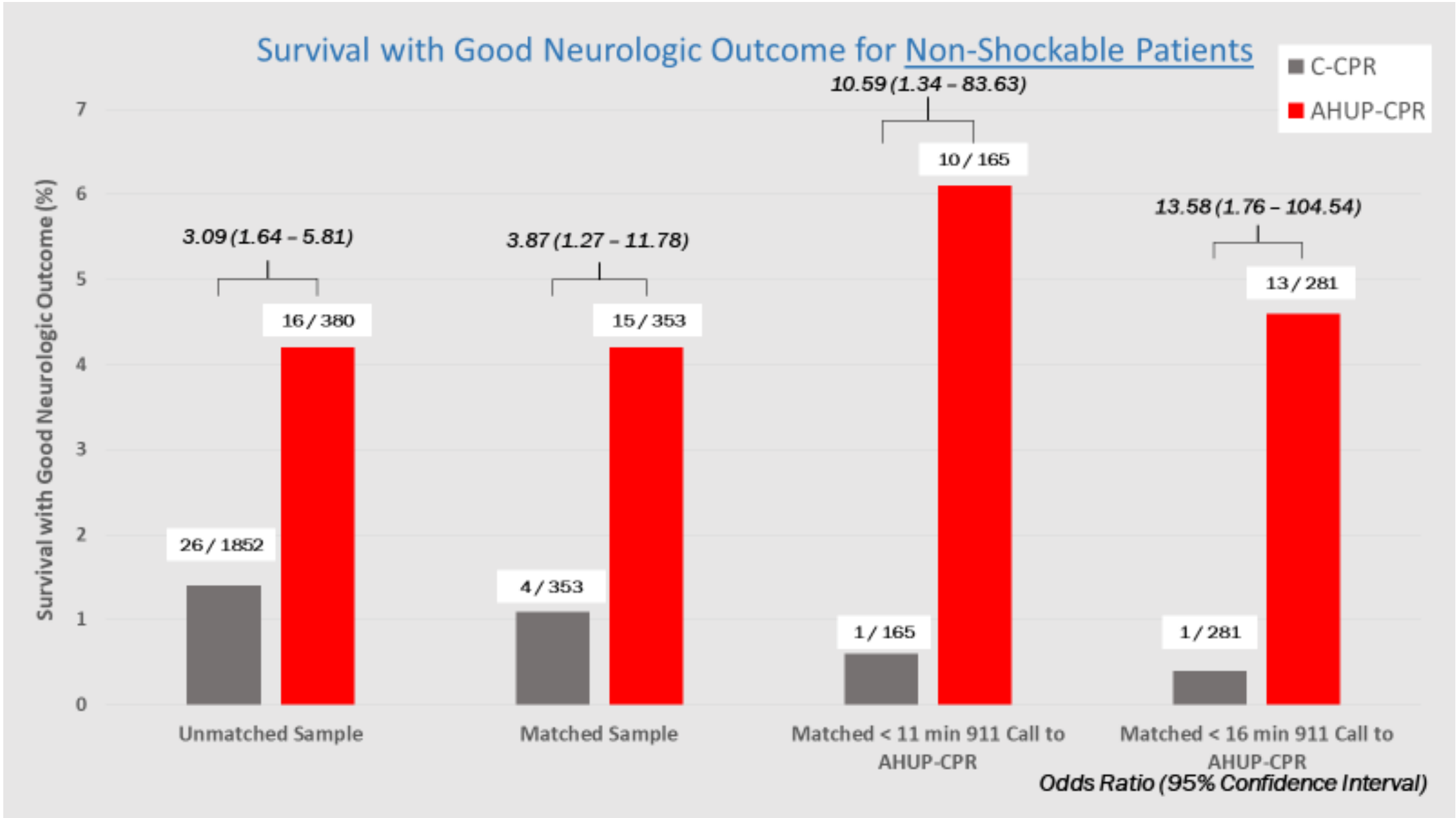
SETTING: North American 9-1-1 EMS agencies.

PATIENTS: Adult nontraumatic OHCA patients receiving 9-1-1 responses.

INTERVENTIONS: In addition to C-CPR, study patients received the CPR adjuncts and AHUP (all U.S. Food and Drug Administration-cleared).



Bachista et al. *Critical Care Medicine 2024*



Bachista et al. *Critical Care Medicine 2024*

PEA and Asystole OUTCOMES

PEA (Unadjusted) Neuro Intact Survival was 9.8%

9.8% vs 3.3% (p= 0.002)

Asystole (Unadjusted) Survival to Discharge was 4.1%

7 / 169 (4%) VS 10 / 668 (1.5%) (p=0.03)

even though 73% of NP-CPR were unwitnessed Asystole vs 59% for C-CPR controls

STAR RESEARCH PRESENTATION: MACHINES AMONG US

21: FUNCTIONAL SURVIVAL AFTER CARDIAC ARREST: IMPACT OF CPR ADJUNCTS COMBINED WITH HEAD/THORAX ELEVATION

Pepe, Paul[1]; Bachista, Kerry[2]; Moore, Johanna[3]; Goodloe, Jeffrey[4]; Pierce, Matthew[5]; Quinn, Ryan[6]; Cole, Jerome[7]; Williamson, Christopher[8]; Reynolds, James[9]; Siegel, Lewis[9]; Emanuelson, Lauren[10]; Antevy, Peter[11]; Crawford, W[12]; Holley, Joseph[13]; Scheppke, Kenneth[14]

Author Information

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Head Up CPR vs Conventional CPR (CARES): All adult OHCA patients

	Head Up-CPR Registry through 2022 St. Johns County FL, Peoria IL, Edina MN, Tuscaloosa AL, Germantown TN, Edmond OK, Chesapeake VA	CARES 2021/2022
# of Cases	1449	286,525
Sustained ROSC	29.4% (n=426) (range: 21-38%)	27.0% (n=77301)#
Survival to D/C% (#)	13.7% (n=183)(range: 8-17%)	9.2% (n=26,316)#
Survival with Good Neuro Outcome% (#)	10.4% (n=150)(range: 8-14%)	7.3% (n=20,889)##
# p<0.001 ##p<0.01	***42.5 % more intact survivors***	Bachista et al. NAEMSP 2024

Head Up CPR vs Conventional CPR (CARES): Witnessed shockable (Utstein) out-of-OHCA

	Head Up-CPR Registry through 2022	CARES 2021/2022
# of Cases	**221**	29,338
Sustained ROSC% (#)	**54.3% (n=120)(range: 42-58%)**	49.1% (n=14,407) #
Survival% (#)	**39.8% (n=n=88) (range: 35-54%)**	28.5% (4192) ##
Survival with Good Neuro Outcome% (#)	**35.3% (78) (range: 29-54%)**	25.1% (n=3692) ##
#p<0.02		
##p<0.001	***40.6 % higher intact survival***	**Bachista et al NAEMSP 2024**


more info coming
check back soon