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life is why®

ACHIEVING RESUSCITATION EXCELLENCE

Cherie' Boxberger is Regional VP of Quality & System Improvement for the SouthWest Affiliate of the American Heart Association. Cherie spent nearly 30 years in the healthcare arena including direct patient care, call center management and marketing & administration. Boxberger joined AHA in 2009 and leads Resuscitation and Heart Failure quality initiatives for the Southwest affiliate; as well as leading the QI team for Central and Rural Texas; Northern Colorado, Oklahoma and Wyoming.

She holds degrees from the University of Kansas including an MBA, a MS in Exercise Physiology, and BS in Exercise Science and is a Certified Professional in Healthcare Quality.

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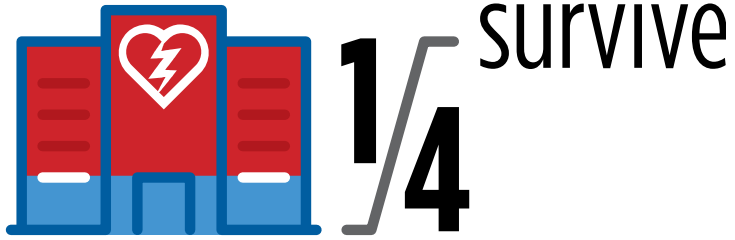
DISCLOSURES

FINANCIAL DISCLOSURE:
No financial relationships to disclose

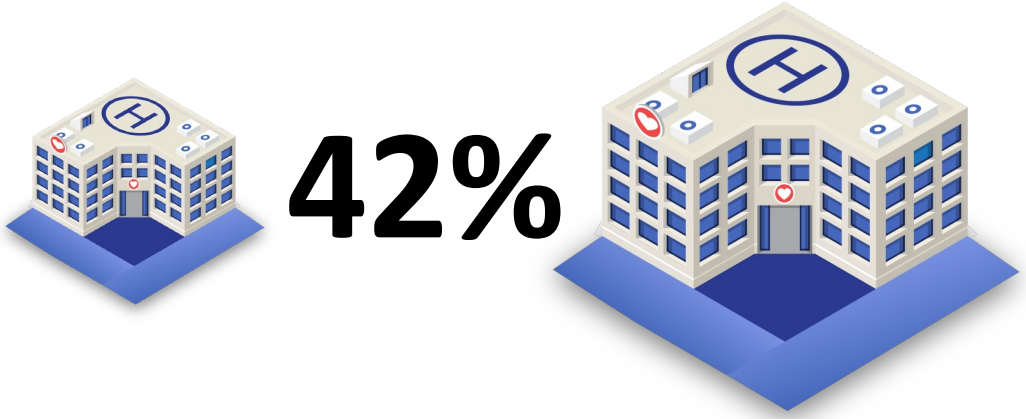
UNLABELED/UNAPPROVED USES DISCLOSURE:
None to disclose

200,000 cardiac arrests occur in US hospitals yearly

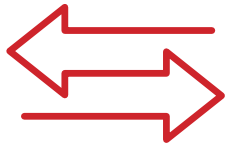
There is an unacceptable disparity in the quality of resuscitation



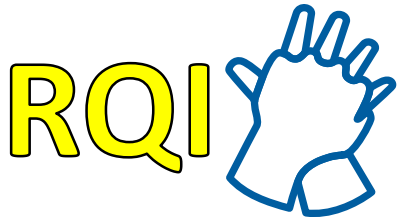
1/4 survive



42%



Hospitals are less likely to collect data on cardiac arrests and be certain all patients are receiving guideline based care



Rapid delivery of high-quality CPR is the greatest determinant of survival from cardiac arrest

*Data gathered from AHA GWTG Resuscitation Hospitals across the country

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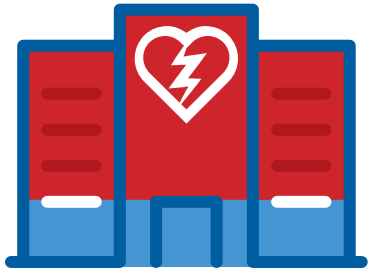
In-Hospital Cardiac Arrests

200,000 cardiac arrests
occur in US hospitals yearly



1/4 survive

There is an unacceptable disparity in the quality of resuscitation

- 42% difference in the odds of survival for patients at similar hospitals, with a similar case-mix

Hospitals are less likely to collect data on cardiac arrests and be certain all patients are receiving guideline based care.

RQI

Rapid delivery of high-quality CPR is the greatest determinant of survival from cardiac arrest

*Data gathered from AHA GWTG Resuscitation Hospitals across the country

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Goal: Increase Survival to Discharge

1. Decreasing Time to Defibrillation
2. Decreasing Unmonitored/Unwitnessed Arrests
3. Decreasing Time to Chest Compressions
4. Decreasing Time to Epinephrine
5. Requiring Confirmation of Endotracheal Tube Placement
6. Improving CPR Quality (RQI)

As a Healthcare Professional, You're Committed to Continuous Quality Improvement. We're Committed to Supporting Your Efforts.

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WHERE IS YOUR HOSPITAL'S CODE-BLUE DATA?

DO YOU KNOW HOW YOU'RE DOING?

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HOSPITAL PROCESS PERFORMANCE IMPACTS SURVIVAL

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Original Investigation

Association Between Hospital Process Composite Performance and Patient Outcomes After In-Hospital Cardiac Arrest Care

Monique L. Anderson, MD, MHS; Graham Nichol, MD, MPH; David Dai, PhD; Paul S. Chan, MD, MSc; Laine Thomas, PhD; Sana M. Al-Khatib, MD, MHS; Robert A. Berg, MD; Steven M. Bradley, MD, MPH; Eric D. Peterson, MD, MPH; for the American Heart Association's Get With the Guidelines–Resuscitation Investigators

- Is IHCA survival variation due to differences in quality of care?
- GWTG-R 35,282 adults at 261 hospitals 2010-2012
- Calculated hospital composite performance score using 5 AHA guideline-recommended process measures and divided scores into quartiles

  Monitored, witnessed | Time to CPR | Time to epi | Time to defib | ETT confirmation
- Scores by quartile were associated with risk standardized survival rates and neurological status

Anderson, JAMA Cards, 2016

Figure 1. Hospital Process Composite Performance Scores

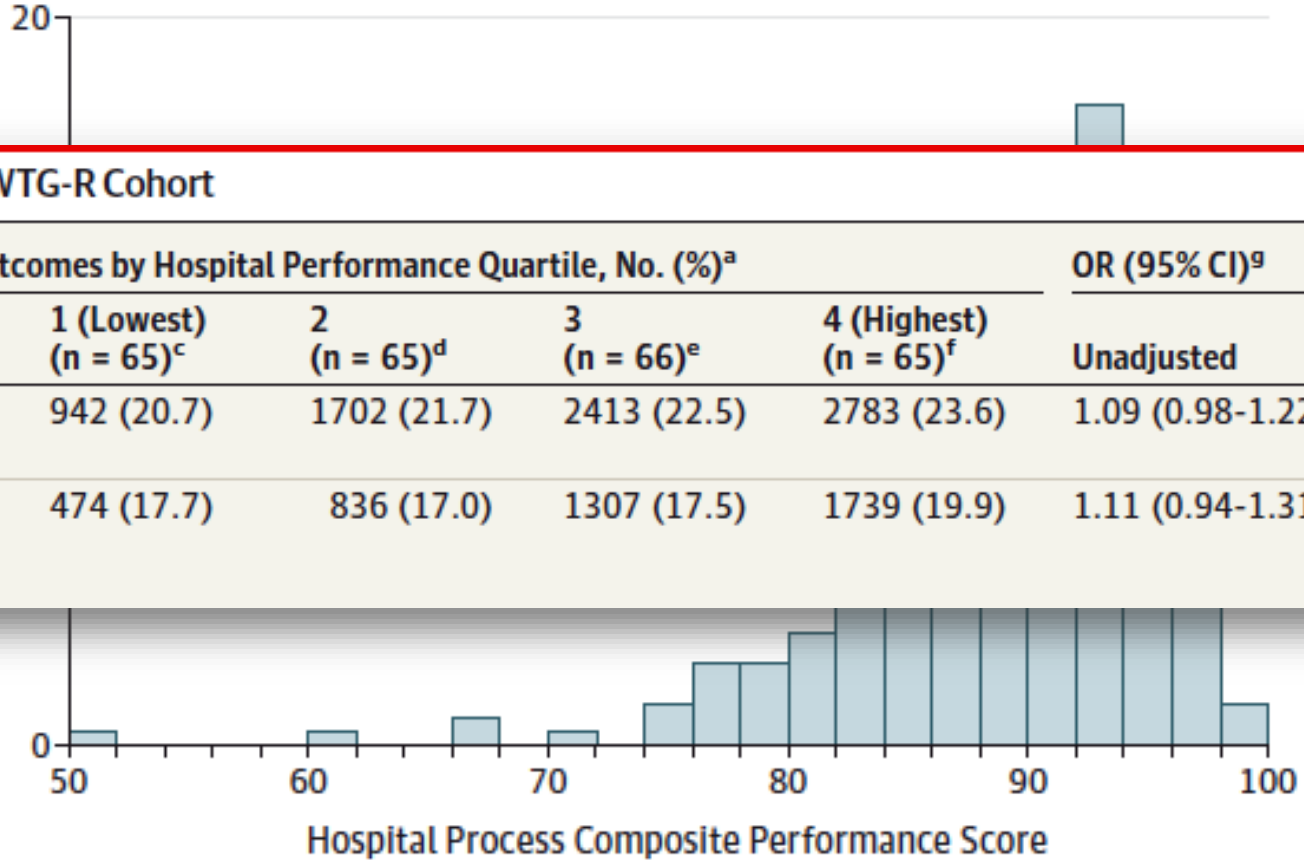

Table 4. Outcomes of IHCA for GWTG-R Cohort

Outcome	Unadjusted Outcomes by Hospital Performance Quartile, No. (%)[a]					OR (95% CI)[g]		
	Overall (n = 261)[b]	1 (Lowest) (n = 65)[c]	2 (n = 65)[d]	3 (n = 66)[e]	4 (Highest) (n = 65)[f]	Unadjusted	Adjusted	*P* Value
Survival to discharge	7840 (22.4)	942 (20.7)	1702 (21.7)	2413 (22.5)	2783 (23.6)	1.09 (0.98-1.22)	1.22 (1.08-1.37)	.001
Favorable neurologic status (CPC 1 or 2)[h]	4356 (18.3)	474 (17.7)	836 (17.0)	1307 (17.5)	1739 (19.9)	1.11 (0.94-1.31)	1.32 (1.11-1.58)	.003

 Anderson, JAMA Cards, 2016

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TIME TO DEFIBRILLATION MATTERS

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The NEW ENGLAND JOURNAL of MEDICINE

ESTABLISHED IN 1812 JANUARY 3, 2008 VOL. 358 NO. 1

Delayed Time to Defibrillation after In-Hospital Cardiac Arrest

Paul S. Chan, M.D., Harlan M. Krumholz, M.D., Graham Nichol, M.D., M.P.H., Brahmajee K. Nallamothu, M.D., M.P.H., and the American Heart Association National Registry of Cardiopulmonary Resuscitation Investigators*

ABSTRACT

BACKGROUND

Expert guidelines advocate defibrillation within 2 minutes after an in-hospital cardiac arrest caused by ventricular arrhythmia. However, empirical data on the prevalence of delayed defibrillation in the United States and its effect on survival are limited.

METHODS

We identified 6789 patients who had cardiac arrest due to ventricular fibrillation or pulseless ventricular tachycardia at 369 hospitals participating in the National Registry of Cardiopulmonary Resuscitation. Using multivariable logistic regression, we

From Saint Luke's Mid-America Heart Institute, Kansas City, MO (P.S.C.); the University of Michigan Division of Cardiovascular Medicine, Ann Arbor (P.S.C., B.K.N.); the Section of Cardiovascular Medicine and the Robert Wood Johnson Clinical Scholars Program, Department of Medicine, and the Section of Health Policy and Administration, Department of Epidemiology and Public Health, Yale University School of Medicine, and the Center for

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EFFECT OF RESUSCITATION ERRORS

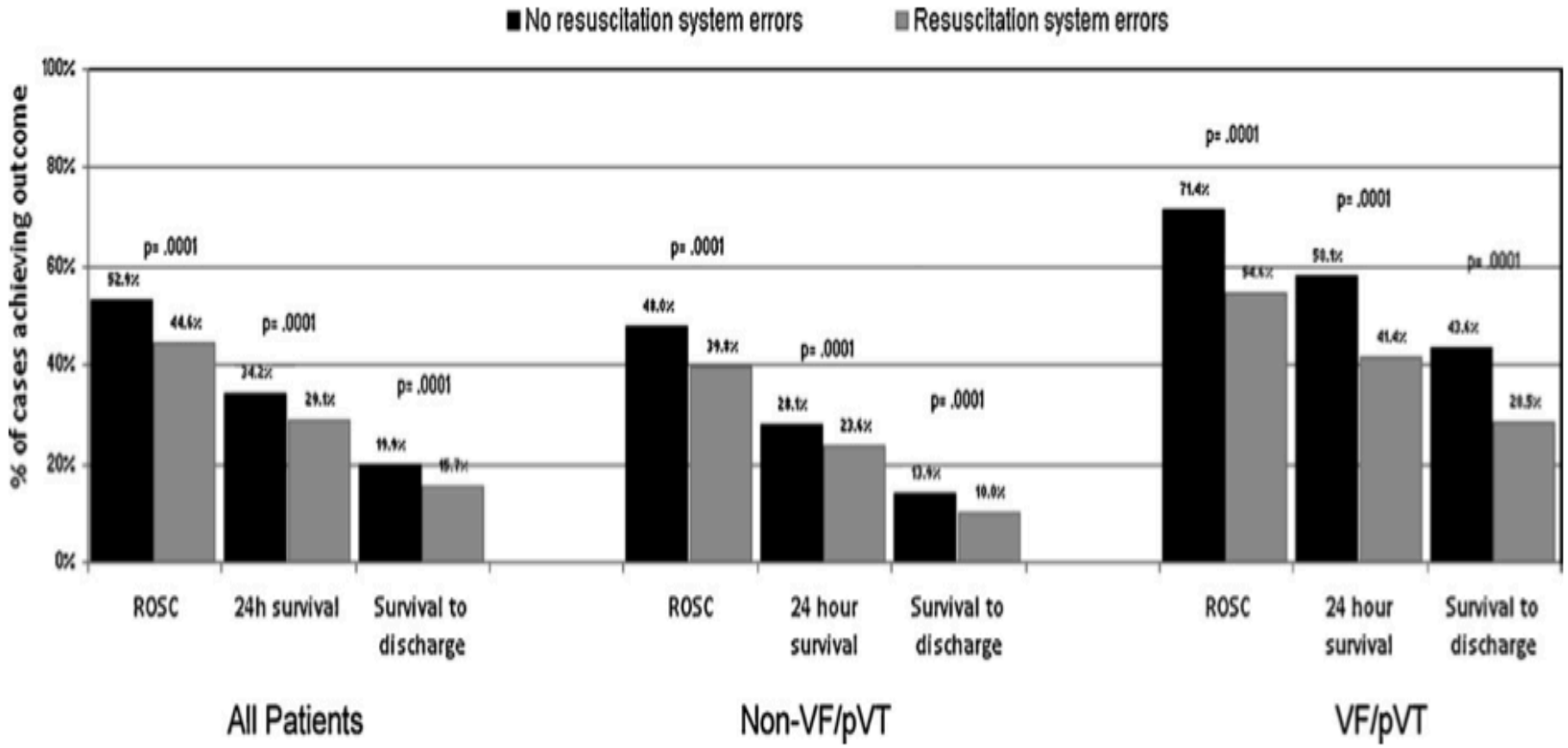

Fig. 1. Effect of any resuscitation system errors on an IHCA event and the rate of ROSC, survival for 24 h, and survival to hospital discharge for all patients and those with an initial documented IHCA rhythm of non-VF/pVT and VF/pVT.

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DELAYED DEFIBRILLATION OCCURRED IN 2045 PATIENTS (30.1%)

Delayed defibrillation was associated with a significantly lower probability of surviving to hospital discharge (22.2%, vs. 39.3% when defibrillation was not delayed; adjusted odds ratio, 0.48; 95% confidence interval, 0.42 to 0.54; P<0.001)

A graded association was seen between increasing time to defibrillation and lower rates of survival to hospital discharge for each minute of delay (P for trend <0.001)

CHARACTERISTICS ASSOCIATED WITH DELAYED DEFIBRILLATION INCLUDED:

- black race
- noncardiac admitting diagnosis
- occurrence of cardiac arrest
  - at a hospital with fewer than 250 beds
  - in an unmonitored hospital unit
  - during after-hours periods (5 p.m. to 8 a.m. or weekends)

PATIENT BED ASSIGNMENT MATTERS

(WERE CODE PATIENTS BEING MONITORED?)

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Resuscitation 82 (2011) 845–852

Contents lists available at ScienceDirect

Resuscitation

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

Clinical paper

In-hospital cardiac arrest: Impact of monitoring and witnessed event on patient survival and neurologic status at hospital discharge☆

William J. Brady[a,b,d,*,1], Kelly K. Gurka[a,c,1], Beth Mehring[d,1], Mary Ann Peberdy[e,1], Robert E. O'Connor[a,1], for the American Heart Association's Get with the Guidelines (formerly, NRCPR) Investigators

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[b] Department of Medicine, University of Virginia School of Medicine, Charlottesville, VA, United States
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Resuscitation
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In-hospital
Witnessed

ABSTRACT

Context: In-hospital cardiac arrest is a significant public health problem with a low probability of patient survival to hospital discharge.
Objective: We evaluated the survival rates for adults with in-hospital cardiac arrest based on whether the arrest was witnessed and/or monitored. Our hypothesis is that patients with either a witnessed or monitored arrest had improved survival to hospital discharge with intact neurologic function.
Design, setting, and patients: We studied a cohort study of 74,213 patients who suffered in-hospital cardiac arrest from January 1, 2000 through February 1, 2008 at the 369 hospitals participating in the National Registry of Cardiopulmonary Resuscitation.
Interventions: The primary exposure of interest was whether the arrest was witnessed and/or monitored (i.e. electrocardiography, pulse oximetry, apnea, or bradycardia monitoring) at the time of arrest. Events were classified as being both monitored and witnessed, monitored only, witnessed only, or neither witnessed nor monitored.

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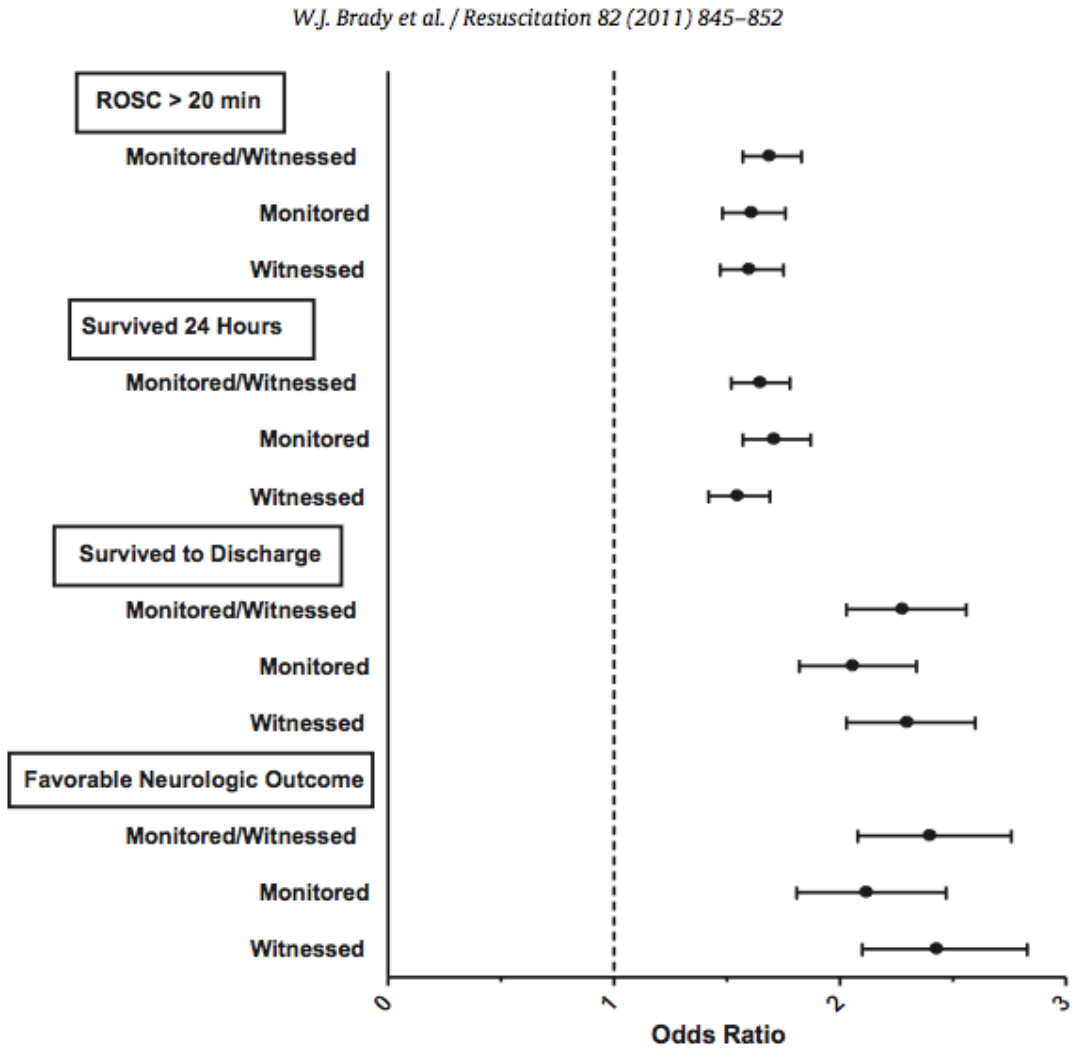
CARDIAC INDICATORS WHEN MONITORED / WITNESSED



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IS YOUR SURVIVAL DIFFERENT ON NIGHTS AND WEEKENDS?

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JAMA®
The Journal of the American Medical Association

Original Contribution
JAMA. 2008;299(7):785-792. doi: 10.1001/jama.299.7.785

« SHOW

Survival From In-Hospital Cardiac Arrest During Nights and Weekends

Mary Ann Peberdy, MD; Joseph P. Ornato, MD; G. Luke Larkin, MD, MSPH, MS; R. Scott Braithwaite, MD; T. Michael Kashner, PhD, JD; Scott M. Carey; Peter A. Meaney, MD, MPH; Liyi Cen, MS; Vinay M. Nadkarni, MD, MS; Amy H. Praestgaard, MS; Robert A. Berg, MD for the National Registry of Cardiopulmonary Resuscitation Investigators

[+] Author Affiliations

ABSTRACT

Context Occurrence of in-hospital cardiac arrest and survival patterns have not been characterized by time of day or day of week. Patient physiology and process of care for in-hospital cardiac arrest may be different at night and on weekends because of hospital factors unrelated to patient, event, or location variables.

Objective To determine whether outcomes after in-hospital cardiac arrest differ during nights and weekends compared with days/evenings and weekdays.

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ARE WE RESUSCITATING PEOPLE, RIGHT?

Does Time of Day Make A Difference??

Characteristics	D (%)	E (%)	N (%)	p (D=E) vs. N
Event Occurrence	34	33	34	ns
Survived Event	49	48	41	<0.001
Survived to Discharge	18	18	13	<0.001
Non-ICU Survival to Discharge	19	20	13	<0.001
ICU Survival to Discharge	17	17	13	<0.001
Monitored &/or Witnessed	89	89	82	<0.001

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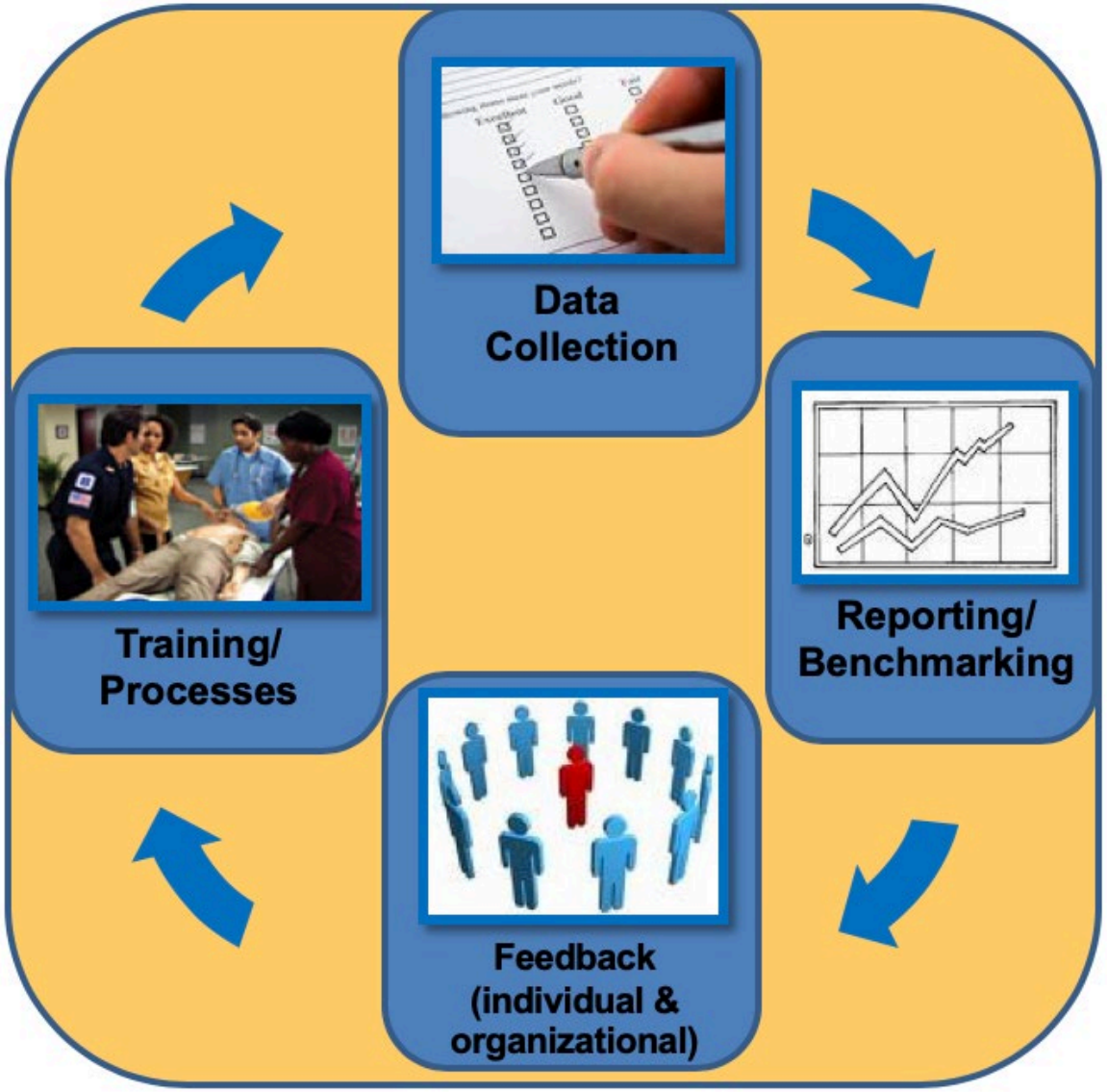
Developing A Culture Of *High-Quality* Resuscitation



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Events Entered into GWTG-Resuscitation

Pre-Event Care
Medical Emergency Teams

Medical Emergency Team Activation (MET)

Patient condition is deteriorating – team response needed to intervene for the crisis

Pre- Cardiac Arrest Care
Acute Respiratory Compromise

Acute Respiratory Compromise (ARC)

Patient requires emergency assisted ventilation

Managing the Cardiac Arrest

Cardio-Pulmonary Arrest (CPA)

Patient requires chest compressions or shock by a defibrillator.

Post Cardiac Arrest Care

Post Cardiac Arrest Care (PCAC)

Care of patient with in-hospital or out of hospital event

GET THE REPORTS YOU NEED

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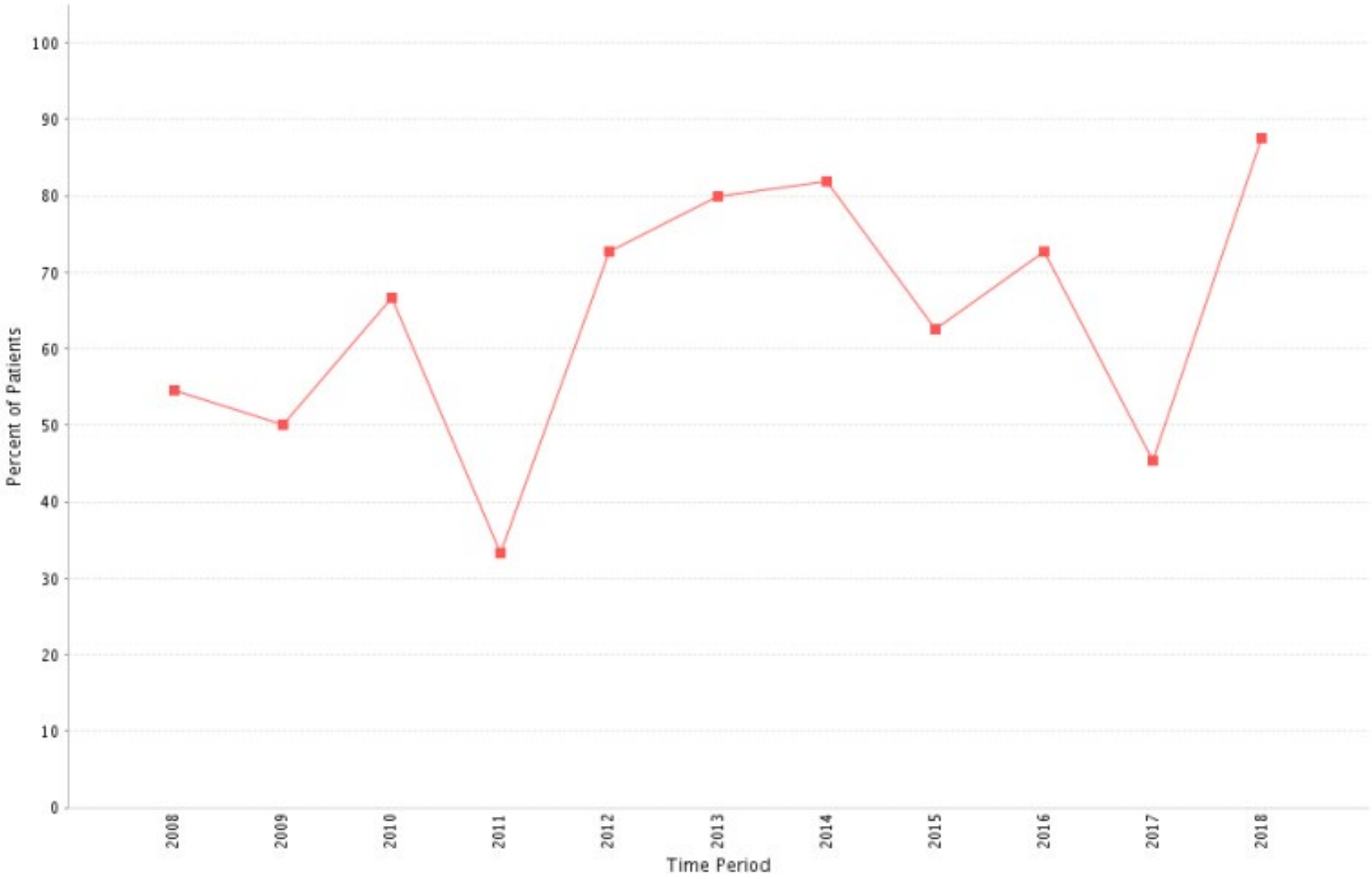
Time to Shock < 2 minutes to VT/VF



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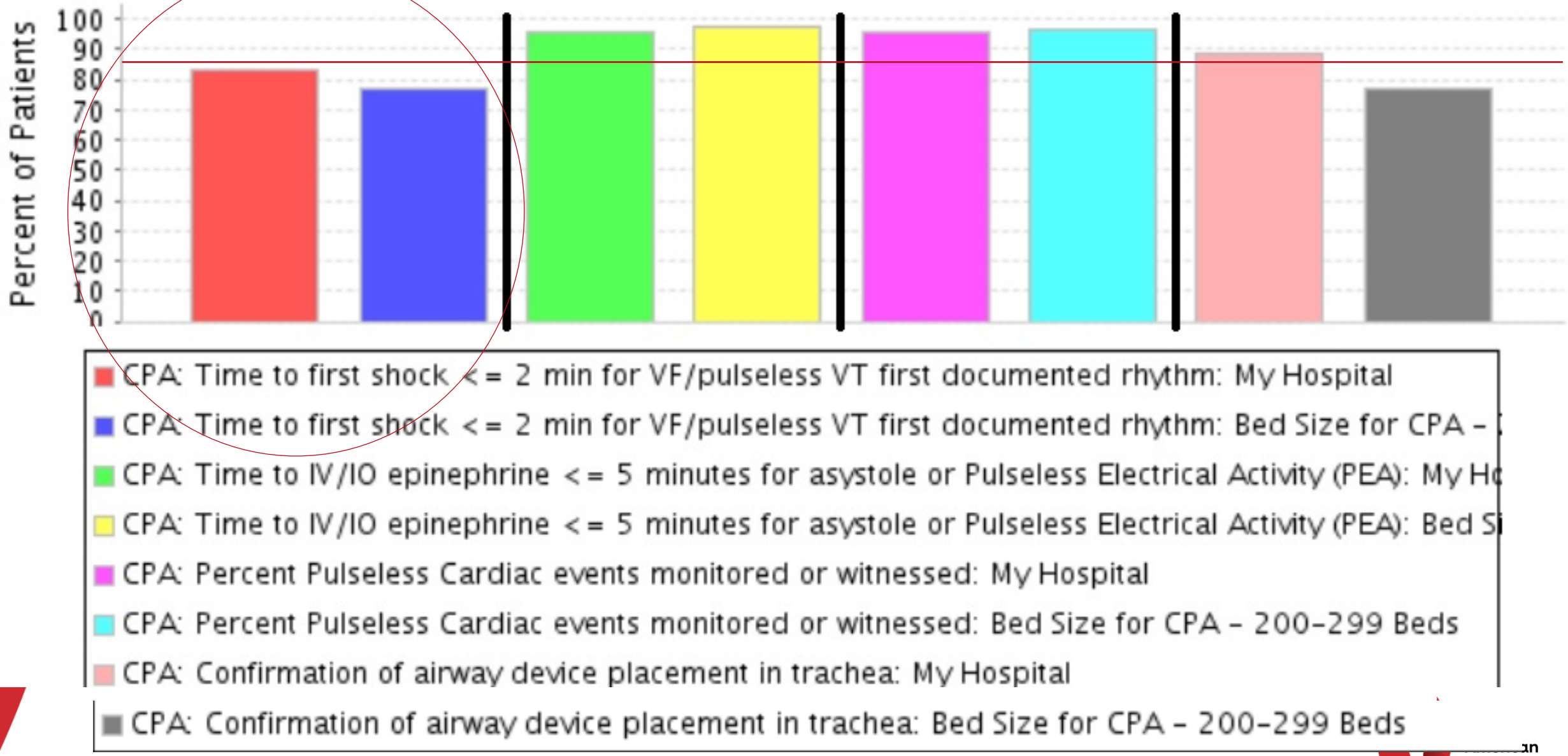
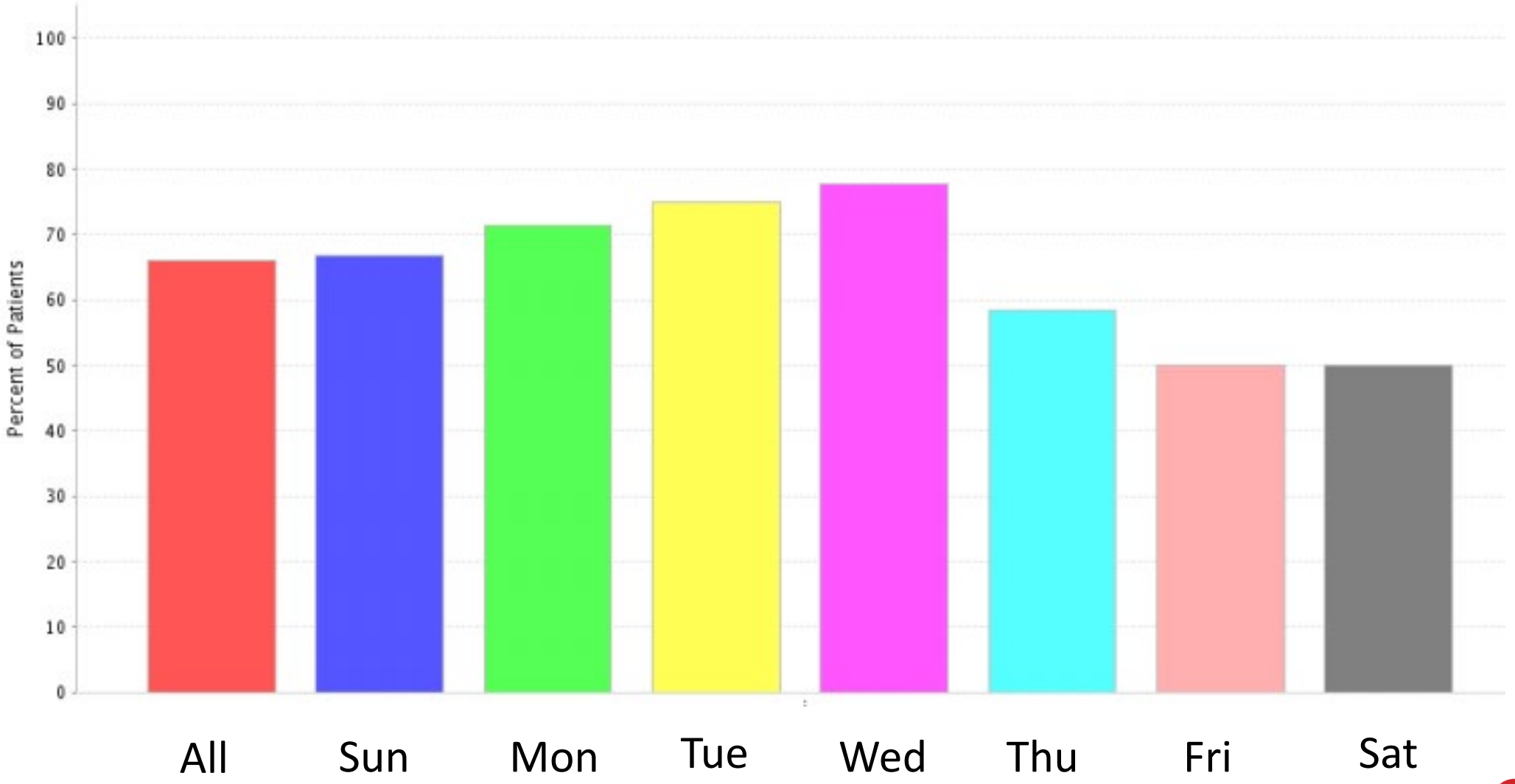
Current Performance



Time to Shock < 2 minutes to VT/VF by DOtW



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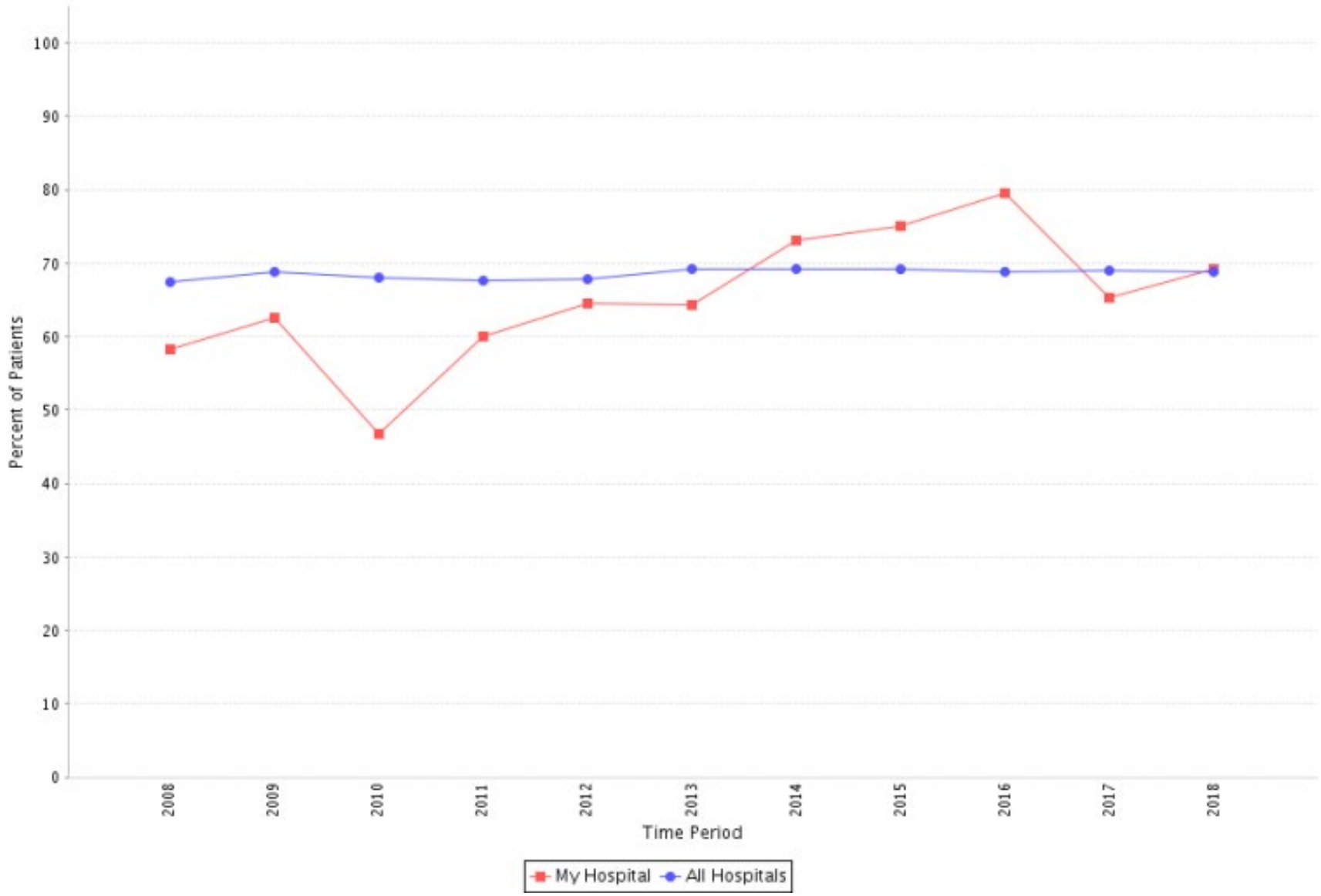
Cardiac Arrests in an ICU / Critical Care Setting



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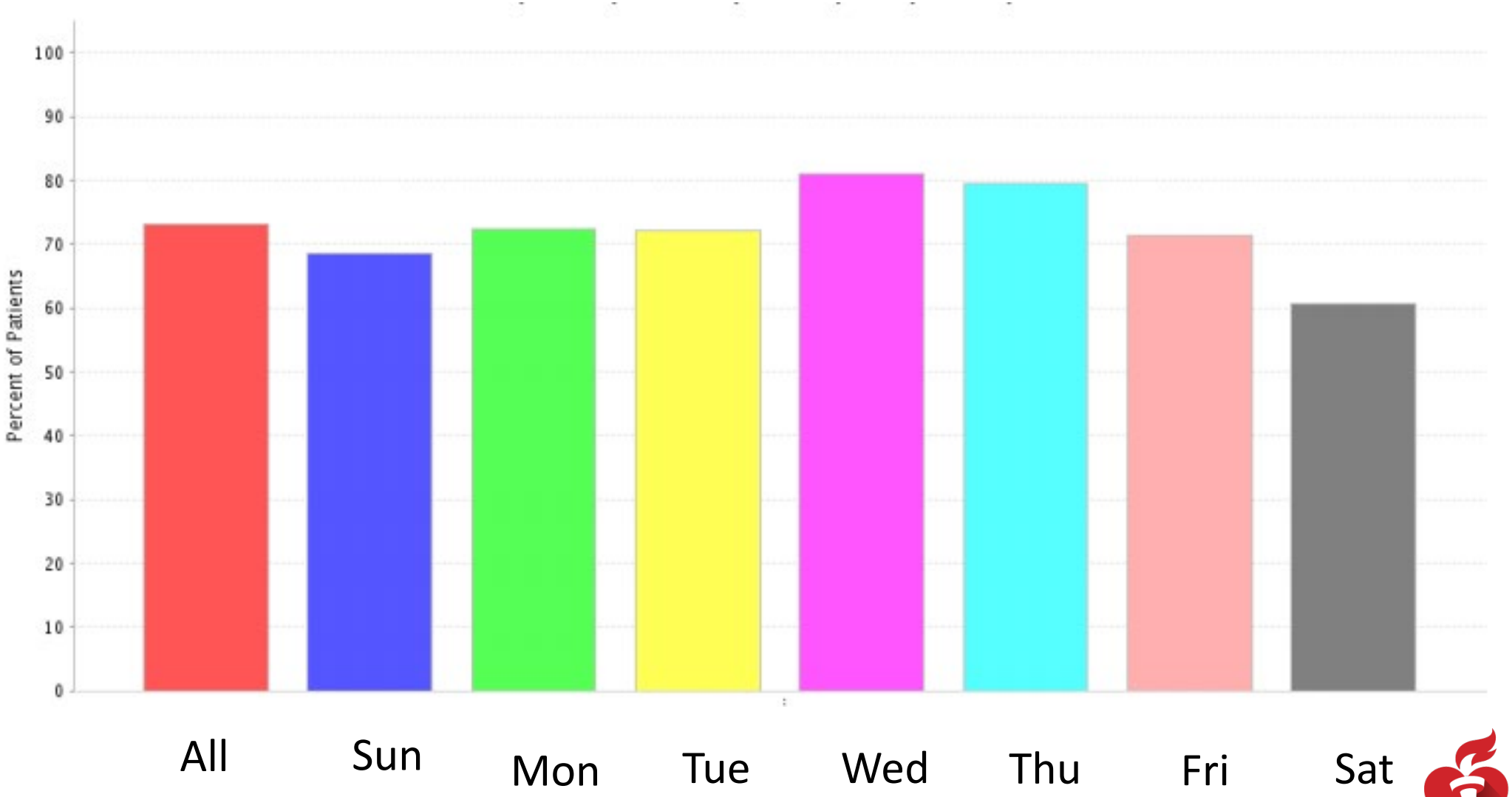
Cardiac Arrests in an ICU / Critical Care Setting



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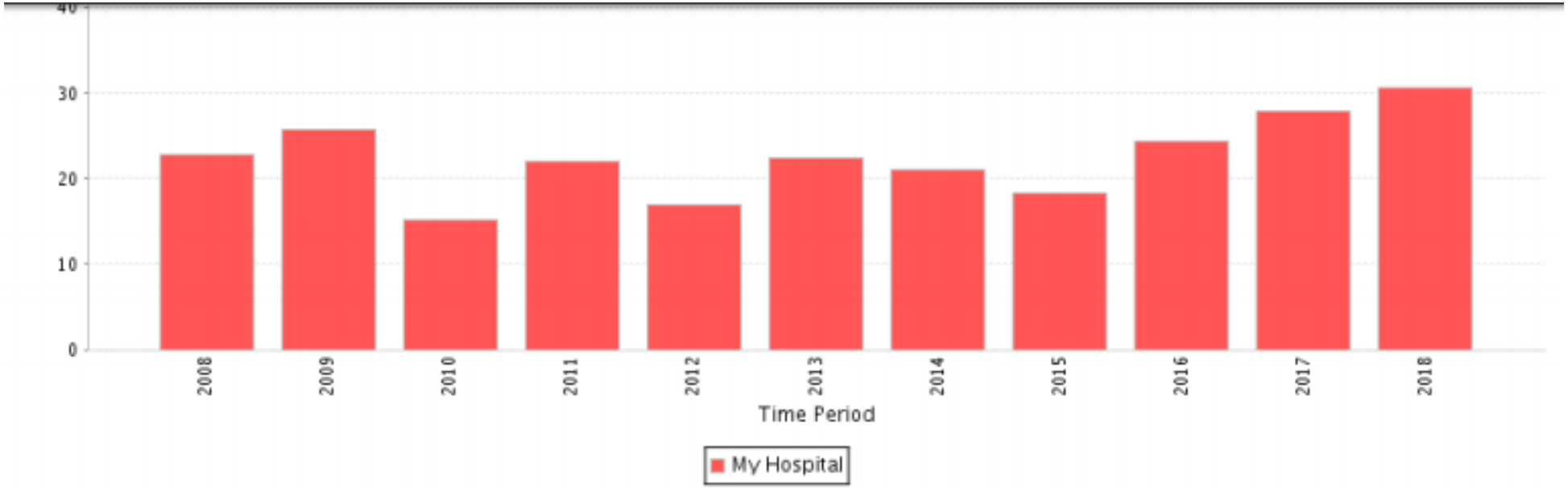
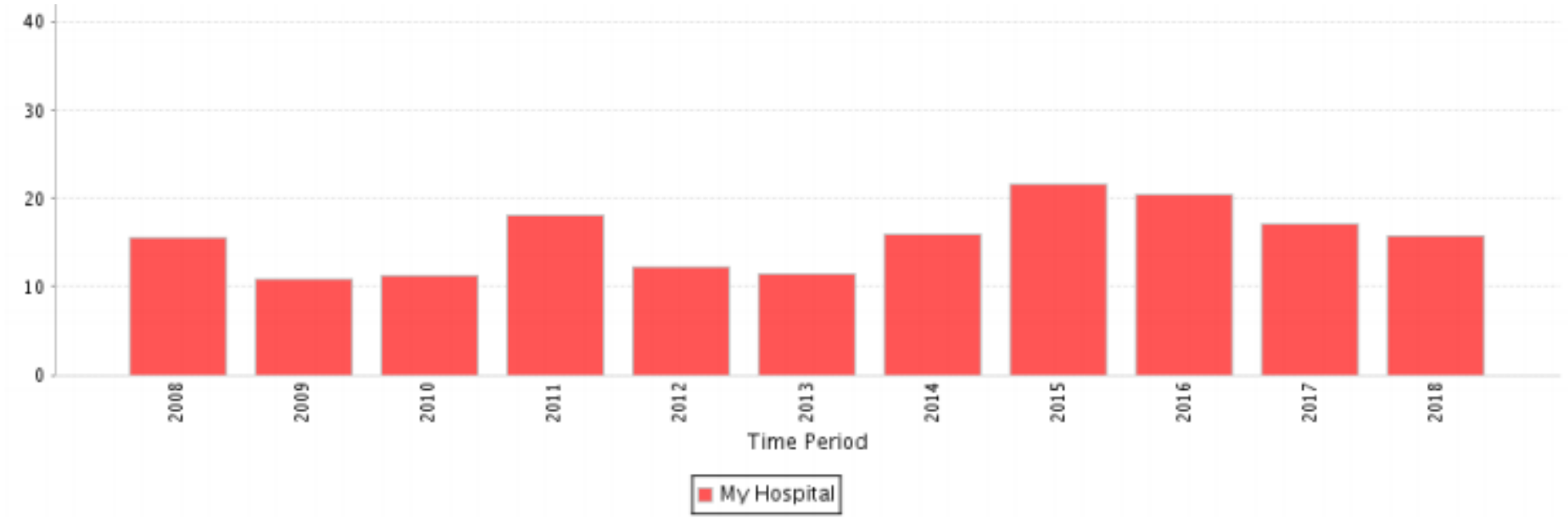
ED Discharge 24 hours before MET Activation



Data For: MET: ED discharge within 24 hrs prior to MET activation				
Benchmark Group	Time Period	Numerator	Denominator	% of Patients
My Hospital	2008	106	465	22.8%
My Hospital	2009	57	222	25.7%
My Hospital	2010	67	445	15.1%
My Hospital	2011	63	288	21.9%
My Hospital	2012	53	313	16.9%
My Hospital	2013	61	272	22.4%
My Hospital	2014	49	233	21.0%
My Hospital	2015	32	176	18.2%
My Hospital	2016	50	206	24.3%
My Hospital	2017	55	198	27.8%
My Hospital	2018	37	121	30.6%

ICU Discharge before MET Activation



Data For: MET: ICU discharge prior to MET activation				
Benchmark Group	Time Period	Numerator	Denominator	% of Patients
My Hospital	2008	72	465	15.5%
My Hospital	2009	24	222	10.8%
My Hospital	2010	50	445	11.2%
My Hospital	2011	52	288	18.1%
My Hospital	2012	38	313	12.1%
My Hospital	2013	31	272	11.4%
My Hospital	2014	37	233	15.9%
My Hospital	2015	38	176	21.6%
My Hospital	2016	42	206	20.4%
My Hospital	2017	34	198	17.2%
My Hospital	2018	19	121	15.7%

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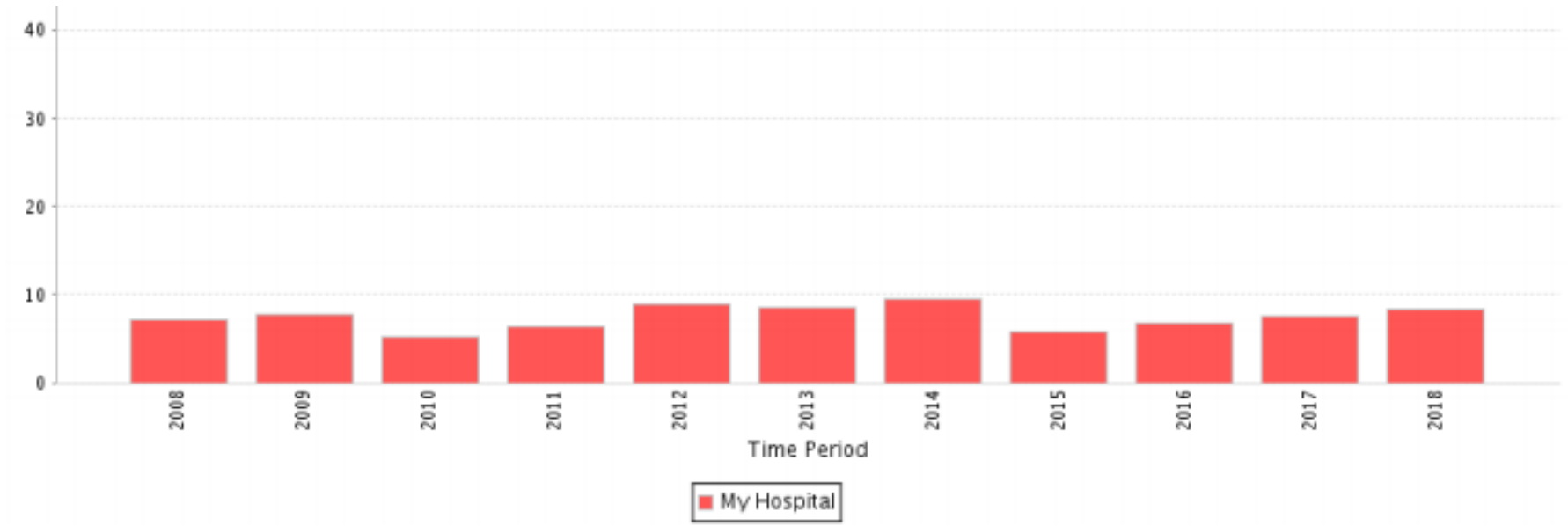
PACU Discharge before Cardiac Arrest



Data For: MET: PACU discharge within 24 hrs to MET activation				
Benchmark Group	Time Period	Numerator	Denominator	% of Patients
My Hospital	2008	33	465	7.1%
My Hospital	2009	17	222	7.7%
My Hospital	2010	23	445	5.2%
My Hospital	2011	18	288	6.2%
My Hospital	2012	28	313	8.9%
My Hospital	2013	23	272	8.5%
My Hospital	2014	22	233	9.4%
My Hospital	2015	10	176	5.7%
My Hospital	2016	14	206	6.8%
My Hospital	2017	15	198	7.6%
My Hospital	2018	10	121	8.3%

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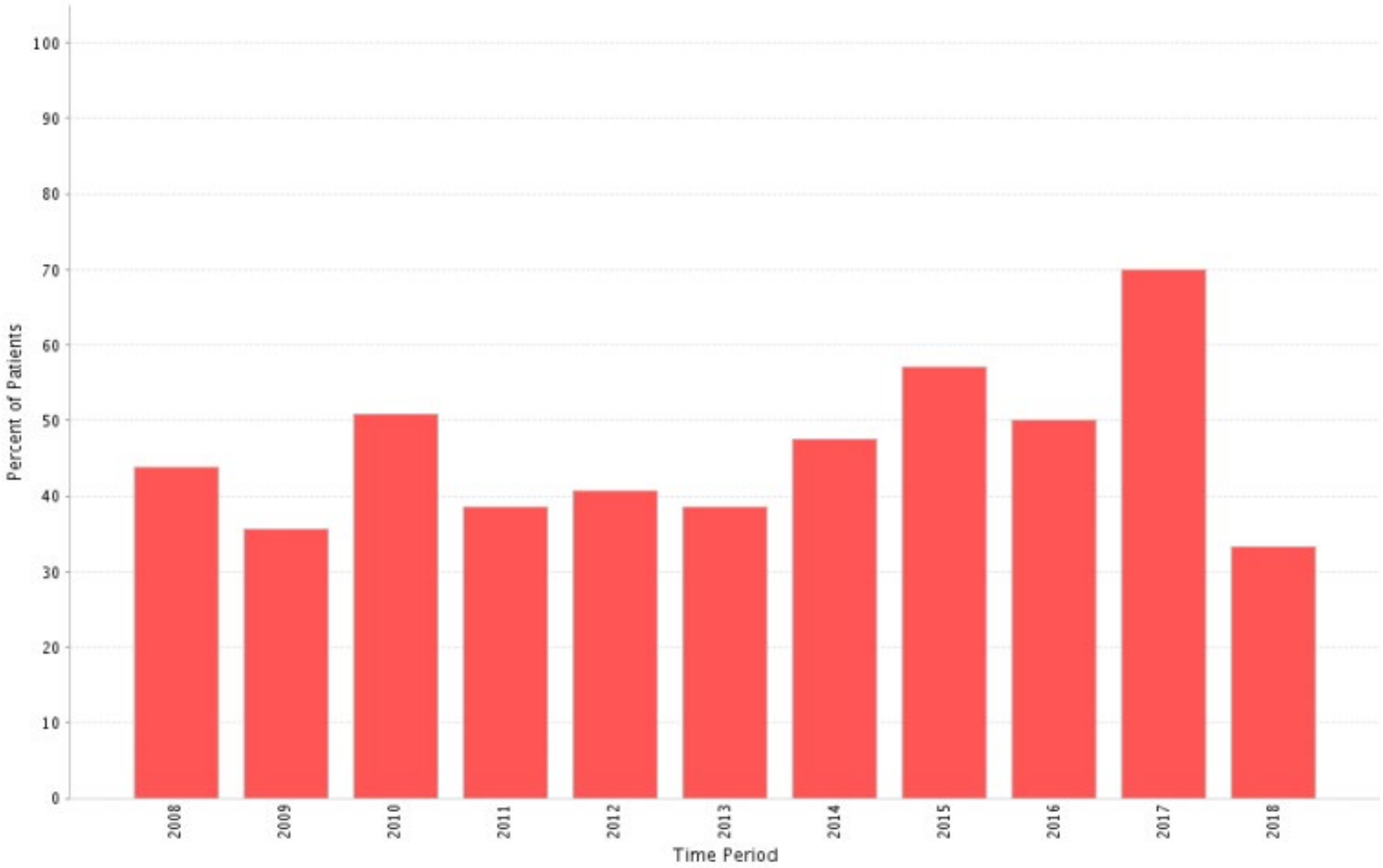
Prior MET Event 24 hours Before MET Event



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