Get With The Guidelines®-Resuscitation:

Hospital Rates of Delayed Epinephrine and Outcomes

March 5, 2019

Presenter:
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Pediatric Cardiac Critical Care

American Heart Association | American Stroke Association
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Tia T. Raymond, M.D.

PEDIATRIC CARDIOLOGY

Dr. Tia Raymond is a board-certified pediatric cardiac intensivist who primarily treats patients in the cardiac intensive care unit who have congenital or acquired heart disease. She focuses on treating children before and after heart surgery and has a dedicated mission to obtain the best possible outcomes in cardiac critical care. Through continuous study, lecturing, and research participation, she remains current in innovative management techniques, and invasive/noninvasive diagnostic and interventional technologies.

Dr. Raymond has worked in the Congenital Heart Surgery Unit at Medical City Children's Hospital for more than 10 years. She has served as a volunteer for the American Heart Association's Get With the Guidelines-Resuscitation and the emergency cardiovascular care committee, and she actively participates in updates for the pediatric advanced life support guidelines. A Fellow of the American Academy of Pediatrics and the American Heart Association, her research publications focus on in-hospital resuscitation, cardiac intensive care, and quality improvement. She is often sought after for her expertise in pediatric cardiac critical care, including advanced treatment for heart failure and the use of extracorporeal membrane oxygenation. Dr. Raymond, a Dallas native, is married and has two young sons.

EDUCATION

B.S., Pepperdine University; M.D., University of Texas Southwestern Medical School; Internship and Residency, Children's Medical Center Dallas; Fellowship, Texas Children's Hospital/Baylor College of Medicine; Specialty Training, Texas Children's Hospital

PEDIATRIC CARDIAC INTENSIVISTS OF NORTH TEXAS

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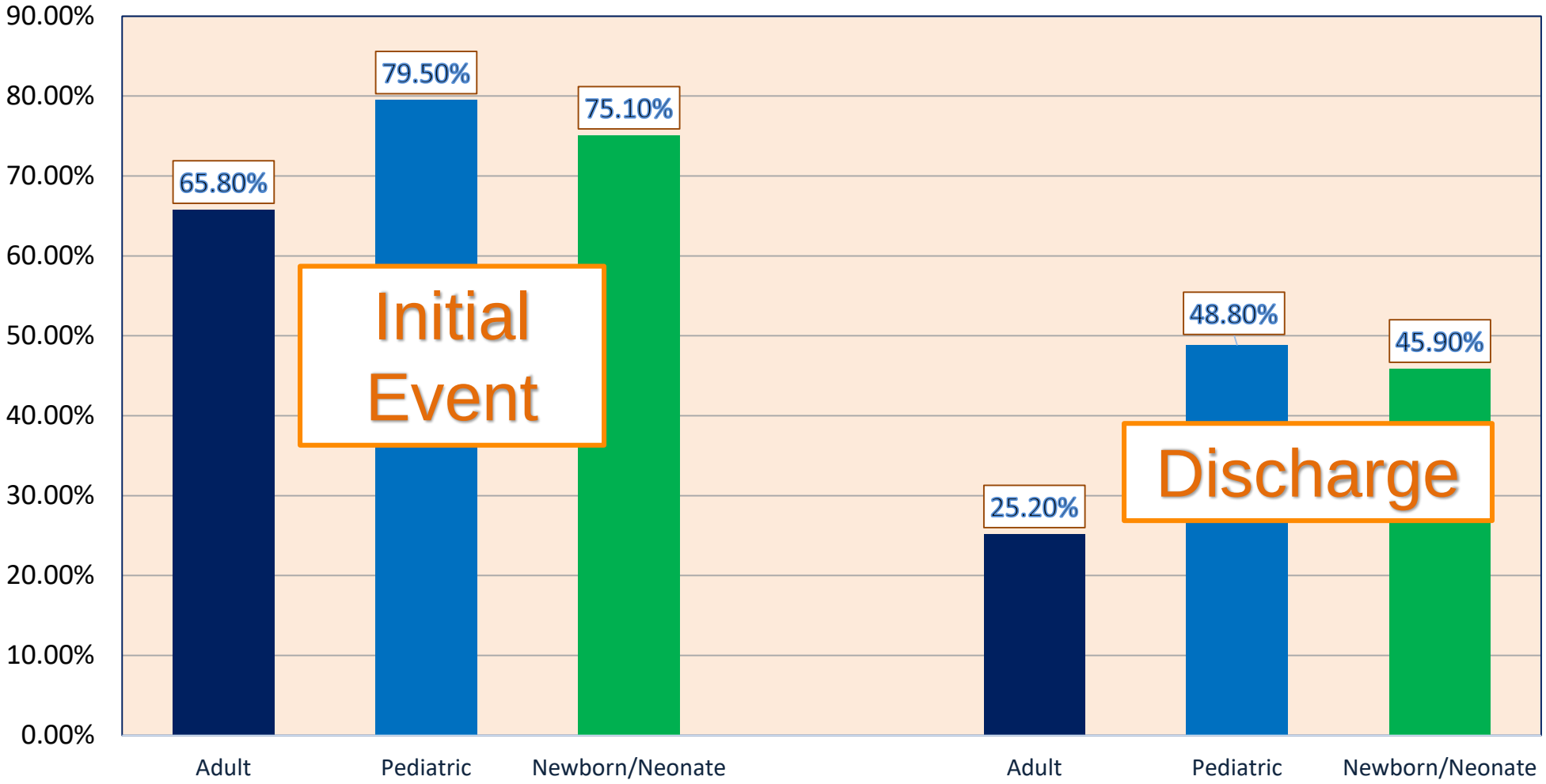
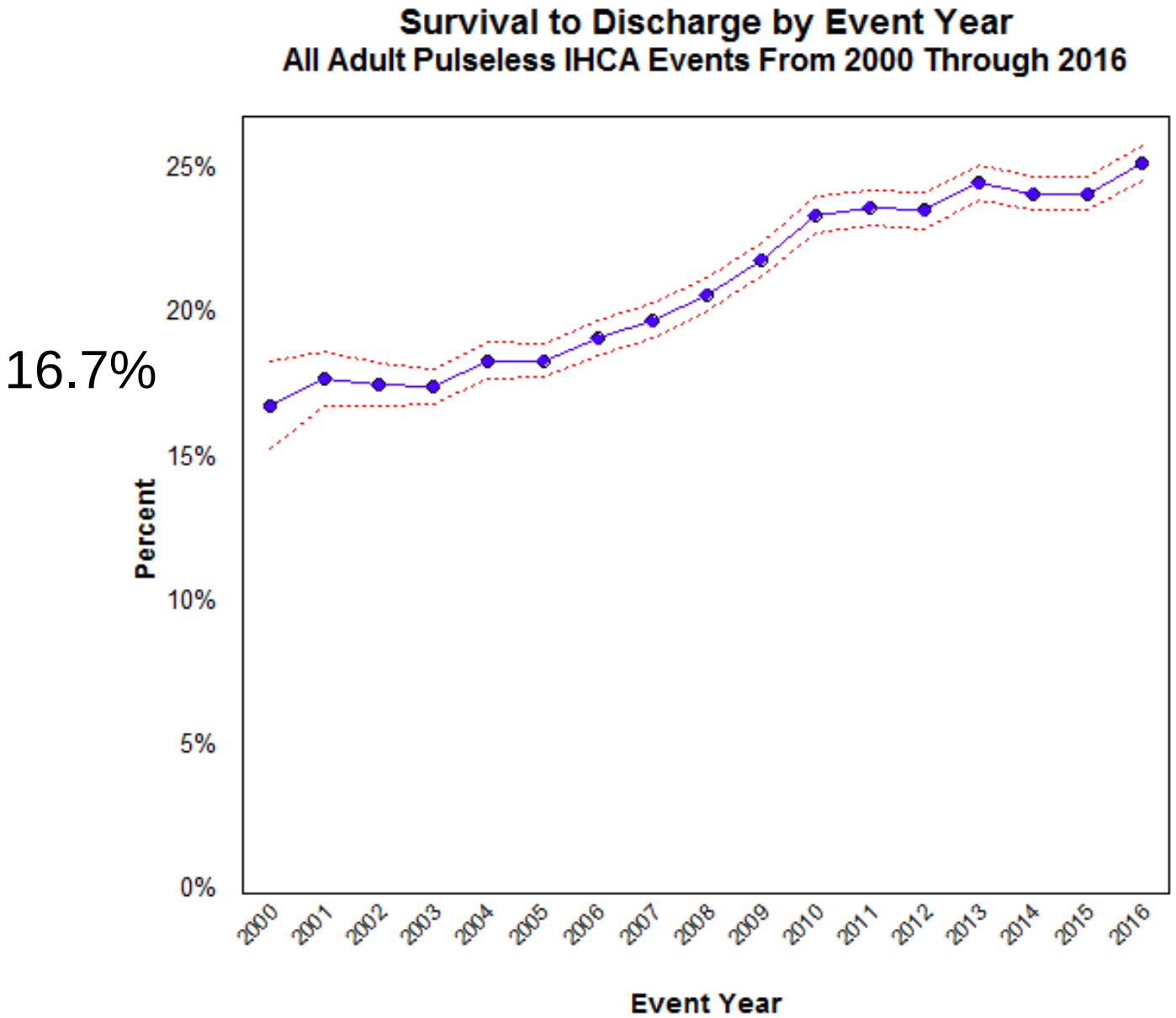
Agenda for Webinar:

- Current data on in-hospital cardiac arrest (IHCA) survival rates
- GWTG-R recognition measures
- Epinephrine for IHCA
- Time to epinephrine administration at the patient level in the adult and pediatric literature and outcomes
- Time to epinephrine administration at the hospital level and outcomes
- How GWTG-R can help you and your hospital MEET THE GUIDELINES!

In-Hospital Arrest Outcomes

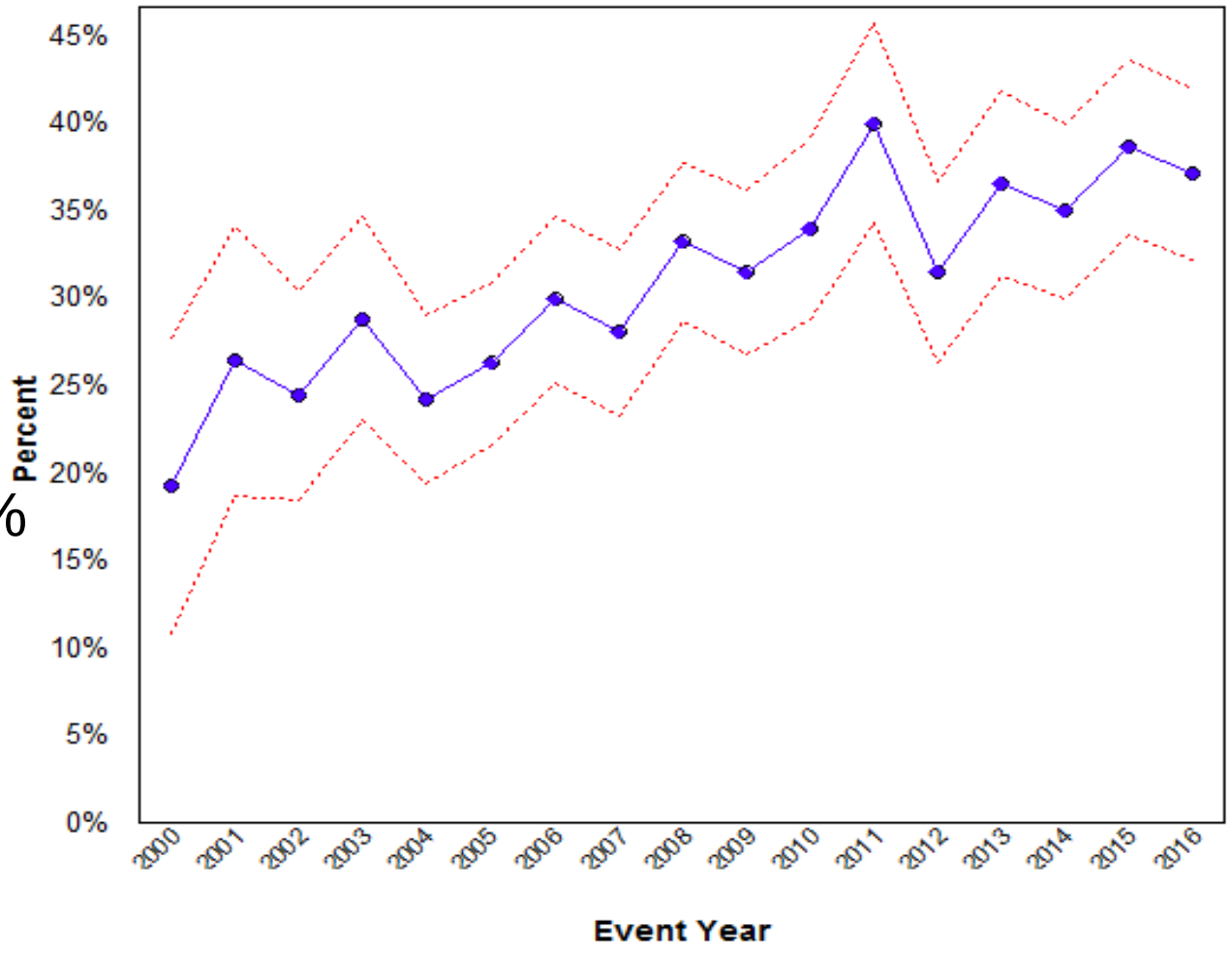


GWTG-R Data



- **50% improvement in survival to DC since 2000**
- **Improved survival to DC of ~ 0.52% per year since 2000**

GWTG-R Data



19.0%

28.6%

- **50% improvement in survival to DC since 2000**

GWTG-R Data

GWTG-R Recognition Measures

Adult Measures Adult population is age >=18 years;	Pediatric Measures Pediatric population is age <18 years and >=1 year	Neonate population is age <1 year and >=24 hours old	Newly Born population is age <24 hours old and event occurred at delivery
Time to first shock <= 2 min for VF/pulseless VT first documented rhythm: Percent of events in adult patients with VF/pulseless VT first documented rhythm in whom time to first shock <=2 minutes of event recognition.	**Confirmation of airway device placement in trachea:** Percent events in pediatric patients wh confirmation of airway device placement in trach		recognition.
Time to IV/IO epinephrine ≤ 5 minutes for asystole or Pulseless Electrical Activity (PEA): Percent of events in adult patients where time to epinephrine ≤ 5 minute of asystole or pulseless electrical activity.	**Time to first chest compressions ≤1 min in pediatric patients:** Percent of events where time to first ches compressions ≤ 1 minute	**Time to first chest compressions ≤1 min in pediatric patients:** Percent of	**Advanced airway placed prior to the initiation of chest compressions:** initiation of chest compressions.
Percent Pulseless Cardiac events monitored or witnessed: Percent of pulseless cardiac patient events were monitored or witnessed	**Time to IV/IO epinephrine ≤ 5 minutes for asystole or Pulseless Electrical Activity (PEA):** Percent of events pediatric patients where time to epinephrine ≤ 5 minute of asysto pulseless electrical activity.	**Time to IV/IO epinephrine ≤ 5 minutes for asystole or Pulseless Electrical**	**Pulse oximetry in place prior to the initiation of chest compressions:**
Confirmation of airway device placement in trachea: Percent of CPA events in adult patients who had confirmation of airway device placement in trachea.	**Percent pulseless card events occurring in a setting:** Percent of pulse cardiac events occurring in an setting (Adult ICU, PICU, Pediatric Cardiac ICU) versus a general inpatient area (General inpatient area, Step down/telemetry)	pulseless cardiac events occurring in an ICU setting (Adult ICU, PICU, Pediatric Cardiac ICU) versus a general inpatient area (General inpatient area, Step down/telemetry)	**placement in trachea:** Percent of CPA events in newly born patients who had confirmation of airway device placement in trachea.

Time to first shock <=2 min for VF/pVT first documented rhythm.

Time to IV/IO epinephrine <= 5 mins for asystole/PEA.

Percent pulseless cardiac events monitored or witnessed..

Confirmation of airway device placement in trachea.

85% Compliance required for all measures within patient population to receive Recognition for that patient population
Time of Compliance 2017 Calendar Year for Silver and Gold awards presented in 2018

Vasopressors in Cardiac Arrest:

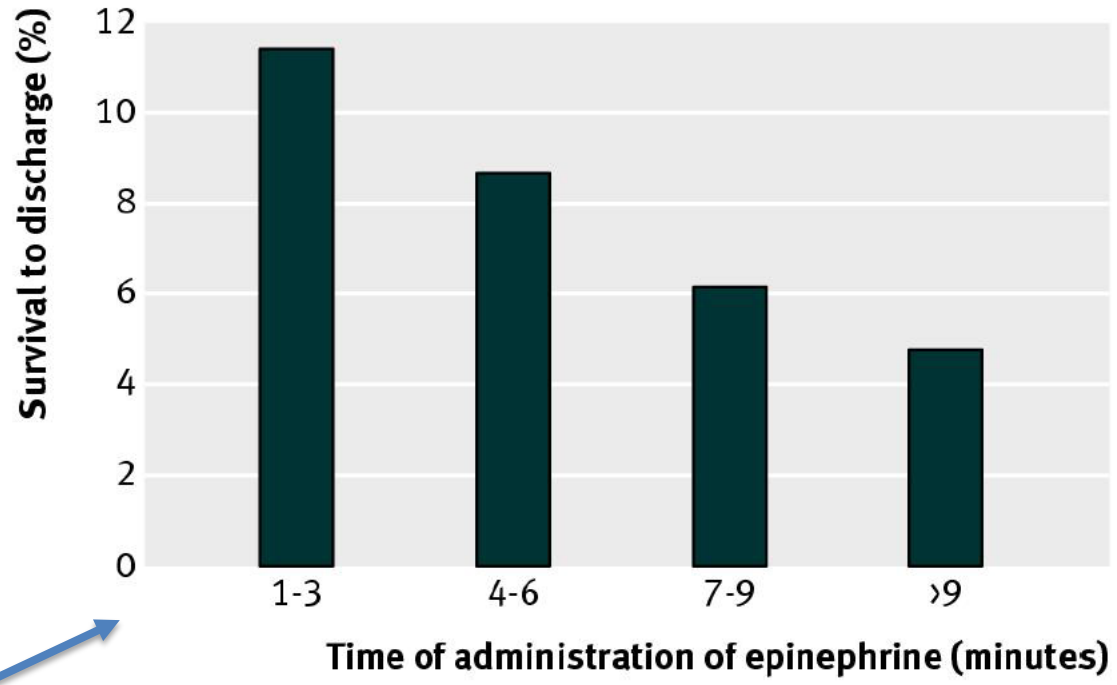
- Vasopressors used to restore spontaneous circulation by optimizing coronary perfusion and help maintain cerebral perfusion during CPR.
- Cause intense vasoconstriction and increase myocardial oxygen consumption which may be detrimental.

2015 Recommendation—Updated
Standard-dose epinephrine (1 mg every 3 to 5 minutes) may be reasonable for patients in cardiac arrest (Class IIb, LOE B-R).

2015 Recommendation—New
It is reasonable to administer epinephrine in pediatric cardiac arrest (Class IIa, LOE C-LD).

Time to administration of epinephrine and outcome after in-hospital cardiac arrest with non-shockable rhythms: retrospective analysis of large in-hospital data registry

- GWTG-R from 2000-2009 of 25,095 adults with IHCA and asystole (55%) or PEA (45%) as initial rhythm.
- Mean age 72, and 57% men.
- Primary outcome SHD and secondary outcomes ROSC, 24hr survival and survival with favorable neurologic outcome (CPC 1 or 2).
- Median time 1st dose epi 3 mins (IQR 1-5 mins).
- Significant step-wise decrease in survival



Donnino, BMJ 2014

Time to administration of epinephrine and outcome after in-hospital cardiac arrest with non-shockable rhythms: retrospective analysis of large in-hospital data registry

Timing (minutes)	No (%) who survived to hospital discharge	Odds ratio (95% CI)		P value
		Unadjusted	Adjusted*	
1-3	1626 (12)	Reference	Reference	—
4-6	667 (10)	1.23 (1.12 to 1.35)	0.91 (0.82 to 1.00)	0.055
7-9	180 (8)	1.54 (1.32 to 1.81)	0.74 (0.63 to 0.88)	<0.001
>9	130 (7)	1.77 (1.47 to 2.13)	0.63 (0.52 to 0.76)	<0.001

CONCLUSIONS:
In patients with non-shockable cardiac arrest in hospital, earlier administration of epinephrine is associated with a higher probability of return of spontaneous circulation, survival in hospital, and neurologically intact survival.

Donnino, BMJ 2014

Time to Epinephrine and Survival After Pediatric In-Hospital Cardiac Arrest

Lars W. Andersen, MD; Katherine M. Berg, MD; Brian Z. Saindon, BS; Joseph M. Massaro, PhD; Tia T. Raymond, MD; Robert A. Berg, MD; Vinay M. Nadkarni, MD; Michael W. Donnino, MD; for the American Heart Association Get With the Guidelines–Resuscitation Investigators

- GWTG-R analysis to determine if time to epinephrine was associated with outcomes in pediatric IHCA
- Patients < 18 years with IHCA and initial non-shockable rhythm who received at least 1 dose epinephrine
- Time to epi defined as time in minutes from recognition of loss of pulse to first dose epi
- Primary outcome survival to hospital discharge
- Secondary outcomes ROSC, 24hr survival, survival to DC with good neurologic outcome defined as PCPC score 1 or 2
- Poor neurologic outcome defined as PCPC score 3 to 6 (death)

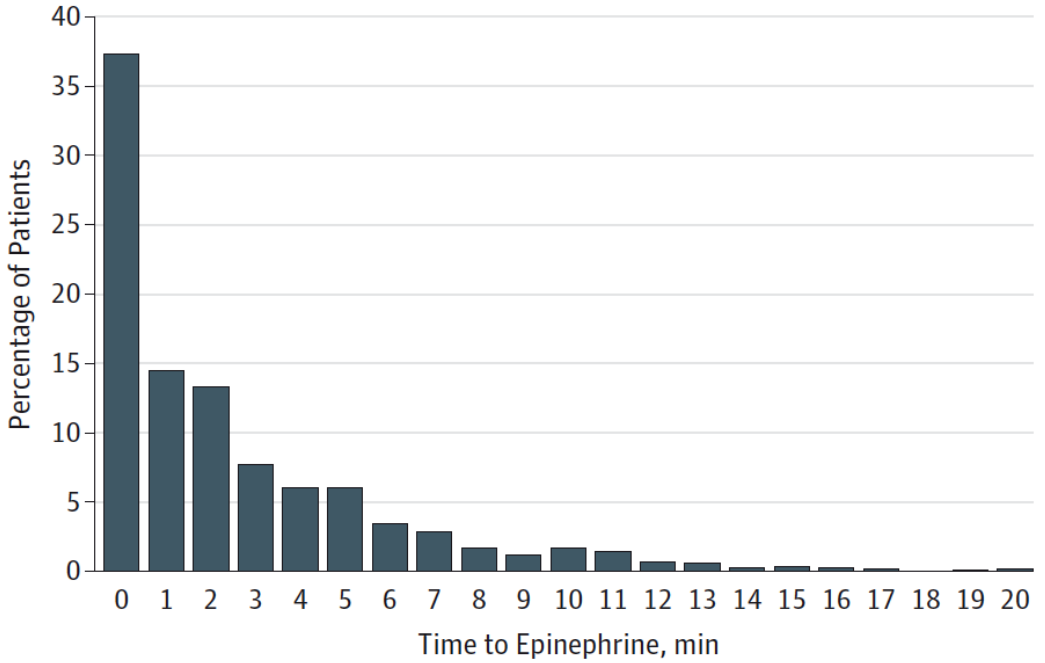
Anderson, JAMA 2015

Time to Epinephrine and Survival After Pediatric In-Hospital Cardiac Arrest

Results:

- 1558 patients (median age, 9months [IQR 13 days to 5 years] in final cohort.
- Median time to first dose epinephrine 1 min [IQR, 0–4; range 0–20; mean [SD], 2.6 [3.4] mins.
- Median time to chest compressions 0 mins (IQR, 0–0).

Figure 2. Distribution of Time to Epinephrine in Pediatric In-Hospital Nonshockable Cardiac Arrest (N = 1558)



The majority of the included patients received epinephrine early, with 37% receiving epinephrine within the first minute; 15% received the first dose of epinephrine more than 5 minutes after the cardiac arrest. (See Methods for definition of time to epinephrine.) No time point had zero observations.

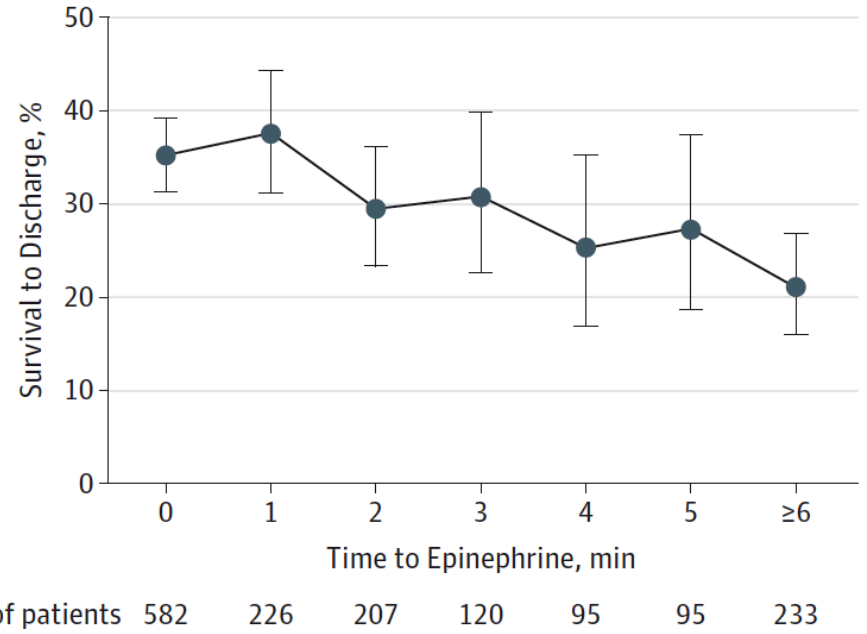
Anderson, JAMA 2015

Time to Epinephrine and Survival After Pediatric In-Hospital Cardiac Arrest

Results:

- Survival to discharge 31.3% (487/1558)
- Longer time to epi was significantly associated with lower risk of survival to discharge in unadjusted analysis (RR per minute delay, 0.94 [95%CI, 0.91-0.97]; P<0.001.
- This association remained significant in multivariable analysis (RR per minute delay, 0.95 [95%CI, 0.93-0.98]; P<0.001.

Figure 3. Time to Epinephrine and Survival to Hospital Discharge After Pediatric In-Hospital Nonshockable Cardiac Arrest (N=1558)



Longer time to epinephrine administration was associated with lower risk of survival to discharge in multivariable analysis (risk ratio per minute delay, 0.95 [95% CI, 0.93-0.98]; *P* < .001). Error bars indicate exact binomial 95% confidence intervals.

Anderson, JAMA 2015

Time to Epinephrine and Survival After Pediatric In-Hospital Cardiac Arrest

Results:

- Secondary Outcomes
  - Of 1558, 993 (63.7%) had ROSC and 745 (47.8%) were alive at 24hrs.
  - 217 of 1395 (15.6%) had a favorable neurologic outcome at hospital discharge
    - **an additional 10.5% [163/1558] survived to hospital discharge but did not have a documented PCPC score**
  - Increasing time to epinephrine was associated with decreased risk if ROSC, lower survival to 24hrs, and less survival with favorable neurologic outcome in unadjusted and multivariable analysis.

Anderson, JAMA 2015

Time to Epinephrine and Survival After Pediatric In-Hospital Cardiac Arrest

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Results:

eTable 4. Outcomes according to epinephrine category[a]		
	Epinephrine category	
Outcome	≤ 5 min	> 5 min
ROSC	445/1,325 (66)	120/233 (49)
24-hour survival	664/1,325 (50)	81/233 (35)
Survival to hospital discharge	438/1,325 (33)	49/233 (21)
Favorable neurological outcome	196/1176 (17)	21/219 (10)

- Additional analysis with epinephrine divided into 5 mins or less versus > 5 mins.
- In unadjusted and adjusted multivariable analysis the less than 5 min group had improved ROSC, 24hr survival and survival to discharge.
- Improved survival to discharge with good neuro outcome for the < 5 min group was only seen in the unadjusted analysis.

Anderson, JAMA 2015

Time to Epinephrine and Survival After Pediatric In-Hospital Cardiac Arrest

Conclusions

Among children with in-hospital cardiac arrest with an initial nonshockable rhythm who received epinephrine, delay in administration of epinephrine was associated with decreased chance of survival to hospital discharge, ROSC, 24-hour survival, and survival to hospital discharge with a favorable neurological outcome.

Anderson, JAMA 2015

The Association of Hospital Rate of Delayed Epinephrine Administration With Survival to Discharge for Pediatric Nonshockable In-Hospital Cardiac Arrest

Tia T. Raymond, MD[1]; Amy Praestgaard[2]; Robert A. Berg, MD[3]; Vinay M. Nadkarni MD[4]; Chris S. Parshuram, MB ChB, PhD[5]; for the American Heart Association's Get With The Guidelines-Resuscitation Investigators

- GWTG-R analysis 2000-2016 children (<18 years) with index nonshockable IHCA (asystole or PEA) who received at least 1 dose of epinephrine.
- Objective was to evaluate the variation of hospital rates of delayed epinephrine administration and the association of those rates with event, 24hr, and overall survival to hospital discharge.
- Delayed epinephrine defined as > 5 mins between the time need for chest compressions was identified and epinephrine was administered.
- GWTG-R hospitals with > 6 months data and > or equal to 5 total pediatric IHCA events with nonshockable rhythm were included.

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The Association of Hospital Rate of Delayed Epinephrine Administration With Survival to Discharge for Pediatric Nonshockable In-Hospital Cardiac Arrest

- Exclusions included: vasopressor infusion at time of event, delivery room, trauma or visitors, ECPR, AVP prior to epinephrine, epi prior to loss of pulse, missing data on covariates (chosen based on Anderson, et al, JAMA 2015)
- Primary outcome measure was relationship between hospital rate of delayed epi and survival to discharge.
- Secondary outcomes were the relationship between delayed epi and ROSC, 24-hr survival, and survival with favorable neurological outcome (PCPC 1,2).

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Analysis used hierarchical regression and included:

13 patient/event-level factors

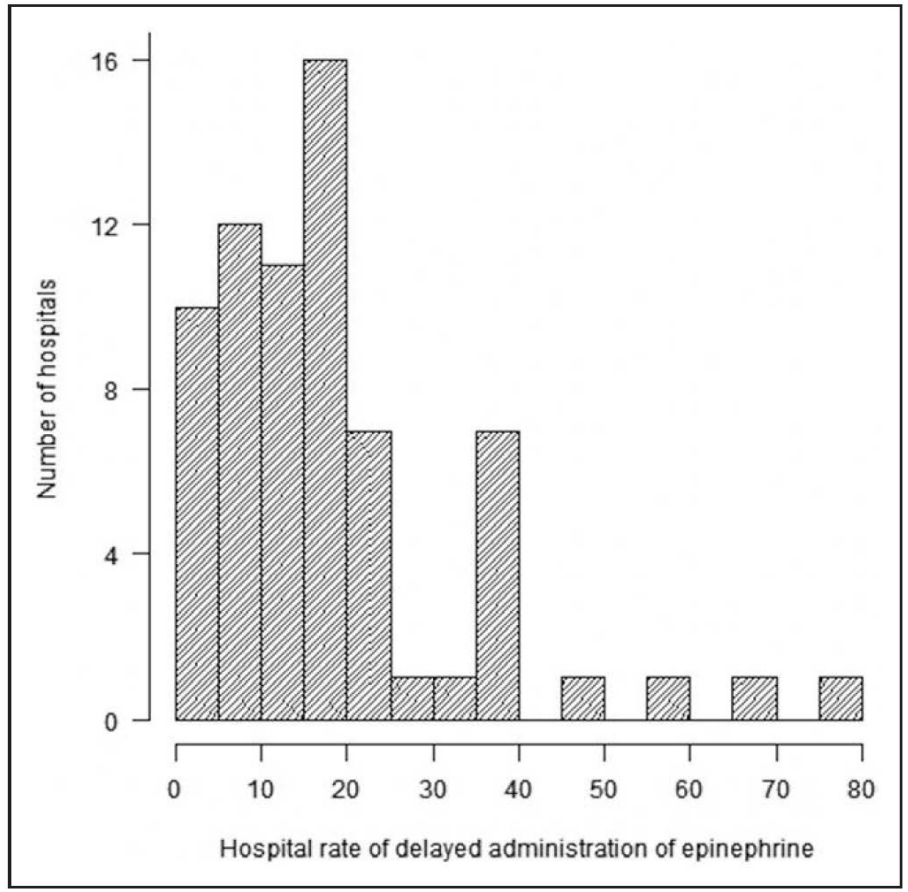
7 hospital-level factors

Variable	Definition
Demographics	
Age	Age in years
Gender	Self-reported (male or female)
Illness category	Medical cardiac, Surgical cardiac, Medical noncardiac, Surgical noncardiac, Newborn, Other
Cardiac arrest characteristics	
Initial cardiac arrest rhythm	First documented rhythm at the time of cardiac arrest (asystole or Pulseless Electrical Activity [PEA])
Hospital location	Location of patient in the hospital at the time of cardiac arrest (ICU, monitored unit [telemetry], or non-monitored unit)
Time of day	Time of day when cardiac arrest occurred; daytime (working hours [7:00 AM – 10:59] or nighttime [11:00 PM – 6:59 AM]
Day of week	Weekend [Saturday, Sunday] or National Holiday on day of cardiac arrest
Calendar year	Calendar year on day of cardiac arrest
Time to initiation chest compressions	Time from start of cardiac arrest event to chest compressions
Time to epinephrine administration	Time from start of cardiac arrest event to epinephrine administration
Patient monitored or witnessed	Patient on monitors or event witnessed at time of cardiac arrest event
Endotracheal tube inserted	Endotracheal tube inserted during cardiac arrest event
Therapeutic interventions in place at the time of cardiac arrest	
Mechanical ventilation	Including use of ventilation via invasive airway or non-invasive ventilation (CPAP or BiPAP)
Hospital characteristics	(Source: American Hospital Association Data Year 2012)
Geographic location	Categorized as North Mid-Atlantic, South Atlantic (including Puerto Rico), North Central, South Central, Mountain/Pacific based on the United States Census 2010
Number of hospital beds	Categorized as less than 250, 250-499, and 500 or more.
Proportion of ICU beds	Defined as ICU beds as percent of total beds, > 10%
Teaching status	Categorized as major teaching (hospitals with a residency and a fellowship program), minor teaching (hospitals with a residency program but no fellowship program), and non-teaching (hospitals without a residency or fellowship program).
Type of hospital	Primarily adult or primarily children.
Eligible arrests per 1000 admissions	The number of cardiac arrest events eligible per 1000 hospital admissions.
1	Number of years the hospital has participated in GWTG-R.

The Association of Hospital Rate of Delayed Epinephrine Administration With Survival to Discharge for Pediatric Nonshockable In-Hospital Cardiac Arrest

Results:

- 1,462 patients at 69 hospitals included.
- 218 patients (14.9%) had epinephrine delay (> 5mins)
- Proportion of events with epi delay varied widely across hospitals and ranged from 0-80% (median, 15.6%; IQR, 7-25%).
- Median hospital delay 16% and IQR (7-25%).
- Hospitals were categorized into quartiles based on the proportion of events with delayed epi as follows: Q1 0 to <7.1%; Q2 7.1 to < 15.6%, Q3 15.6 to



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The Association of Hospital Rate of Delayed Epinephrine Administration With Survival to Discharge for Pediatric Nonshockable In-Hospital Cardiac Arrest

Patient Characteristics	Overall, *n* (%)	Quartile 1 (0% – < 7.1%)	Quartile 2 (7.1% – < 15.6%)	Quartile 3 (15.6% – < 25%)	Quartile 4 (25–80%)	*p*
Number of hospitals	69	15	20	21	13	
Number of patients	1,462	248	730	388	96	
Arrest witnessed	1338 (91.5)	233 (94.0)	683 (93.6)	351 (90.5)	71 (74.0)	< 0.0001
Arrest monitored	1,247 (85.3)	214 (86.3)	653 (89.5)	312 (80.4)	68 (70.8)	< 0.0001
Preexisting mechanical ventilation	735 (50.3)	127 (51.2)	414 (56.7)	166 (42.8)	28 (29.2)	< 0.0001

Hospital Characteristics	Overall, *n* (%)	Quartile 1 (0% – < 7.1%)	Quartile 2 (7.1 – < 15.6)	Quartile 3 (15.6 – < 25%)	Quartile 4 (25–80%)	*p*
Eligible arrests per 1,000 admissions, mean ± SD	1.41 ± 2.16	1.00 ± 2.12	2.52 ± 2.88	1.21 ± 1.68	0.53 ± 0.70	0.0028
Number of events in study sample, mean ± SD	21.19 ± 24.45	16.53 ± 13.01	36.50 ± 32.69	18.48 ± 2 2.56	7.38 ± 3.55	< 0.0001

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The Association of Hospital Rate of Delayed Epinephrine Administration With Survival to Discharge for Pediatric Nonshockable In-Hospital Cardiac Arrest

TABLE 3. Hospital- and Patient-/Event-Level Predictors of Delayed Epinephrine Administration in Hierarchical Model With Hospital-Level Random Effects and Patient-/Event-Level Fixed Effects

Characteristics	Adjusted OR	95% Lower CI	95% Upper CI	*p*
Patient-level covariates				
Age (unit change/mean)	0.96	0.93	0.99	0.0219
Arrest monitored	0.51	0.35	0.76	0.0010
Asystole first pulseless rhythm	1.54	1.10	2.16	0.0115
Preexisting mechanical ventilation	0.42	0.28	0.63	< 0.0001
Insertion of an airway	1.86	1.27	2.73	0.0015
Hospital-level covariates				
Bed size < 200 vs ≥ 500	3.07	1.22	7.73	0.0175
ICU location	0.51	0.36	0.74	0.0004

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The Association of Hospital Rate of Delayed Epinephrine Administration With Survival to Discharge for Pediatric Nonshockable In-Hospital Cardiac Arrest

TABLE 4. Patient-Level Survival Outcomes, Stratified by Hospital Quartiles for Rates of Delayed Epinephrine

Patient Outcomes	Overall ($n = 1,462$)	Quartile 1: (0–7.1%) ($n = 248$)	Quartile 2: (7.1–15.6%) ($n = 730$)	Quartile 3: (15.6–25%) ($n = 388$)	Quartile 4: (25–80%) ($n = 96$)	p (Trend)
Unadjusted patient-level survival, mean ± SD						
ROSC	0.61 ± 0.49	0.62 ± 0.49	0.64 ± 0.48	0.60 ± 0.49	0.36 ± 0.48	< 0.001
24 hr	0.51 ± 0.50	0.50 ± 0.50	0.55 ± 0.50	0.49 ± 0.50	0.29 ± 0.46	< 0.001
To discharge	0.33 ± 0.47	0.33 ± 0.47	0.35 ± 0.48	0.32 ± 0.47	0.20 ± 0.40	0.03
To discharge with favorable neurologic outcome[b]	0.16 ± 0.36	0.14 ± 0.34	0.19 ± 0.39	0.13 ± 0.34	0.06 ± 0.23	0.002
Model adjusted patient-level survival, mean ± SD[a]						
ROSC	0.52 ± 0.06	0.54 ± 0.07	0.53 ± 0.05	0.52 ± 0.06	0.31 ± 0.06	0.019
24 hr	0.45 ± 0.06	0.46 ± 0.07	0.47 ± 0.05	0.44 ± 0.06	0.26 ± 0.05	0.018
To discharge	0.27 ± 0.05	0.29 ± 0.06	0.28 ± 0.05	0.27 ± 0.05	0.17 ± 0.04	0.20
To discharge with favorable neurologic outcome[b]	0.14 ± 0.39	0.12 ± 0.04	0.15 ± 0.04	0.14 ± 0.04	0.05 ± 0.02	0.16

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The Association of Hospital Rate of Delayed Epinephrine Administration With Survival to Discharge for Pediatric Nonshockable In-Hospital Cardiac Arrest

- A: Hospital rate of delayed epinephrine was

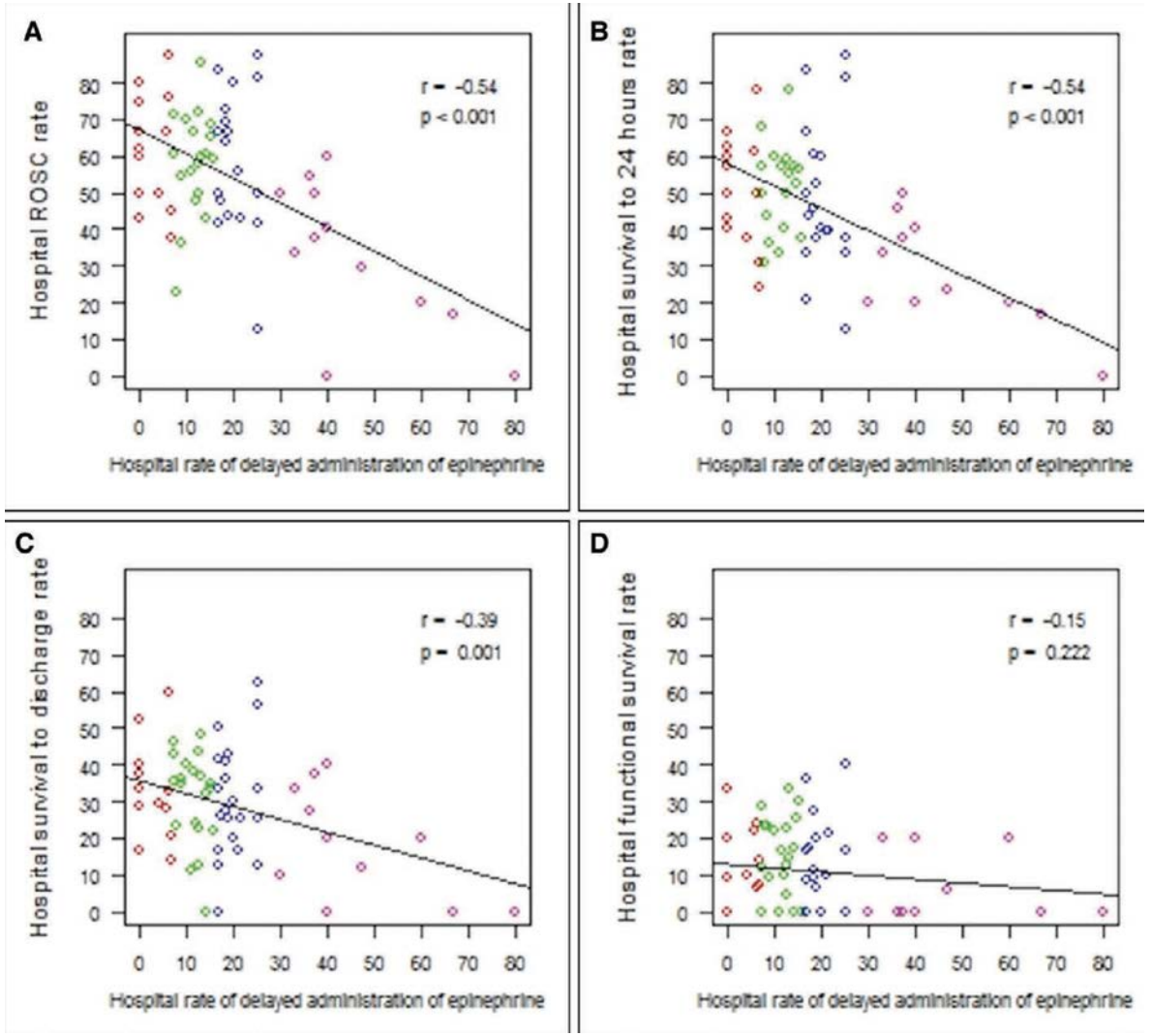
  inversely correlated with unadjusted rates of

  ROSC (ρ = −0.54; p ≤ 0.001);

- B: 24-hour survival (ρ = −0.54; p ≤ 0.001);

- C: Survival to hospital discharge (ρ = −0.39; p = 0.001); but

- D: Not survival to discharge with favorable neurologic outcome (ρ = −0.15; p = 0.222)



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The Association of Hospital Rate of Delayed Epinephrine Administration With Survival to Discharge for Pediatric Nonshockable In-Hospital Cardiac Arrest

TABLE 5. Hospital Outcomes, Stratified by Hospital Quartiles for Rates of Delayed Epinephrine

Hospital Outcomes	Overall $n = 69$	Quartile 1: (0–7.1%) ($n = 15$)	Quartile 2: (7.1–15.6%) ($n = 20$)	Quartile 3: (15.6–25%) ($n = 21$)	Quartile 4: (25–80%) ($n = 13$)	p (Trend)
Unadjusted hospital-level survival, mean ± SD						
ROSC	0.55 ± 0.19	0.61 ± 0.15	0.59 ± 0.14	0.60 ± 0.19	0.35 ± 0.21	0.003
24 hr	0.47 ± 0.18	0.53 ± 0.15	0.51 ± 0.12	0.49 ± 0.19	0.28 ± 0.14	< 0.001
To discharge	0.29 ± 0.14	0.33 ± 0.12	0.31 ± 0.13	0.30 ± 0.15	0.20 ± 0.15	0.11
To discharge with favorable neurologic outcome[b]	0.11 ± 0.11	0.10 ± 0.11	0.15 ± 0.11	0.11 ± 0.12	0.07 ± 0.09	0.11
Model adjusted hospital-level survival, mean ± SD[a]						
ROSC	0.50 ± 0.05	0.55 ± 0.05	0.54 ± 0.05	0.54 ± 0.05	0.33 ± 0.05	0.006
24 hr	0.44 ± 0.05	0.50 ± 0.05	0.48 ± 0.04	0.45 ± 0.04	0.27 ± 0.04	0.002
To discharge	0.26 ± 0.04	0.30 ± 0.05	0.28 ± 0.04	0.27 ± 0.04	0.19 ± 0.04	0.24
To discharge with favorable neurologic outcome[b]	0.12 ± 0.03	0.10 ± 0.04	0.16 ± 0.03	0.12 ± 0.03	0.071 ± 0.03	0.20

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The Association of Hospital Rate of Delayed Epinephrine Administration With Survival to Discharge for Pediatric Nonshockable In-Hospital Cardiac Arrest

Conclusions:

- Delays in epinephrine following pediatric nonshockable IHCA are common and there is substantial hospital variation.

- Differences found across hospitals to account for this variation included:
  - patient/event-level predictors of asystole and insertion of an ETT
  - hospital-level predictors of bed volume < 200 beds vs > 500 beds and ICU location

- Hospital rates of ROSC, 24-hr survival and survival to discharge are inversely correlated with hospital rates of delayed epinephrine.

- After adjusting for relevant factors, patient- and hospital-level delayed epinephrine administration was associated with lower event and 24-hour survival across increasing quartiles of epinephrine delay.

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Final Thoughts:

- Given extensive differences in epinephrine administration time across institutions and the recognized impact of delayed epinephrine on survival, new approaches to improve hospital performance in epinephrine administration time could represent a critical area for quality improvement.

- Further studies are needed to determine if improving hospital performance on time to epinephrine administration, especially at hospitals with poor performance on this metric, will lead to improvement in outcomes.

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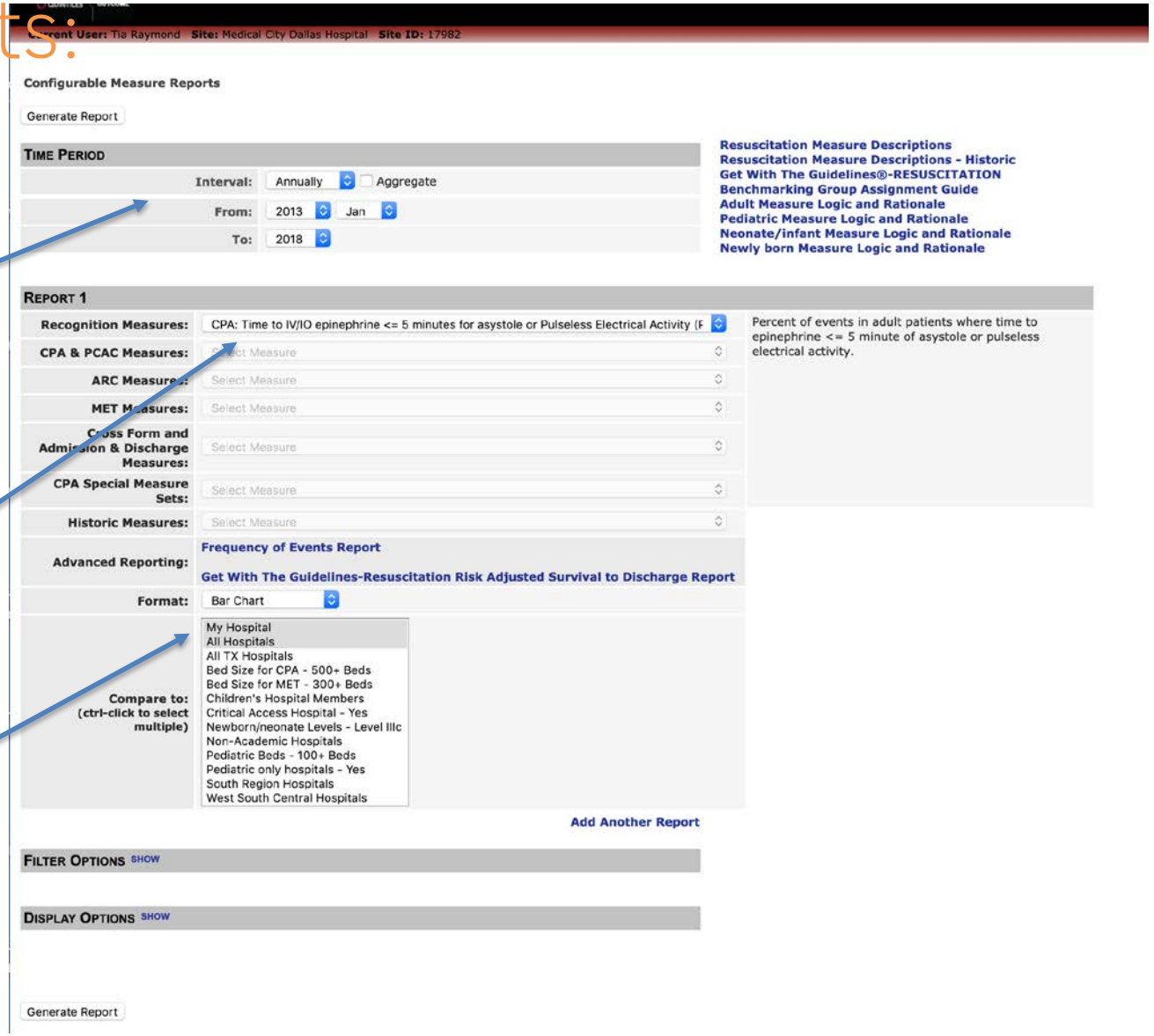
Commonly Held Belief Without Data:

The outcome from in-hospital cardiac arrests is good because the hospital environment contains large numbers of highly qualified health-care providers with the necessary training and equipment to respond promptly to the event.


HOW YOU DOING?
How Do You Know?

How to Generate Reports:

1. Select REPORTS tab
2. Select CONFIGURABLE MEASURE REPORTS
3. Select TIME PERIOD
4. Select RECOGNITION MEASURES: CPA Time to epinephrine for age group wanted ADULT, PEDI, NEO
5. Select MY HOSPITAL and comparison group if wanted
6. Select GENERATE REPORT



CPA: Time to IV/IO epinephrine <= 5 minutes for asystole or Pulseless Electrical Activity (PEA)

Percent of events in adult patients where time to epinephrine <= 5 minute of asystole or pulseless electrical activity.
Time Period: 01/2013 - 12/2018; **Site:** Medical City Dallas Hospital (17982)

CPA: Time to IV/IO epinephrine <= 5 minutes for asystole or Pulseless Electrical Activity (PEA)				
Benchmark Group	**Time Period**	**Numerator**	**Denominator**	**% of Patients**
My Hospital	2013	16	17	94.1%
	2014	79	87	90.8%
	2015	61	63	96.8%
	2016	57	64	89.1%
	2017	65	67	97.0%
	2018	17	18	94.4%
All Hospitals	2013	15032	16305	92.2%
	2014	16407	17375	94.4%
	2015	16922	17845	94.8%
	2016	19200	20153	95.3%
	2017	20765	21780	95.3%
	2018	21252	22189	95.8%

Summary:

- Survival rates for adult and pediatric pulseless IHCA have improved drastically over the last decade for GWTG-R hospitals.
- Epinephrine is the only vasopressor recommended for adult and pediatric cardiac arrest according to 2015 ACLS and PALS Guidelines.
- For adult and pediatric non-shockable IHCA, earlier administration of epinephrine is associated with improved ROSC, 24-hr survival, survival to discharge, and survival with favorable neurologic outcome.
- Hospital-level delayed epinephrine is associated with lower event and 24-hr survival across increasing quartiles of epinephrine delay.

Summary

We work hard to provide an efficient and consistent means for hospitals to effectively collect and analyze resuscitation data, thereby equipping them to evaluate equipment, resources, training, improve practices…

and ultimately save lives!

GET WITH THE GUIDELINES®
RESUSCITATION

WHEN YOU'RE WORKING TO SAVE A PATIENT'S LIFE,
SO ARE WE.

THANK YOU!

YOUR EFFORTS ARE SAVING LIVES

Questions?

Contact Us to Learn More

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