

American Heart Association®

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Resuscitation

# INCIDENCE MEASURES OVERVIEW

Monday January 7, 2019  
12:00 PM – 1:00pm Central

Presenters:

Dana P. Edelson, MD, MS  
Jeanette Previdi, MPH, BSN, RN, CPPS  
Christina Sterzing, RHIA



# Meet Our Presenters

## **Dana Edelson, MD, MS, FAHA, FHM - Disclosures**

Hospitalist & Executive Medical Director For Rescue Care, University Of Chicago

Research support:

- Philips Healthcare
- Early Sense

Ownership interests:

- Founder and CEO, QuantHC
- Patent pending, ARCD.P0535US.P2

## **Jeanette Previdi, MPH, BSN, RN, CPPS**

Patient Safety and Quality Advisor  
Patient Safety and Quality Department

## **Christina Sterzing, RHIA**

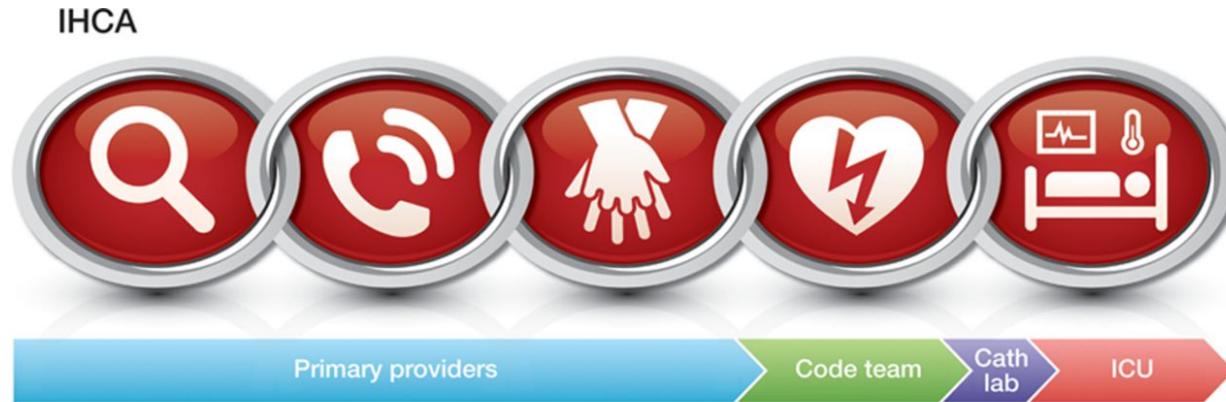
Healthcare Data Manager  
American Heart Association



# THE MAJORITY OF IHCAS ARE PREDICTABLE AND POTENTIALLY PREVENTABLE

Publication	Abnormal Physiology/ Total arrests	Within
Franklin, Crit Care Med, 1994	99/150 (66%)	6 hrs
Schein, Chest, 1990	54/64 (84%)	8 hrs
Kause, Resuscitation, 2004	112/141 (79%)	24 hrs

# PREVENTION LINK ADDED TO IHCA CHAIN OF SURVIVAL IN 2015



# MEASURING OUTCOMES OF IHCA IS NOT ENOUGH

IHCA INCIDENCE RATES ARE INVERSELY CORRELATED WITH SURVIVAL RATES

## FACTORS SHOWN TO IMPACT IHCA INCIDENCE INCLUDE:

- **NURSE-BED STAFFING RATIOS**

Chen L, et al. JAMA Intern Med. 2013;173(13):1186-1195.

- **ICU BED AVAILABILITY**

Town J, et al. Crit Care Med. 2014 Sep;42(9):2037-41.

- **OTHER PATIENTS DETERIORATING NEARBY**

Volchenbom S et al, JAMA. 2016;316(24):2674-2675.

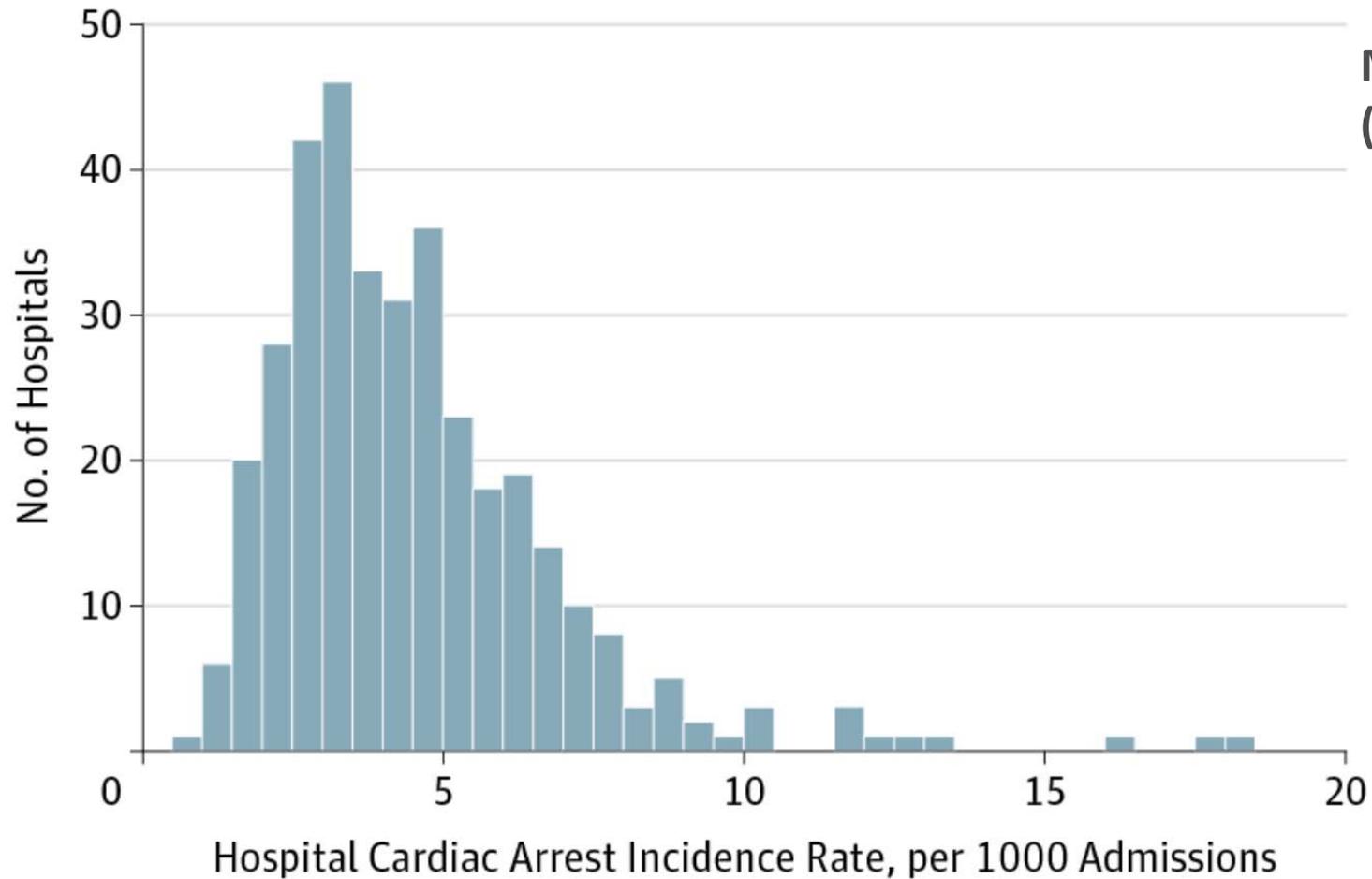
- **RAPID RESPONSE ACTIVATIONS**

Jones D, et al. Critical Care 2005, 9:R808-R815



# HOSPITAL VARIATION IN IHCA INCIDENCE

## GWTG-R DATA

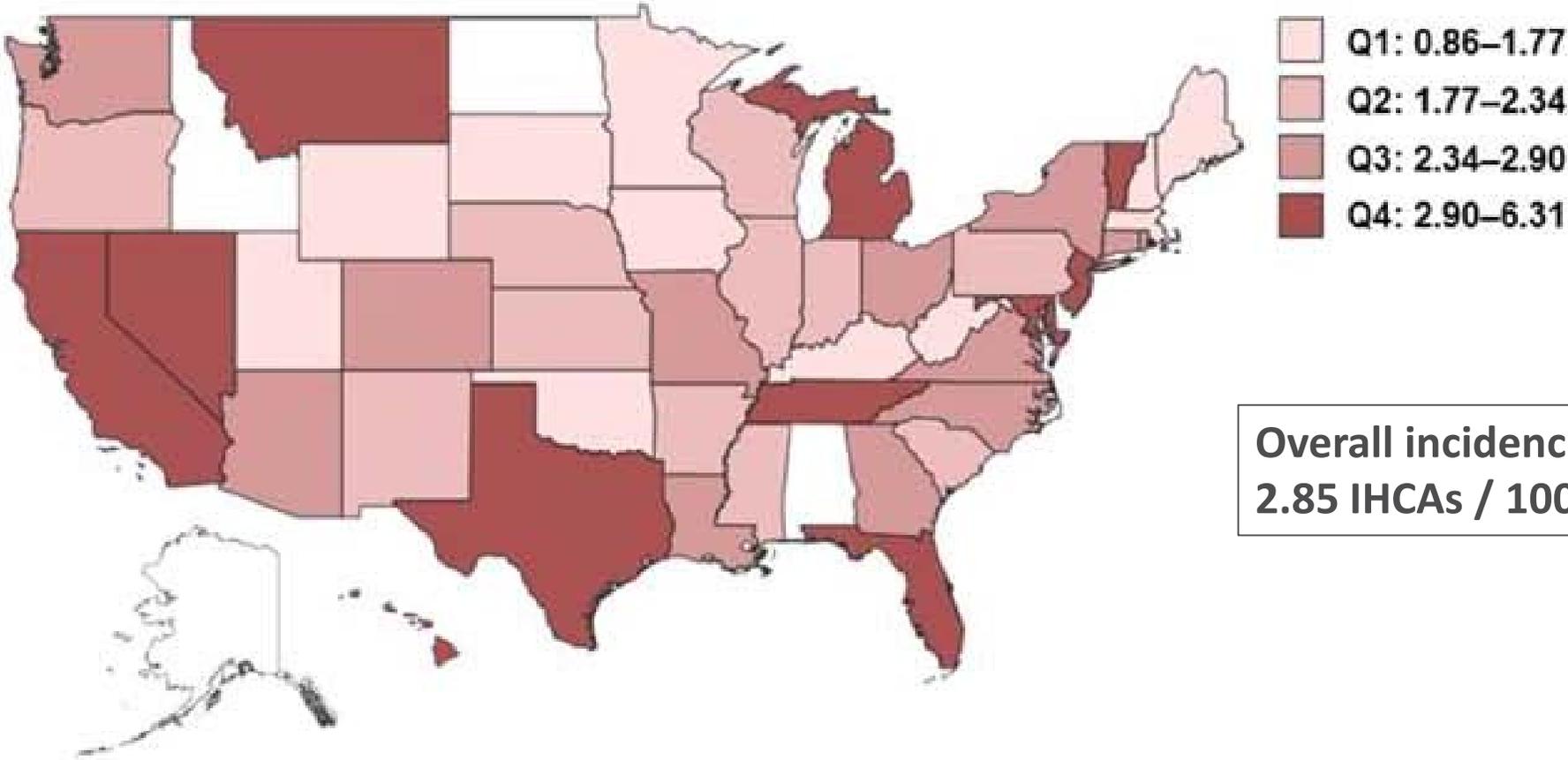


**Median: 4.02 / 1000 admissions  
(IQR 2.95-5.65)**

JAMA Intern Med. 2013;173(13):1186-1195.  
doi:10.1001/jamainternmed.2013.1026

# REGIONAL DISTRIBUTION OF IHCA BY STATE

NATIONAL INPATIENT SAMPLE DATA

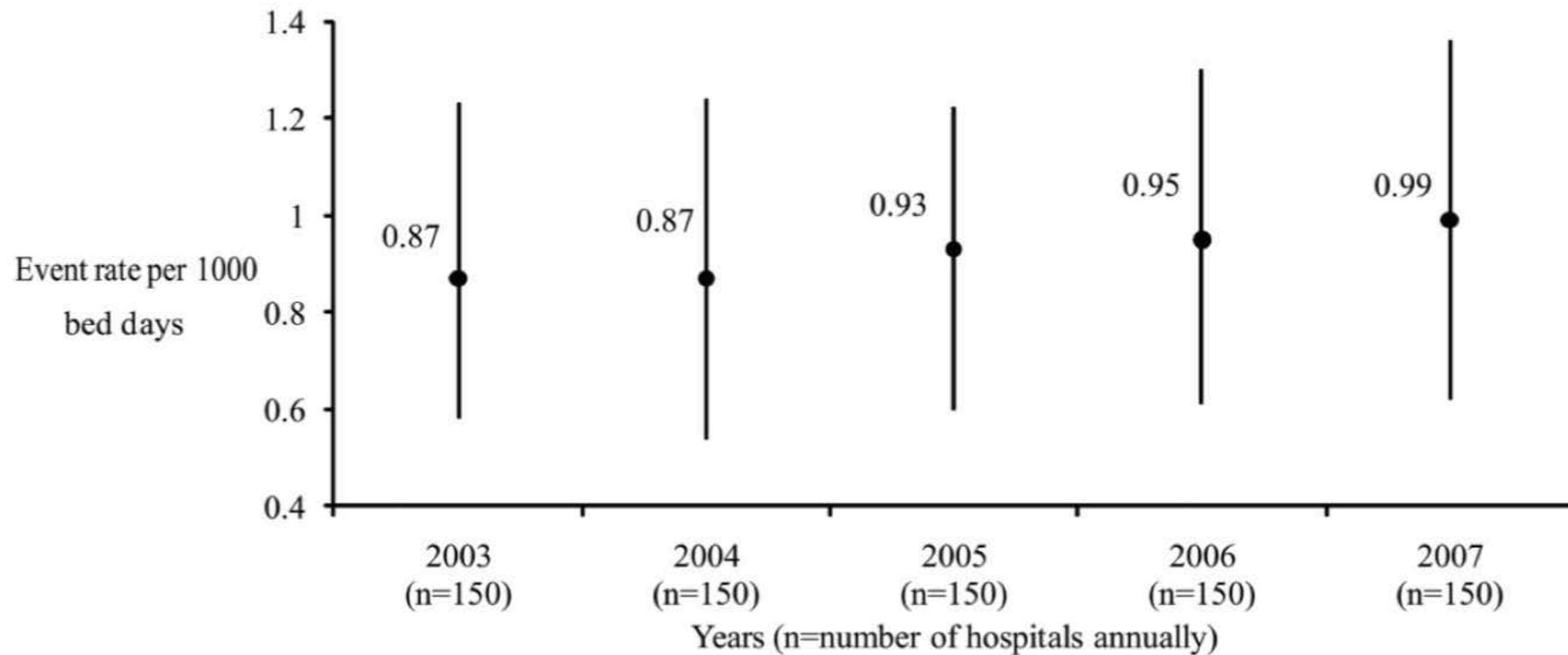


*Circulation.* 2015;131:1415-1425. DOI: 10.1161/CIRCULATIONAHA.114.014542.

# IHCA INCIDENCE VARIATION BY YEAR

GWTG-R + ANNUAL SURVEY DATA

Mean IHCA event rate:  
9.2 / 10,000 bed-days (IQR 5.8 to 12 / 1000)



# MEASURING INCIDENCE OF IHCA

## NUMERATOR CONSIDERATIONS

- Billed vs reported
- Index vs all
- Include vs exclude: DNAR, staff/visitors, ED, ambulatory/observation

## DENOMINATOR CONSIDERATIONS

- Admissions vs patient days
- Include vs exclude: DNAR, staff/visitors, ED, ambulatory/observation

# MEASURING INCIDENCE: TOP CANDIDATES

## INDEX IHCA / 1000 ADMISSIONS (OPTION)

- Most commonly reported measure
- Ignores multiple arrests in one patient
- Noise created by ICU and pediatric admissions and variations in length of stay

## IHCA /10,000 HOSPITALIZED DAYS (PREFERRED)

- Allows for more than one per patient
- Allows measurement by specific populations: ward, pediatrics, etc
- Similar to how Clostridium Difficile rates are measured

# PROPOSED OUTCOME MEASURE: WARD CARDIAC ARREST RATE

## THIRD INTERNATIONAL CONSENSUS CONFERENCE ON RAPID RESPONSE SYSTEMS AND MEDICAL EMERGENCY TEAMS



**NUMERATOR:** NON-ICU, NON-PROCEDURAL IHCA

**DENOMINATOR:** 10,000 ADULT WARD DAYS

**INCLUSIONS:** STEP-DOWN/HDU, OBSERVATION PATIENTS/DAY CASES, WARD PATIENTS IN DIAGNOSTIC AREAS. NUMERATOR INCLUDES NON DNR PATIENTS FOUND DEAD IN BED.

**EXCLUSIONS:** ALL ICU PATIENTS REGARDLESS OF LOCATION (EG DIAGNOSTIC AREA). ALL ARRESTS OCCURRING IN AN OR, ER, PACU, CATH LAB, OR OTHER PROCEDURAL AREA, REGARDLESS OF ADMISSION STATUS. OUTPATIENTS/VISITORS/EMPLOYEES. EXCLUDES DNR DEATHS.

**LEVEL:** ESSENTIAL

# COMPARING METRICS

VIZIENT MEMBER SURVEY [N=49]

Measure	Median Rate (IQR)
Billed IHCA / 1,000 admissions	5.86 (4.42 – 6.88)
Billed IHCA / 10,000 total patient days	9.85 (7.75 – 12.3)
Reported Ward IHCA / 10,000 ward days	4.46 (2.46 – 7.21)

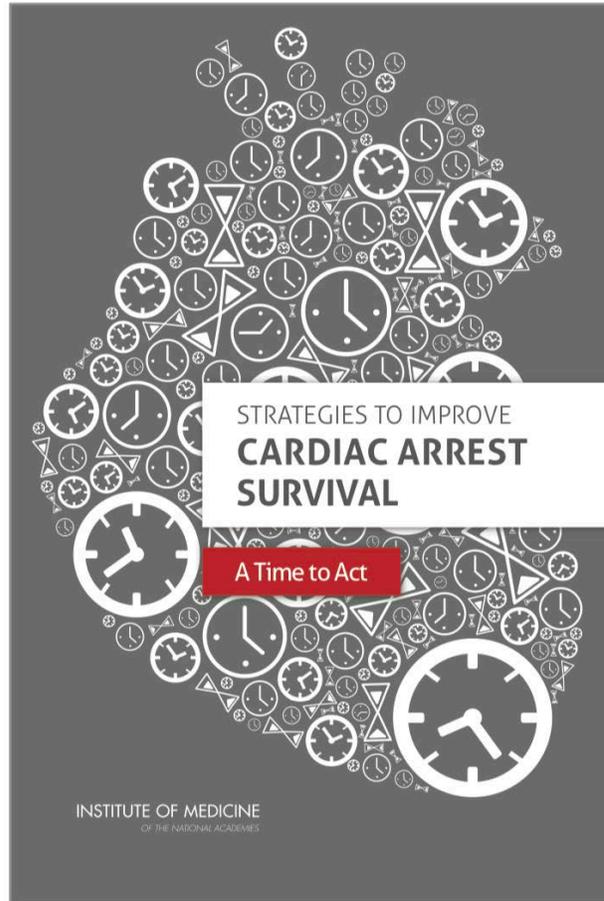
Jeanette Previdi, MPH, BSN, RN, CPPS

## **CALL TO ACTION:**

# **Setting National Accreditation Standards For Cardiac Arrest For Hospital And Healthcare Systems**

# 2015 IOM REPORT

## STRATEGIES TO IMPROVE CARDIAC ARREST SURVIVAL - A TIME TO ACT



“THE IOM COMMITTEE RECOMMENDS THAT A NATIONAL REGISTRY BE ESTABLISHED TO TRACK CARDIAC ARREST EVENTS AND MAKE INFORMATION ABOUT CARDIAC ARREST INCIDENCE AND OUTCOMES PUBLICLY AVAILABLE.

THIS WOULD HELP INCREASE PUBLIC AWARENESS RELATED TO CARDIAC ARREST, IMPROVE ACCOUNTABILITY FOR EMS SYSTEM AND HEALTH CARE SYSTEM PERFORMANCE, AND PINPOINT INTERVENTIONS THAT CAN BEST IMPROVE THE PUBLIC’S HEALTH.

FURTHERMORE, A STANDARD SET OF DEFINITIONS AND DATA ELEMENTS ACROSS LOCAL, STATE, NATIONAL, AND INTERNATIONAL LINES WOULD HELP TO REDUCE UNNECESSARY CONFUSION IN AN ALREADY COMPLEX FIELD.”

# WHY SET NATIONAL ACCREDITATION STANDARDS FOR CARDIAC ARREST FOR HOSPITAL & HEALTH CARE SYSTEMS?

To Respond To The Institute Of Medicine (IOM) Report – “Strategies To Improve Cardiac Arrest Survival: A Time To Act (2015)”

- Recommendation #4: Set National Accreditation Standards for Cardiac Arrest for Hospital and Health Care Systems

To Help Achieve The American Heart Association’s Emergency Cardiovascular Care (ECC) Committee’s 10-year Goal For Doubling Out-of-hospital (OHCA) And In-hospital (IHCA) Cardiac Arrest Survival

- Incidence of IHCA is approximately 209,000 people per year in U.S. with mean event rate of 0.92/1000 bed days
- IHCA survival is low and ranges from 19 - 38%
  - (Merchant RM et al. Incidence of treated cardiac arrest in hospitalized patients in the United States. Crit Care Med. 2011;39:2401-2406)

To Better Identify Disparities And Highlight Improvement Opportunities For IHCA Survival

- Measurement & reporting of key metrics are essential in order to benchmark care, address challenges of resuscitation and highlight opportunities for improvement



# WHY SET NATIONAL ACCREDITATION STANDARDS FOR CARDIAC ARREST FOR HOSPITAL & HEALTH CARE SYSTEMS?

Mandatory Reporting Of Certain Process Measures (I.E. AMI And CHF Core Measures) And Outcome Measures (I.E. Mortality, Readmissions, Patient Safety Indicators And Hospital-acquired Conditions) Have Lead To Vast Improvements Over Time, Especially When Tied Into Public Reporting and/or Financial Penalties

- Voluntary reporting of IHCA data is low across the United States (ex. <10% of hospitals report cardiac arrest data to GWTG-Resuscitation)
- There are no financial or quality incentives for hospitals to report cardiac arrest data

# WHY SET NATIONAL ACCREDITATION STANDARDS FOR CARDIAC ARREST FOR HOSPITAL & HEALTH CARE SYSTEMS?

Cardiac Arrest Survival Is Generally Higher When It Occurs In The Critical Care Setting, Yet In-hospital Cardiac Arrests Outside An ICU Setting Occur Approximately 33% Of The Time In Adult Patients And 5% Of The Time In Pediatric Patients

- Location of cardiac arrest and many other important metrics are not part of any mandatory cardiac arrest reporting requirements
- A number of early warning scores are available to help identify adult and pediatric patients at risk for deterioration
- It is important to understand the IHCA event rate in terms of arrests that are not inevitable and are preventable
- There may be financial and quality of life burdens associated with poor neurological outcomes after resuscitation in less than ideal settings

# WHY SET NATIONAL ACCREDITATION STANDARDS FOR CARDIAC ARREST FOR HOSPITAL & HEALTH CARE SYSTEMS?

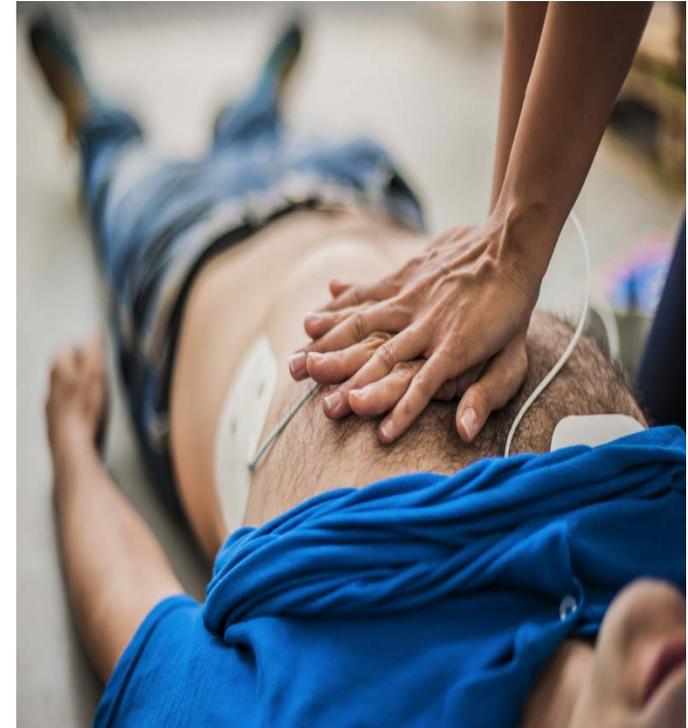
## Presence Of Advance Directives and/or Do-Not-Resuscitate (DNR) Orders May Decrease Incidence Of Resuscitation When Not Appropriate

- The inclusion of an advance directive in the hospital medical record, even if one does exist, is low
- Presence of advance directives and/or DNR orders are not included as part of any mandatory cardiac arrest reporting requirements
- There may be financial and quality of life burdens associated with poor outcomes after resuscitative efforts in patients for whom resuscitation may have been inappropriate and/or against their wishes

# CURRENT STATE

## NATIONAL DATA EXISTS FOR OUT OF HOSPITAL ARREST (OHCA)

- Cardiac Arrest Registry to Enhance Survival (CARES)
- Resuscitation Outcomes Consortium (ROC)
- Participation is voluntary, of limited scope and primarily a research tool



# CURRENT STATE

- Get With The Guidelines™ (GWTG) registry captures limited and partial data
- Unknown number of hospitals and hospital systems collect resuscitation data
- No centralized data
- No standardized measures





# Call to Action

LET'S WORK TOGETHER TO SET NATIONAL ACCREDITATION STANDARDS FOR CARDIAC ARREST.

LET'S GIVE HOSPITALS & HEALTH CARE SYSTEMS THE TOOLS THEY NEED TO BE ABLE TO:

- Identify opportunities for improvement
- Benchmark themselves against high performing organizations across the country
- Make a difference in improving survival from in-hospital cardiac arrest!

***AFTER ALL, ISN'T CARDIAC ARREST THE ULTIMATE POTENTIALLY PREVENTABLE HOSPITAL-ACQUIRED CONDITION?***

# THEY ARE COUNTING ON YOU!



**Thank you for all that you do to  
improve the quality of care for our  
patients!**



Christina Sterzing, RHIA

# PMT OVERVIEW

## REPORTS OVERVIEW

- Annual incidence of adult in-hospital cardiac arrests occurring in a non-critical care area per 10,000 adult non-critical bed days.
- Annual incidence of pediatric in-hospital cardiac arrests occurring in a non-critical care area per 10,000 pediatric non-critical bed days.
- Annual incidence of adult in-hospital cardiac arrests occurring in a critical care area per 10,000 adult critical bed days.
- Annual incidence of in-hospital cardiac arrests occurring in a critical care area per 10,000 pediatric and neonatal critical care bed days stratified by the following populations:
  - Pediatric  $\leq 1-18$
  - Neonate  $\geq 24$  hours -  $< 1$
  - Newly born  $< 24$  hours and born this admission

## ADDITIONAL INFORMATION

- Data entry is optional for the 2019 recognition submission period. We are considering making this a requirement for Get With The Guidelines-Resuscitation Recognition going forward.
- Data for the previous year should be entered by February 15, 2019.
- See webinar handouts for a printable CRF and data definitions.
- Data will be preserved year over year for Contiguous Reporting

# WHERE TO ENTER DATA IN THE PMT

ON THE COMMUNITY PAGE,  
SCROLL DOWN TO “MY  
HOSPITAL CHARACTERISTICS”.

CLICK ON “UPDATE RESUS SITE  
CHARACTERISTICS”.



GET WITH THE  
GUIDELINES.

Community Page

## My Hospital Characteristics

To update billing contacts, email:  
[provider.collections@quintiles.com](mailto:provider.collections@quintiles.com)

[Update HF Site Characteristics](#)

[Update Stroke Site Characteristics](#)

[Update Resus Site Characteristics](#)

# WHERE TO ENTER DATA IN THE PMT (CONT.)

[Back to My Account](#)

## Organization Information

Organization Contact Information	
Organization Name	<input type="text"/>
Phone Number	<input type="text"/>
Fax Number	<input type="text"/>

Get With The  
Guidelines®-RESUSCITATION  
Benchmarking Group Assignment Guide

ON THE SITE  
CHARACTERISTICS  
FORM, SCROLL  
DOWN TO "IHCA"

IHCA	
How many med/surg bed days?	<input type="text"/>
How many ped ward bed days?	<input type="text"/>
Total adult admissions	<input type="text"/>
Total ped admissions	<input type="text"/>
Total neonate/infant	<input type="text"/>
Total newly born	<input type="text"/>
Adult ICU bed days	<input type="text"/>
Ped ICU bed days	<input type="text"/>
NICU bed days	<input type="text"/>

MAKE SURE YOU  
"SAVE CHANGES"

A red button with the text "Save Changes" in white, highlighted with a red border and a white circle.

# HOW TO FIND THE DATA DEFINITIONS IN THE PMT

DATA DEFINITIONS ARE LOCATED IN THE CODING INSTRUCTIONS.

ON THE PATIENT GRID, CLICK ON "CODING INSTRUCTIONS"

[User Manual](#) | [Print Blank Forms](#) | [Coding Instructions](#)

Search By Patient ID	<input type="text"/>
Form to Search	CPA Event
Completeness	All Forms
Date Restriction	Earliest <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> Latest <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>
Date Range	All Dates
Patient Population	All
Patients Per Page	10
Sort Field and Order	Admit/Discharge Descending

[\[-\] Hide Advanced Search](#)

**Coding Instructions**

**Legend**

<i>Italic Text</i>	= Upcoming
<b>MM/DD/YYYY</b>	= Incomplete
MM/DD/YYYY	= Complete

# Get With The Guidelines® - Resuscitation PMT® Coding Instructions

Last Updated December 2018

## Table of Contents

[Optional Fields](#)

[Scoring Definitions](#)

[IHCA Site Characteristics](#)

Highlighted Text = Updated since last version of document

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SCROLL DOWN TO  
LOCATE THE LINK TO  
“IHCA SITE  
CHARACTERISTICS”  
TOWARD THE END OF  
THE TABLE OF  
CONTENTS

# DATA DEFINITIONS

- Note: all inpatients and observation patients should be included.
- Med/surg bed days: the number of occupied bed days in the adult med/surg units (non-procedural, non-critical, and licensed beds) January 1 through December 31.
- Ped ward bed days: the number of occupied bed days in all pediatric med/surg units (non-procedural, non-critical, and licensed beds) January 1 through December 31.
- Total adult admissions: enter the total adult admissions from January 1 through December 31 for patients 18 years or older.
- Total ped admissions: enter the total pediatric (patients  $\geq 1$  year old to  $< 18$  years old) admissions from January 1 through December 31.

## DATA DEFINITIONS (CONT.)

- Total neonate/infant admissions: Enter the total neonate/infant (patients >24 hours old to <1 years old) admissions from January 1 through December 31.
- Total newly born admissions: Enter the total newly born (born this admission or <24hrs old) admissions from January 1 through December 31.
- Adult ICU bed days: The number of occupied bed days in the all Adult Intensive Care Units from January 1 through December 31.
- Ped ICU bed days: The number of occupied bed days in all Pediatric Intensive Care Units from January 1 through December 31.
- NICU (neonatal intensive care unit) bed days: The number of occupied bed days in all Neonatal Intensive Care Units from January 1 through December 31.

# WHERE CAN YOU FIND OCCUPIED BED DAYS AND ADMISSIONS INFORMATION?

- Start with your Finance Office
- Other departments to contact:
  - Quality and/or Nursing Departments
  - CFO or Finance Office
  - VP Quality
  - CNO Office
  - Administration
  - Business Intelligence (BI)

## EXAMPLES

- The finance department may maintain this as a standard report provided to each unit for budgeting purposes.
- This information is provided by Unit Managers via the midnight census to Administration.
- In some institutions, this information may have been developed by HIM as part of their overall finance and billing.

# CONTACT US TO LEARN MORE

Tanya Lane Truitt, RN MS

Senior Manager QSI Programs & Operations: Resuscitation & HF

Get With The Guidelines®

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Liz Olson

Program Manager, Get With The Guidelines – Resuscitation & HF

[Liz.Olson@heart.org](mailto:Liz.Olson@heart.org)

**Thank You For Your Active Participation  
and Contributions to  
Get With The Guidelines-Resuscitation!**