

Effecting Neurologically-Intact Survival for Children with Out-of-Hospital Cardiac Arrest



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Very Early Interest in Mouth-to-Mouth ...

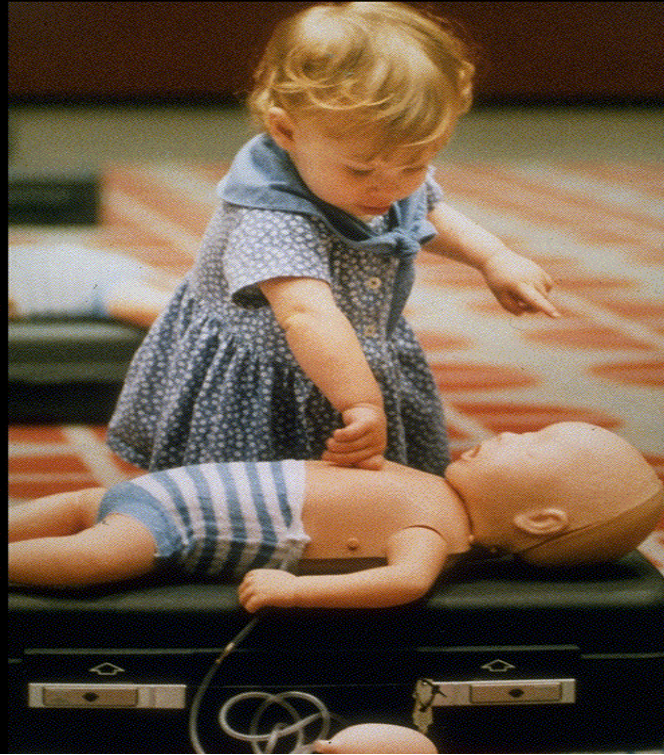


As an Infant, Paul Pepe Conducted Oral Explorations of the Universe...

Dr. Paul Banerjee and EMS Chief, Raf Vittone
Polk County (FL) Fire Rescue Department



What's the Conventional Wisdom About POHCA Today?



Introduction

Pediatric Out-of-Hospital Cardiac Arrest (POHCA) :

- **Grim Survival Chances Nationwide**
- **POHCA Intimidating for Most Rescuers:**
*Infrequent Use of Pedi ALS Skills, Volatile Setting,
Psychological Challenge, Kids Often Easy to Carry ...*
- ***As a Result:***
Scoop & Run Practices Have Evolved

In Addition ...



- **Conventional Wisdom: “Don’t Intubate”**
- **“Respiratory” Cause -- Focus on Breathing**
- **So Routinely See R.R. >> 6 / minute**
- **First Dose of Epinephrine Delayed**

What Would Happen If We Now Focus on Rapid On-Scene Care...



.... and Use Physiologically-Appropriate Ventilatory Techniques for Cardiac Arrest?

Methods (cont.)



Interventions:

- 2012: Traditional POHCA Care (i.e. very limited scene time)
- 2014: Prioritized On-Scene Resuscitation (phase I Δ 's)
that Expedited Drug Delivery via Direct I-O
& Intubation (controlled ventilation rates $\sim 6/\text{min}$)

The modified training included psychological and skills-enhancing tools to provide greater confidence in providing on-scene care.

- 2016: Began Techniques to Dose/Prepare Drugs
Before Arriving On-Scene (phase II Δ 's)

..... No other relevant modifications were made system-wise.

System 1 Thinking



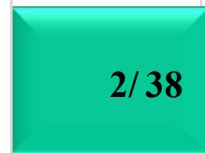
Results ?

Pediatric Cardiac Arrest Survivors

Two Years Before - and Two Years After - the Training/Protocol Change

■ Survived Intact ■ ROSC $p = 0.0006$

**2012
- 2013**



2/38

No Survivors

0

10%

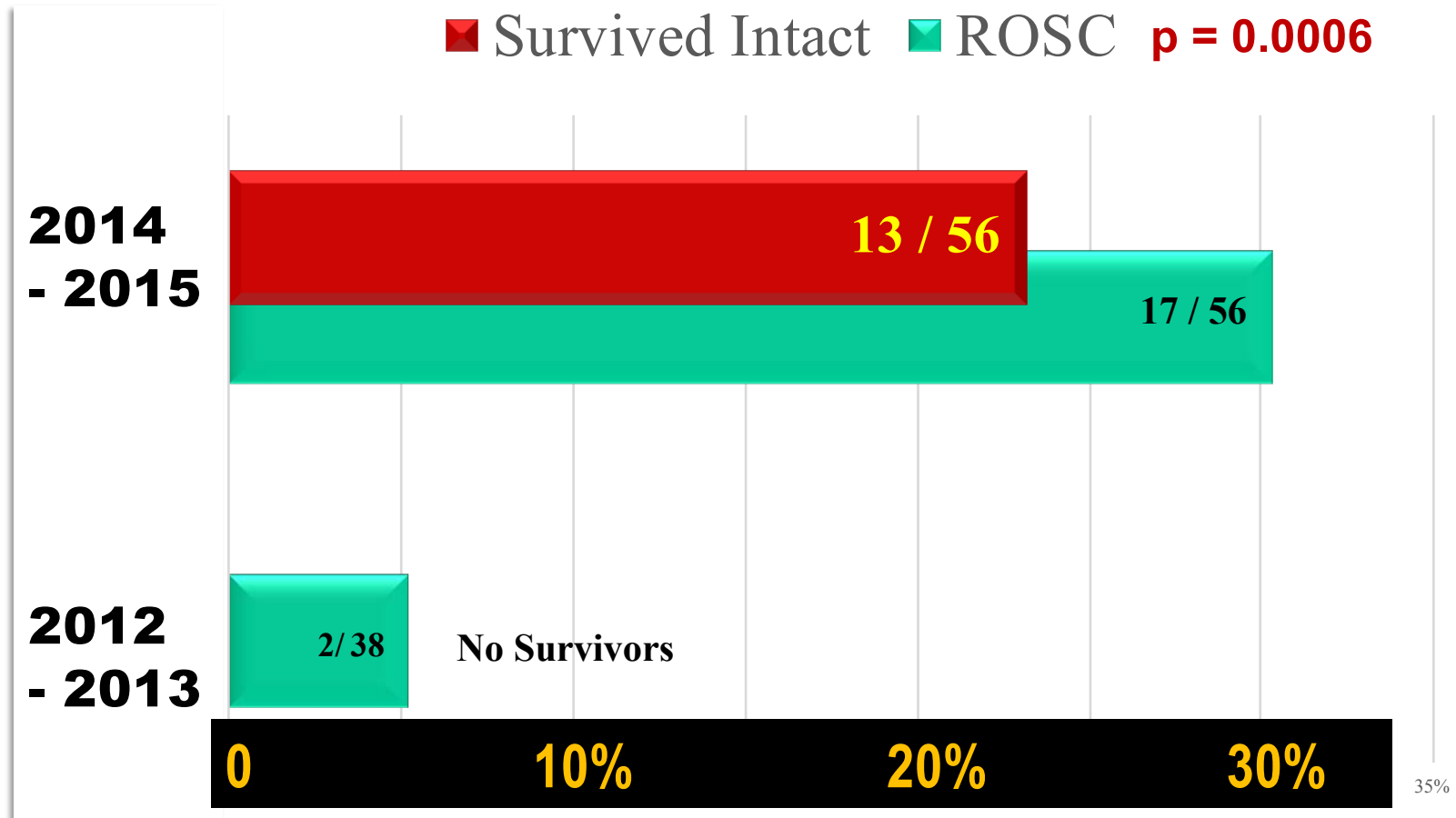
20%

30%

35%

Pediatric Cardiac Arrest Survivors

Two Years Before - and Two Years After - the Training/Protocol Change





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RESUSCITATION

Original Investigation

Early On-Scene Management of Pediatric Out-of-Hospital Cardiac Arrest Can Result in Improved Chances for Neurologically-Intact Survival

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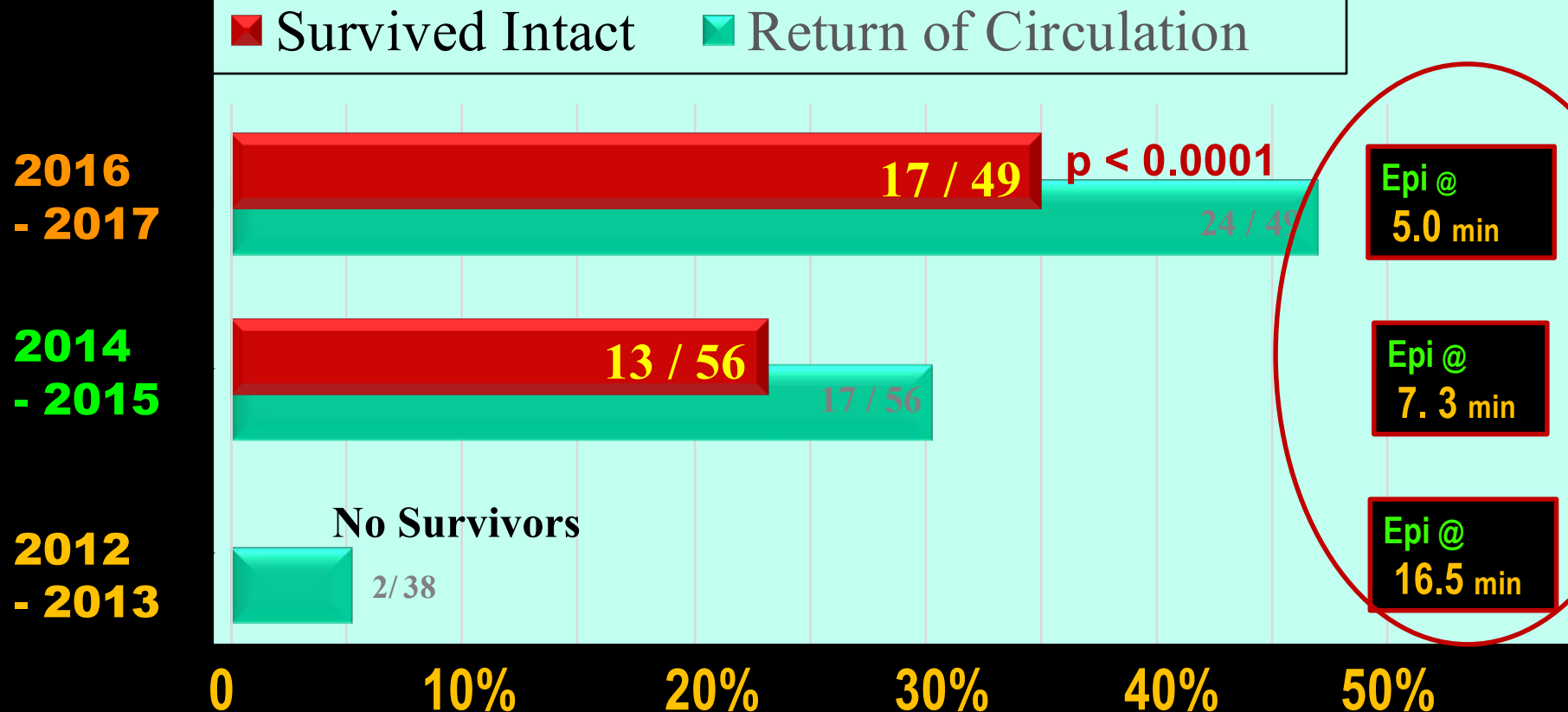
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ABSTRACT

Aim: To evaluate the frequency of neurologically-intact survival (SURV) following pediatric out-of-hospital cardiac arrest (POHCA) when comparing traditional early evacuation strategies to those emphasizing resuscitation being performed on-scene.

Pediatric Cardiac Arrest Survivors

Pre-Intervention (2012-13) vs. Phase I (2014-15) & Phase II (2016-17)



Conclusions

Although a historically-controlled study...

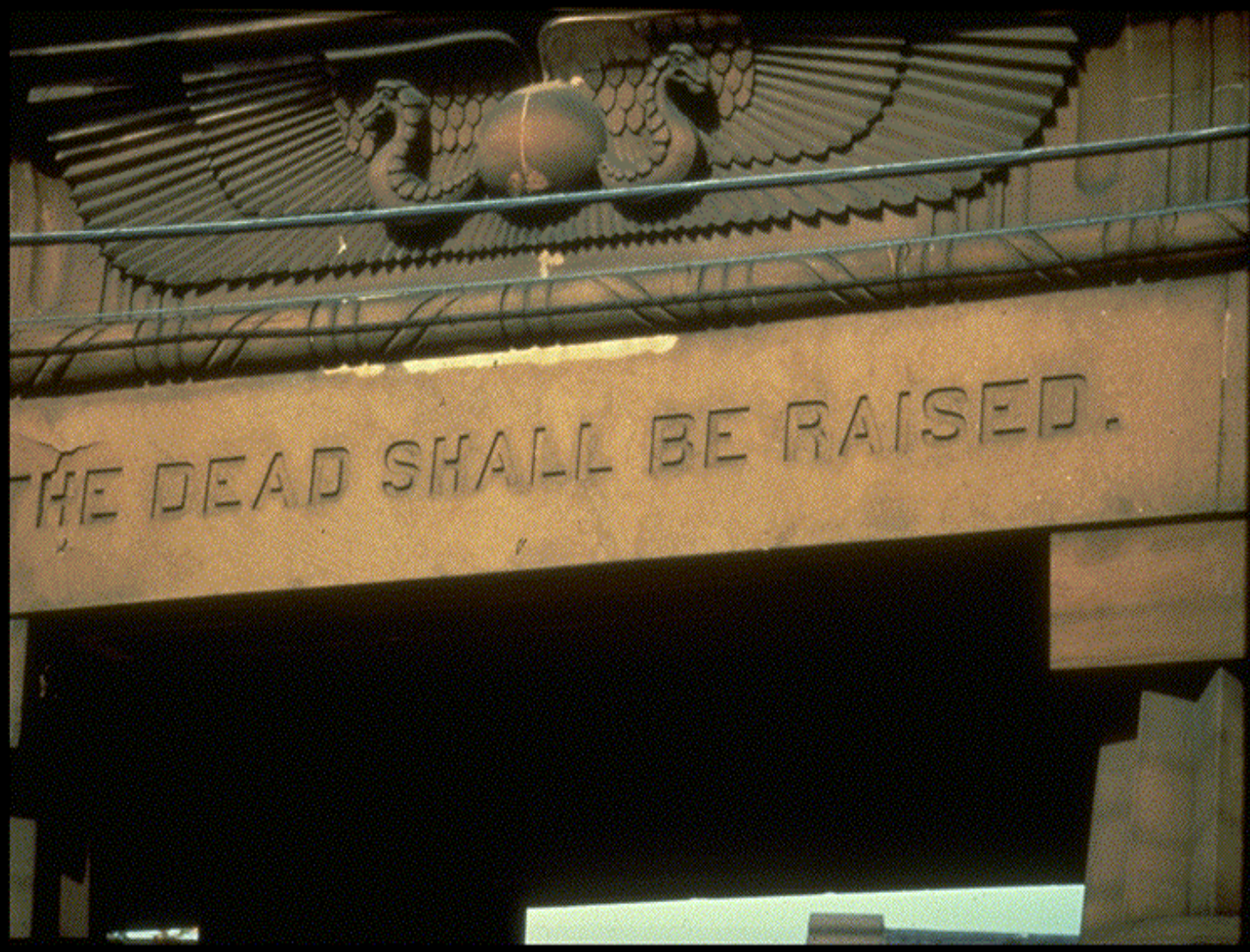
**The Sudden and Sustained Appearance of
Neuro-Intact Pedi Cardiac Arrest Survivors ...
...Was Profound, Immediate & Rewarding**

Much of this Appeared to be Attributable to:

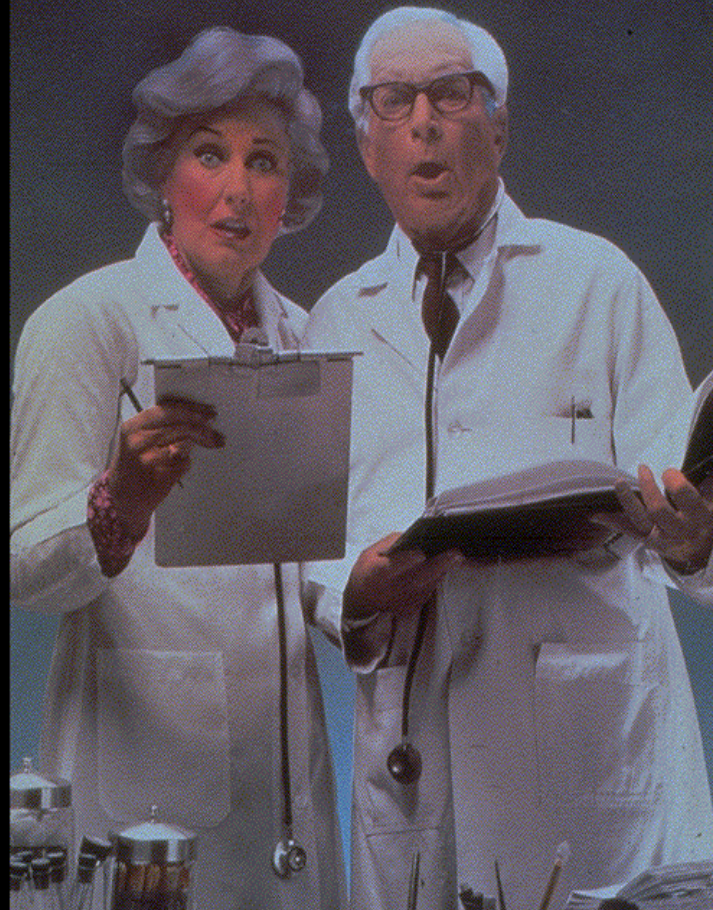
***Techniques That Expedited Care and a Disciplined Focus
on Physiologically-Sound Respiratory Management
and System-1 Thinking for Rapid Medication Dosing***



*On the Road to
the 2020's ...*



You mean you're still
ALIVE!?



We'll Make Life Better for Future Generations...



Thank You !!





People who find you on Facebook



■ High School people you hated

■ College people you hated

■ Work colleagues you hate

■ Actual friends