

# The “Cobb Line”

## The History vs. The Mystery



Michael K. Copass, MD



The Seattle Times  
Sunday *Pictorial*

MOBILE INTEN.

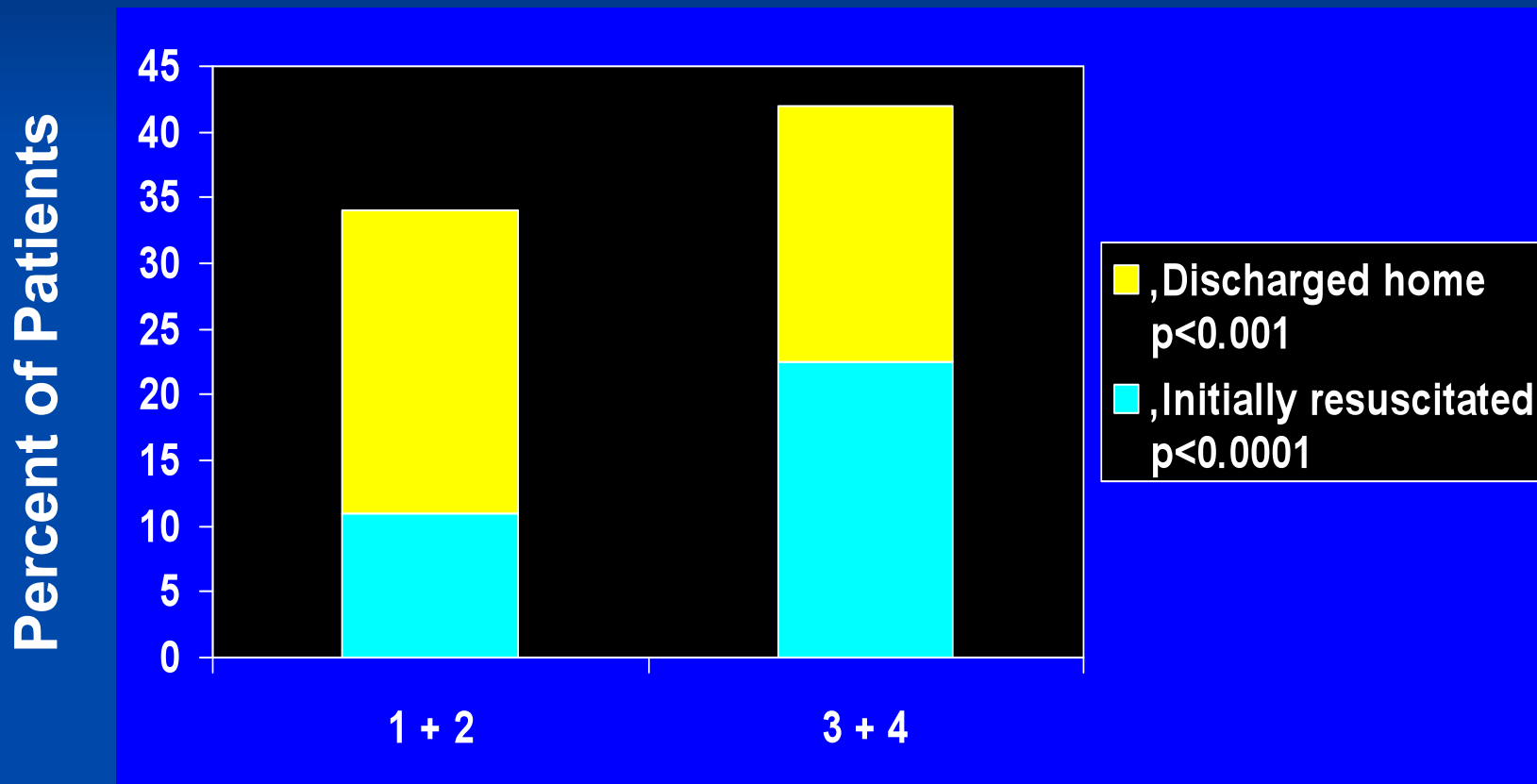
AUGUST 9, 1970

Seattle's 'Medic One' in Action

Photo by Bruce McKinnon

# MEDIC I: VF on Arrival

## 4 Years' Experience- 1,106 patients



# TREATING OOH CARDIAC ARREST

## Perspectives from the past 30 years

- Reducing Delays
- Drugs
- Changing Incidence, particularly VF
- Post-Resuscitation Care



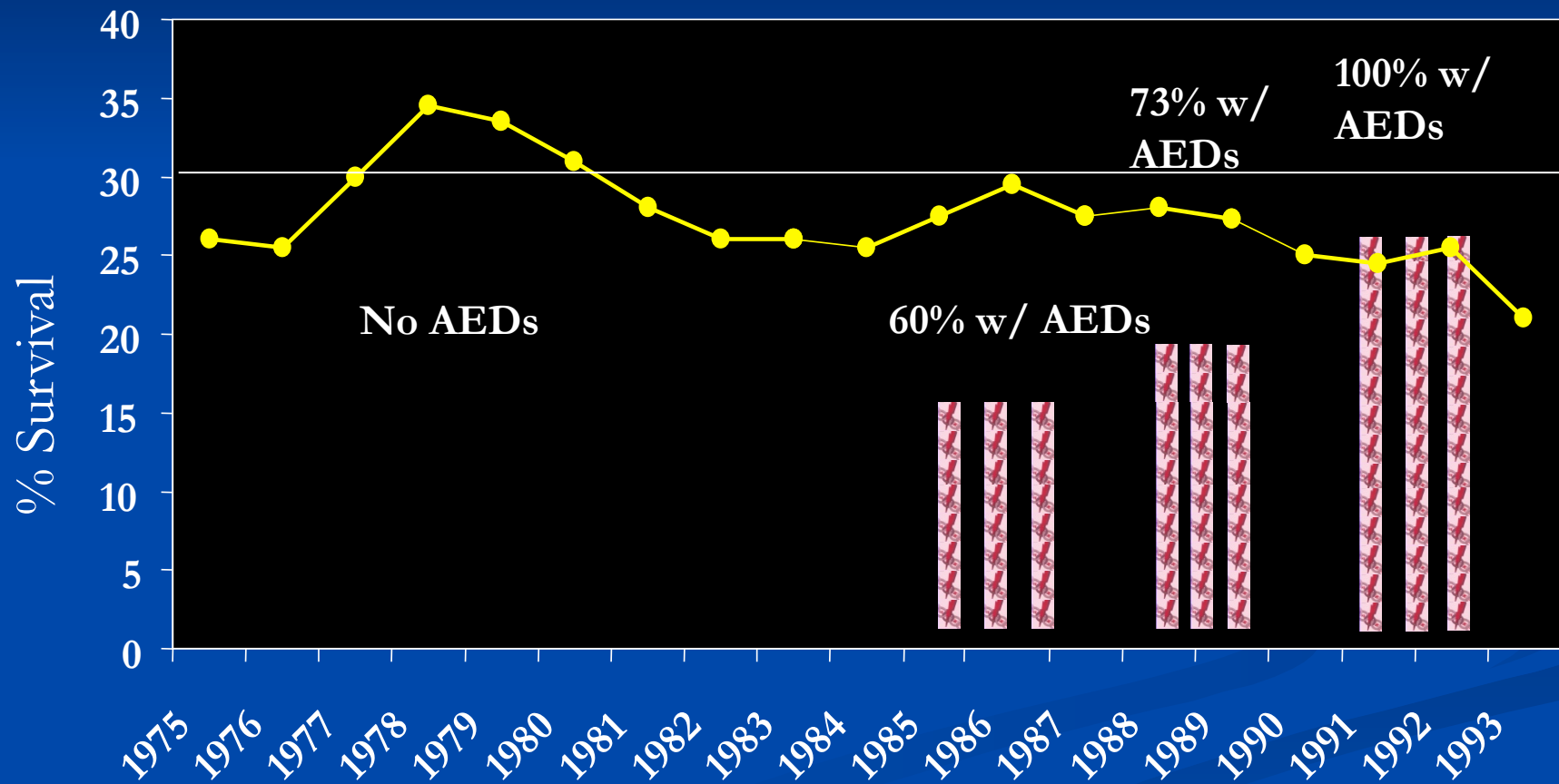
# Instructions for Using AEDs 1984

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- “Application of the automatic external defibrillator is to have the highest priority in treating ....”

# VF on Arrival

## 5,103 ACLS Treated Cases





**Should CPR Precede Shock  
in Patients with VF?**



# Rationale for 90 Seconds of CPR by EMTs Prior to AED Analysis and Shock

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- Experimental evidence (Niemann)
- Lack of benefit with EMT defib in Seattle
- Majority of patients in arrest do not have VF
- Typical patient 8-10 min without circulation

# Treatment of Prolonged Ventricular Fibrillation

## Immediate Countershock Versus High-Dose Epinephrine and CPR Preceding Countershock

James T. Niemann, MD; Charles B. Cairns, MD;  
Jay Sharma, BS; and Roger J. Lewis, MD, PhD

*Background.* Early countershock of ventricular fibrillation has been shown to improve immediate and long-term outcome of cardiac arrest. However, a number of investigations in the laboratory and in the clinical population indicate that immediate countershock of prolonged ventricular fibrillation most commonly is followed by asystole or a nonperfusing spontaneous cardiac rhythm, neither of which rarely respond to current therapy. The use of epinephrine in doses greater than those currently recommended has recently been shown to improve both cerebral and myocardial perfusion during cardiopulmonary resuscitation (CPR). The purpose of this study was to compare cardiac resuscitation outcome between immediate countershock of prolonged ventricular fibrillation with high-dose epinephrine therapy and conventional CPR before countershock of prolonged ventricular fibrillation in a canine model.

# 3 MINS CPR BEFORE SHOCK

## Wik et al\*, Oslo Norway

- 200 Randomized cases w/ OOH-VF
- In 119 pts. With response 5 mins or more:

Admit to Hosp 58% vs 38%

**Discharged Alive 22% vs 4%\***

\*  $P < .003$

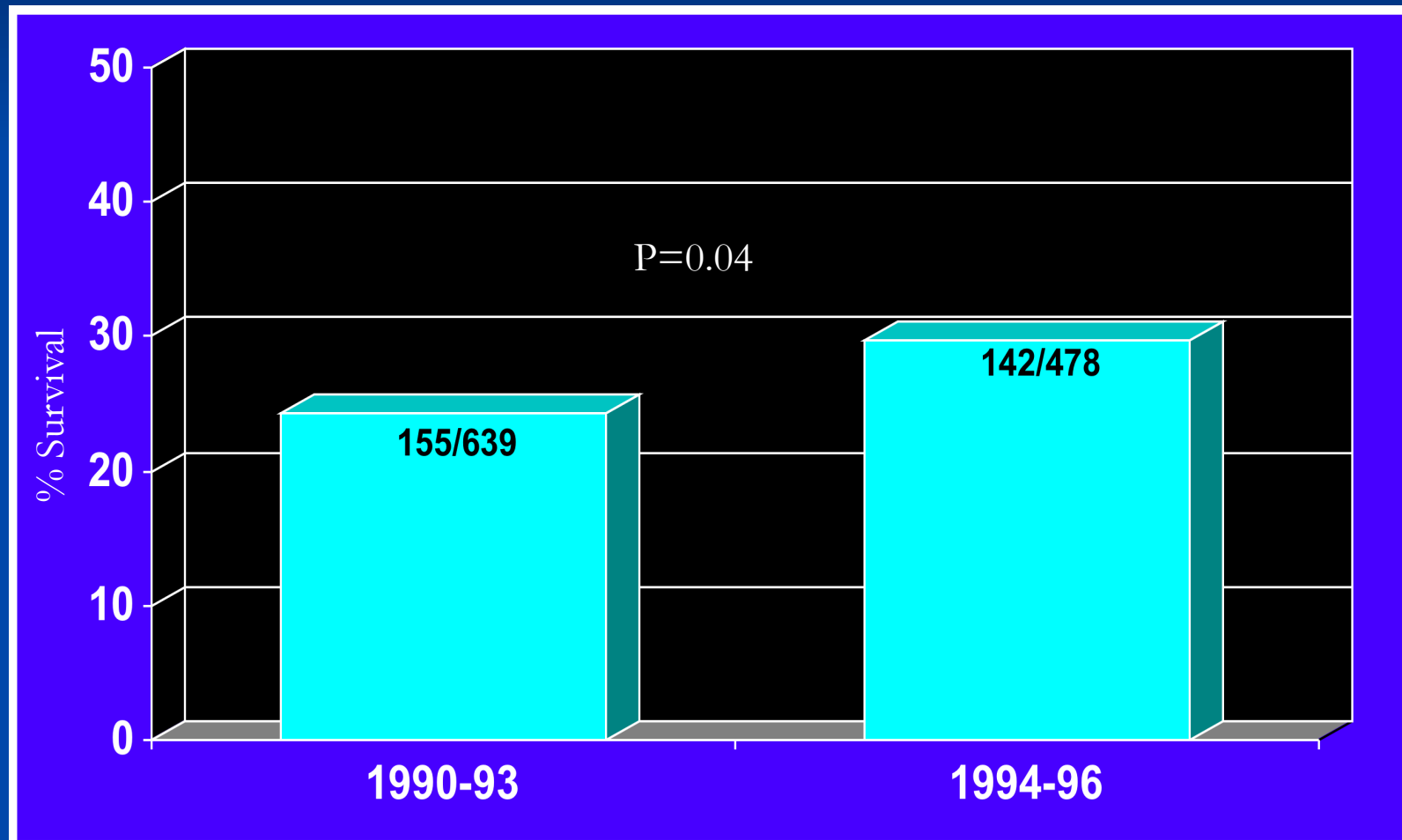
# Instructions for Using AEDs 1994

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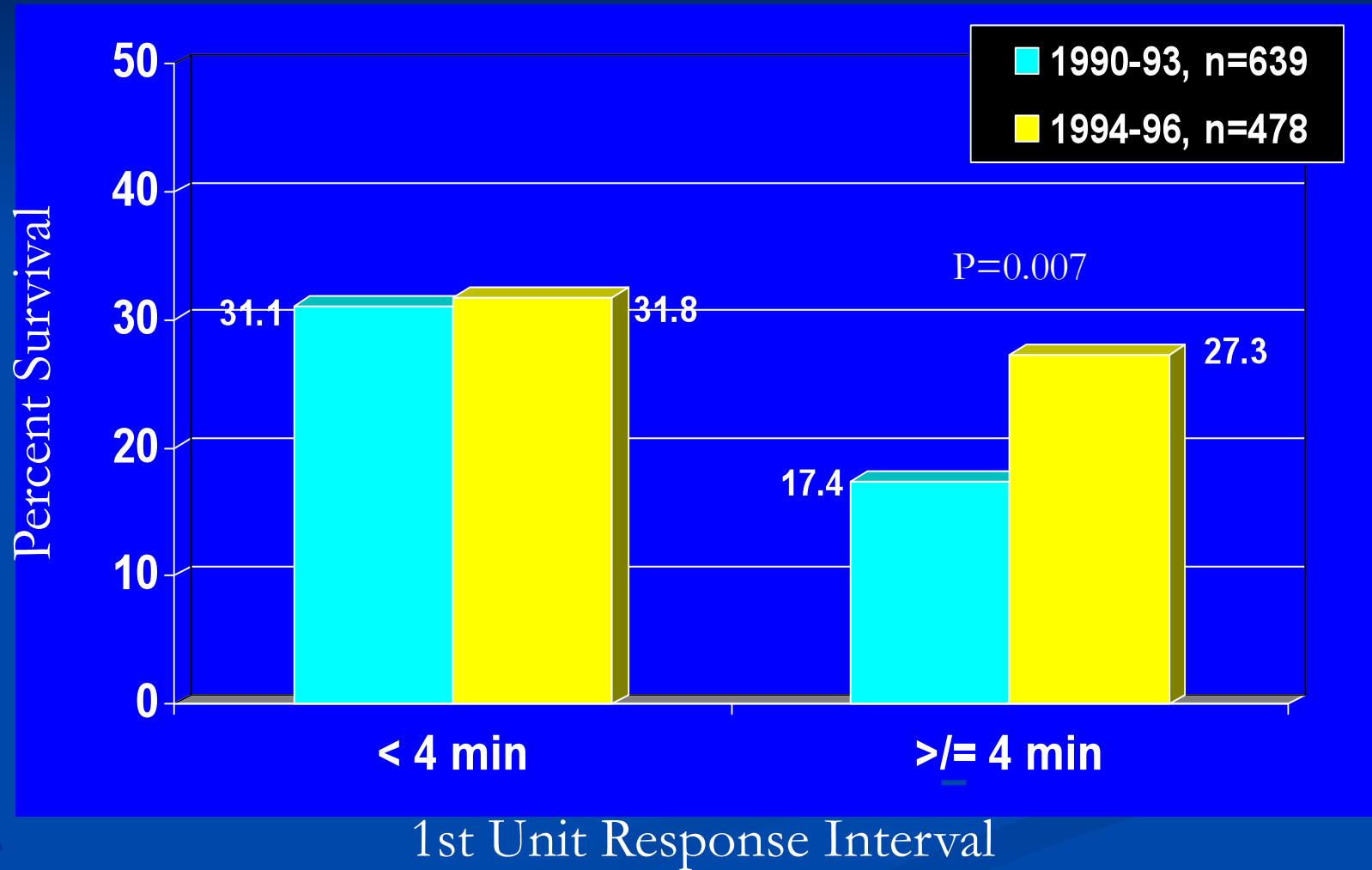
- “... the designated CPR person will begin chest compressions immediately at a rate of 80 to 100 compressions per minute ... to accomplish 150 compressions in 90 seconds ....”

# CPR Prior to Shock

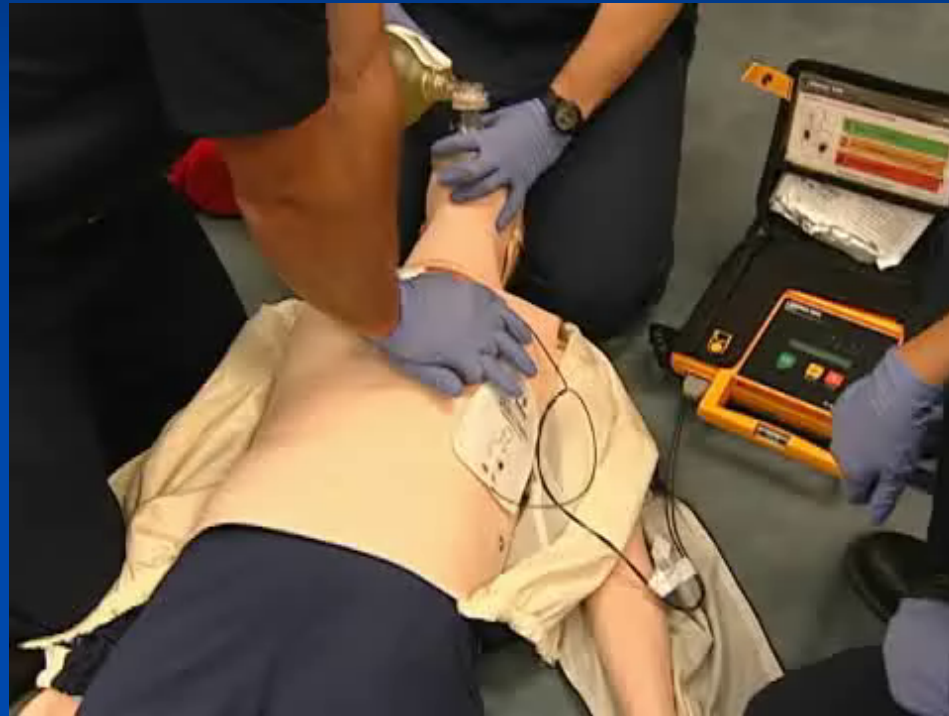
Out-of-Hospital VF - Analysis of Survival  
All Cases, n=1,117



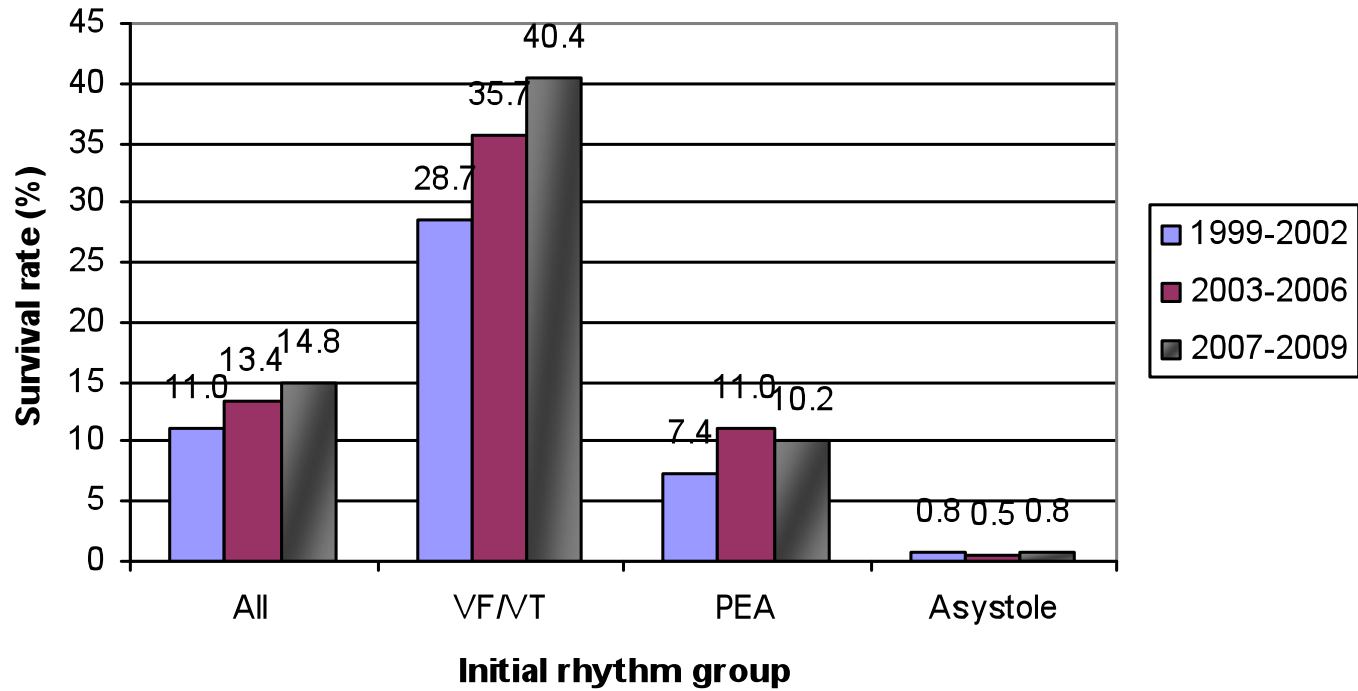
# 1,117 VF Cases



# Continuous CPR



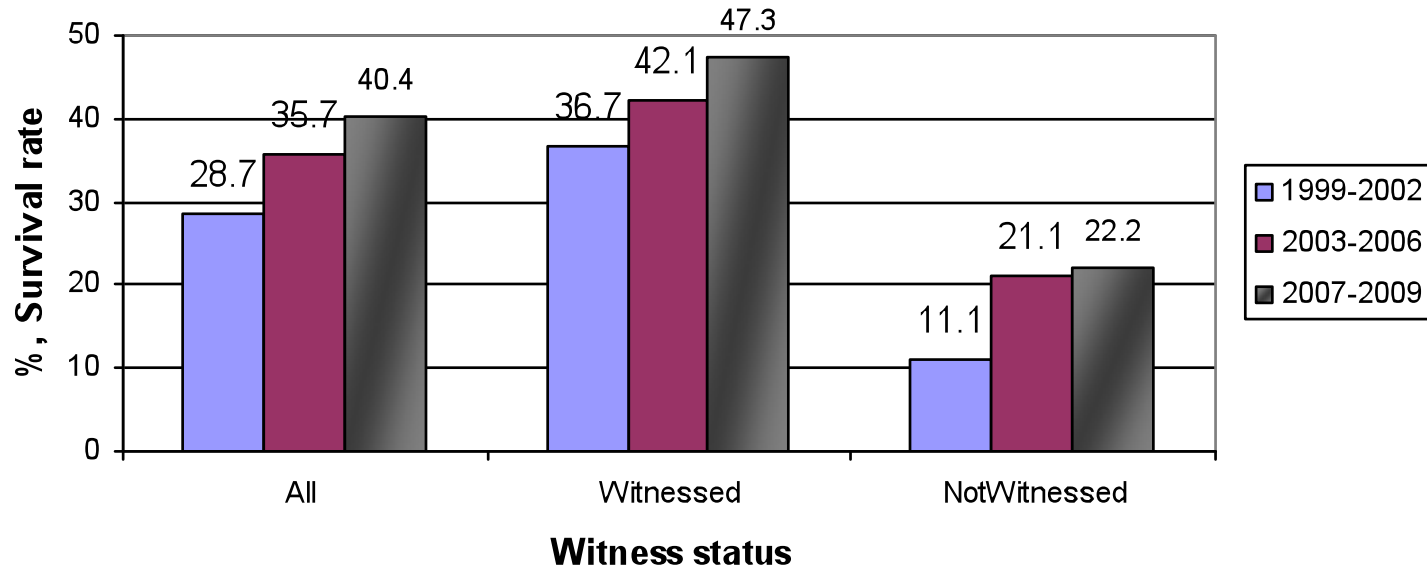
### CA on Arrival Cardiac Etiology (1999-2009)



Period	All			VF/VT			PEA			Asystole		
	Survival	Total	Survival Rate	Survival	Total	Survival Rate	Survival	Total	Survival Rate	Survival	Total	Survival Rate
1999-2002												
2003-2006												
2007-2009	133	899	14.8	105	260		23	225		3	398	

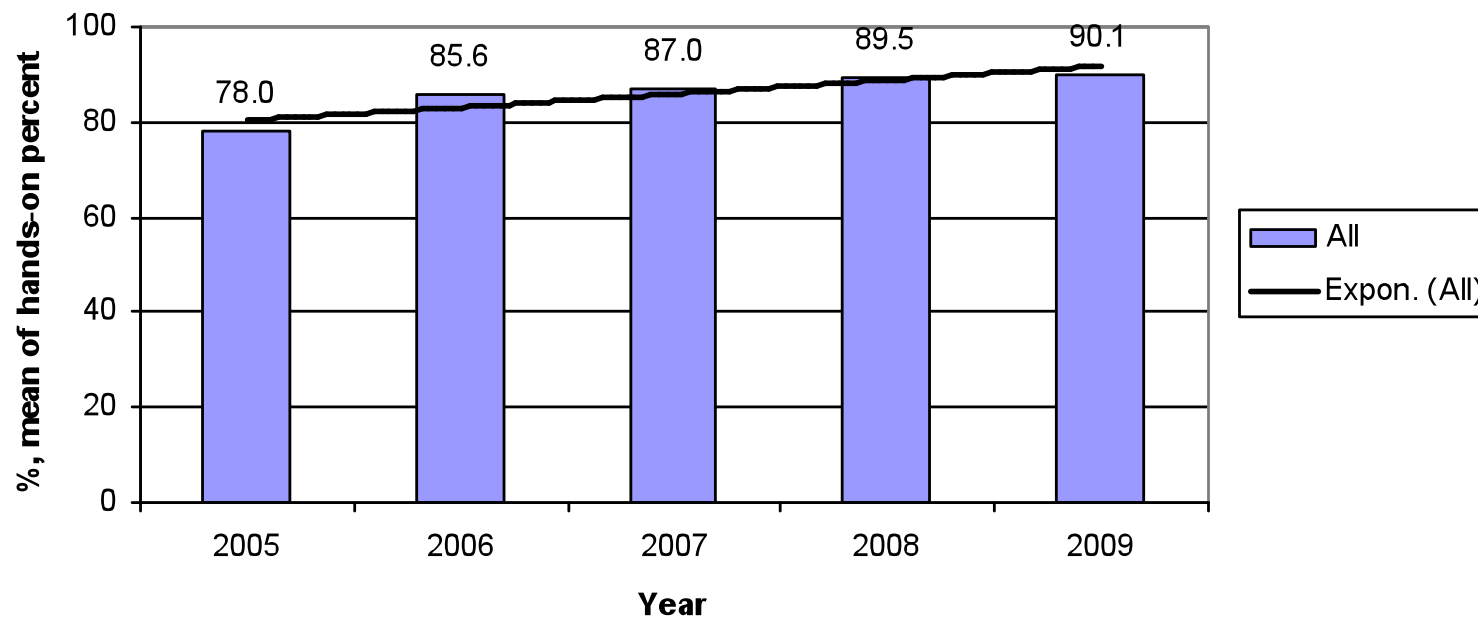


### VF/VT: CA on Arrival Cardiac Etiology (1999-2009)



Period	All			Witnessed			Not Witnessed		
	Surviva l	Total	Surviva l Rate	Surviva l	Total	Surviva l Rate	Surviva l	Total	Surviva l Rate
1999-2002									
2003-2006									
2007-2009	105	260	40.4	89	188		16	72	

### Mean of Hands-On Percent: Treated CA, CA on Arrival, No DNR (2005-2009)



### Mean of Hands-On Percent: Treated CA, CA on Arrival, No DNR (2005-2009)

	2005	2006	2007	2008	2009
All					

Thank You



Photo by Steve Crothers