The “Cobb Line”
The History vs. The Mystery

Michael K. Copass, MD
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

“Application of the automatic external defibrillator is to have the highest priority in treating ....”
VF on Arrival
5,103 ACLS Treated Cases

% Survival

- No AEDs
- 60% w/ AEDs
- 73% w/ AEDs
- 100% w/ AEDs

Year: 1975 - 1993
Should CPR Precede Shock in Patients with VF?
Rationale for 90 Seconds of CPR by EMTs Prior to AED Analysis and Shock

- 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

• “... 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

P=0.04
1,117 VF Cases

P = 0.007

1st Unit Response Interval

Percent Survival

1990-93, n=639
1994-96, n=478

< 4 min
31.1
31.8

P = 0.007

>= 4 min
17.4
27.3
Continuous CPR
## CA on Arrival Cardiac Etiology (1999-2009)

<table>
<thead>
<tr>
<th>Period</th>
<th>All Survival</th>
<th>Total</th>
<th>Survival Rate</th>
<th>VF/VT Survival</th>
<th>Total</th>
<th>Survival Rate</th>
<th>PEA Survival</th>
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<th>Survival Rate</th>
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**VF/VT: CA on Arrival Cardiac Etiology (1999-2009)**

The table above shows the survival rates for different periods and witnessed statuses. The graph illustrates the survival rates for each period and status, with bars representing the survival rates for all, witnessed, and not witnessed cases.
Mean of Hands-On Percent: Treated CA, CA on Arrival, No DNR (2005-2009)

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Thank You