Improving Survival From Out of Hospital Cardiac Arrest In Phoenix

John Gallagher MD, FACEP, FAAEM
EMS Medical Director
Phoenix Fire Dept.
Arizona Experience

Between Jan. 1, 2005 and April 1, 2006 only 37 (3.4%) of 1,076 OHCA patients survived to hospital discharge using standard AHA CPR.

PEC 2008 Ewy, Bobrow et al.
In Phoenix - 2005

Overall survival from OHCA was 3.6%.
Using standard AHA CPR

Survival from witnessed V. Fib was 7%.
Where to start?
Bystander CPR (Seattle)

Bystander CPR has increased from 28% to 40% in our system over 5 years.
Promote Compression Only CPR

- Lay persons say it is easier to do.
- More people are willing to do it.
- COCPR overall incidence—19% to 76%.
Standard CPR v. COCPR?

Two recent randomized controlled trials using dispatchers to give CPR instructions reported in the NEJM. They found no significant differences in survival between the two methods.
Survival (n = 1,941)

COCPR = 12.5% v. 11.0% AHA CPR

Patients with a cardiac cause of arrest were somewhat more likely to survive with compressions alone - 15.5% v. 12.3% p = .09

NEJM 2010;363:423-433 T. Rea et al. (Seattle/London)
In Sweden (n = 1,276)
30 day survival from OHCA
COCPR 8.7% v. AHA 7.0%
(no significant difference)

COCPR, which is easier to learn and perform, should be the preferred method for CPR performed by bystanders in patients in OHCA.

NEJM 2010;363:434-442 Svensson et al.
No benefit from ventilation.

In the first few (?) minutes of resuscitation.
Chest Compression-Only CPR by Lay Rescuers and Survival from Out-of-Hospital Cardiac Arrest*

* 5 year observational cohort study
(n = 5,272)

Ewy, Spaite, Gallagher, Bobrow and others.
JAMA 2010;304:1447-1454
Survival to hospital discharge

No CPR  AHA CPR  COCPR

5.2%  7.8%  13.3%

95% confidence intervals
5 Points
(to improve survival)
1. System wide media campaign to endorse compression only CPR by bystanders/with free training.
2. Dispatchers give COCPR instructions to bystanders if they do not know AHA CPR.
3. Phoenix Fire Dept. EMTs and Paramedics were trained to do 4 sets of COCPR for 2 min. each with oxygen mask on. Intubation was done late if needed. (passive oxygen insufflation*)
4. Cardiac Receiving Centers with specific criteria were identified (in 2008). Survival outcome has doubled.
5. Therapeutic Hypothermia was driven by Fire/EMS.

In Phoenix 2009

- Overall survival increased to 10%.
- Survival for witnessed V. Fib. = 34%.

(Survival increased each year since 2005)
Thanks

To the professional firefighter men and women of the Phoenix Fire Dept. whose hard work made this possible.

- 643 FF/Paramedics
- 1005 FF/EMTs
- Terry Valenzuela/Tucson Fire Dept. 2003

(never be afraid to use your phone!)
Questions?