Patient Has a Fractured Fibula…

....Given a Mild Sedative
It’s Basically the Basics!
The Fundamental Benefits of Doing Resuscitation

Presented by Paul E. Pepe, MD, MPH
Sudden Death Syndrome

...Overall Greatest Cause of Premature Death
Trauma (i.e., Severe Injury) ....

#1 Killer of Adults < 45 years old
...and, More Importantly ---

--- the #1 Killer of Children!
That Makes These Two Threats to Our Community
Our Challenge ... and Our Duty ... To Improve Upon
We Are Already Taking Local Action ...

With City-Wide CPR Training ...

... And Enhancing DFR Training & Response
and Dallas City Council Members …

... Have Even Provided a Leading …

... And Life-Saving Role!
But Is Our Federal Government Also Addressing These Issues? (That Affect ALL Americans)
The Answer is Yes!
In 2004 ...

The U.S. NIH Sent Out an RFA to Establish a Network of 10 Cities in North America That Would Drive National Priorities in Terms of Uncovering New Ways to Save More Lives following Sudden Cardiac Arrest and Trauma
Among > 100 Highly Competitive City-University Partnerships that Applied...

- The Dallas Area BioTel System (incl. Dallas & other member Cities) was 1 of only 7 Major U.S. Municipal Sites Chosen
- Dallas Was Designated a Center of Excellence for Resuscitation Medicine and Related Research
- This Meant Unique Federal Funding for Training, New Life-Saving Equipment, Data Collection and Additional Medical Oversight
- And the Hope for --- *A Life-Saving Effect!*
Besides Salaries for Expert Personnel to Capture the Data and Outcomes ...

Acquired Monitoring Equipment:
for example, the ability to Capture Sec. to Sec. Performance of CPR
… Recorded and Measured on Computers!
First 3 Multi-Year Projects:

- **EPISTRY**: A Population-Based Registry of All Incidents Related to these 2 Epidemics to Establish Baseline #’s & Survival (for Both Cardiac Arrest and Trauma)

- **IMPEDANCE THRESHOLD DEVICE**: “ITD” -- Special Valve that ↑↑ Blood Flow Back into the Heart (in Cardiac Arrest)

- **HYPERTONIC SALINE (HSD)**: Infusion of a Highly Concentrating Fluid in Trauma Resuscitation (widely used in Europe)
How Did the First Trial of a Device Go?
ITD Study

Very Interesting Results …
No Advantage
In Survival Chances
from the ITD Itself ….

…But Survival Rates ↑↑↑↑
A 55% Improvement
in Dallas Alone!
So Why?
Key Finding of Early Studies

Chest Compression Fraction Determines Survival in Patients With Out-of-Hospital Ventricular Fibrillation

i.e., The More Time Medics Spend Doing Chest Compressions, Then the Better the SURVIVAL RATE !!
Minimally Interrupted Cardiac Resuscitation by Emergency Medical Services for Out-of-Hospital Cardiac Arrest

Bentley J. Bobrow, MD
Lani L. Clark, BS
Gordon A. Ewy, MD
Vatsal Chikani, MPH
Arthur B. Sanders, MD

**Context**  Out-of-hospital cardiac arrest is a major public health problem.

**Objective**  To investigate whether the survival of patients with out-of-hospital cardiac arrest would improve with minimally interrupted cardiac resuscitation (MICR), an alternate emergency medical services (EMS) protocol.

**Design, Setting, and Patients**  A prospective study of survival-to-hospital discharge between January 1, 2005, and November 22, 2007. Patients with out-of-
## CPR 2006

### CPR QUICK-VIEW

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<th>Compr. Ratio, %</th>
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### Interval Statistics
CPR 2009

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Following Feedback, Re-Training and... More Re-Training:

2006

2009
## Impact on Dallas Area Outcomes

<table>
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<tr>
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<th>Survival to Hospital Discharge</th>
<th>2006</th>
<th>2009</th>
<th>Relative Percent Increase</th>
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<td>6.0%</td>
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<td>Irving</td>
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<td>Carrollton</td>
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<td>4.2%</td>
<td>15.8%</td>
<td>376%</td>
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While the Percentages Seem Small...

Because of the Large #'s Treated...

...This Translates into Dozens of More Lives Saved in Dallas Area

...And Hundreds Across the Numerous ROC Jurisdictions
Similarly, in the Trauma Study ...

- Although No Dramatic Differences Were Found at the End of Study ...
- Overall Survival Rates Reportedly Increased from Baseline Rates

(Final data and Statistical Analysis still being reviewed)
Grants help make Dallas County one of best places to suffer cardiac arrest
10:24 PM CST on Friday, February 26, 2010
By JASON ROBERSON / The Dallas Morning News

Public Health
Cardiac care gets a jolt

County goes from one of the worst to one of the best places for a heart to stop

Steven Shelley is grateful for a federal grant that helped Dallas County medics and firefighters save more cardiac arrest patients last year and send them back to work. After finishing a four-hour shift of moving boxes up and down ladders, the 46-year-old warehouse manager in Carrollton told co-workers he was grabbing a bite to eat.
On the Horizon...
Chest Compressions ONLY CPR vs. the Traditional Approach with Rescue Breathing Included
In Stroke, Brain/Spinal Cord Trauma, Sepsis and Cardiac Arrest Models. . .

Acute Administration of I.V. Estrogen

Shown to Provide Significant Protection (up to 60%)
LATE CHECK-IN

CONTINENTAL BAGGAGE CLAIM CHECK

Baggage is checked subject to tariffs, including limitations of liability therein contained. This is not the luggage ticket (Baggage Check) described by Article 4 of the Warsaw Convention as amended by the Hague Protocol 1965.
EMS State of the Science Conference in Dallas Provides Guidance on Prehospital Care

More Lives Saved Because of the Research!
On the Road to the 22nd Century...
Not Only Make Life Better....

...for Future Generations !!!
But Also Remember...

It’s Good Business Too...
To Make Your City the Safest City in Which to Be Resuscitated...
“City of Dallas ...”

We’re No Dummies!!”
Thank You !!
First Day on the Job

...at the German Coast Guard
Dallas Area BioTel System
(Metropolitan EMS System)

Was the Key to Being Awarded the Grant
.... and Our Subsequent Successes
Why Was BioTel the Key?

Numbers, Numbers, Numbers!

Across the County....

• > 2,000 Annual Cardiac Arrests
• > 15,000 Annual Level I Traumas
A Brief History and Latest Progress of the

U.S. National Institutes of Health Resuscitation Outcomes Consortium

Presented by Paul E. Pepe, MD, MPH
The U.S. National Institutes of Health
Resuscitation Outcomes Consortium

National Heart, Lung, and Blood Institute

National Institute for Neurological Disorders and Stroke

Canadian Institutes of Health Research

U.S. Department of Defense

Defence Research and Development Canada

American Heart Association

Heart and Stroke Foundation of Canada
What is the #1 Cause of Preventable Premature Death in our Community?
And in Dallas County Alone....

...That’s 6 to 7 Lives Lost Each Day

Some are Children....

...Including Young Athletes

...and 40% are Women
What is the #1 Cause of Premature Death in our Children and Young Adults?
In January 2010, at City Hall, the NIH Held a News Conference

• Announced NIH Renewal of ROC for Six More Years
• And Dallas Was Renewed as One of the ROC Sites
• Cited Dallas as a Model Site!
Dr. George Sopko from the NIH

Congratulating Dallas Area Firefighters/EMS Personnel at the Dallas City Hall L1 Conference Room
The NIH ROC Has studied:

Cardiac Arrests: 13,000 / year

Severe Traumatic Injuries: 26,000 / year
Current ROC Funding Partners:

- National Heart, Lung and Blood Institute
- Institute of Circulatory and Respiratory Health of the Canadian Institutes of Health Research
- National Institute of Neurological Disorders and Stroke
- Defence Research and Development Canada
- United States Army
- Heart and Stroke Foundation of Canada
- American Heart Association