Memorandum

Date:       June 17, 2011
To:         Members of the Public Safety Committee
Subject:    Dallas' Leadership Role & Successes with the U.S. National Institutes of Health (NIH) Resuscitation Outcomes Consortium (ROC)

The Public Safety Committee will be briefed on the Dallas Leadership Role in the National Institute of Health (NIH) Resuscitation Outcome Consortium (ROC), by Dr. Paul Pepe, Medical Director, Emergency Medical Services on Monday, June 20, 2011.

Ryan S. Evans
First Assistant City Manager

Attachment

c: Honorable Mayor and Members of the Dallas City Council
   Mary K. Suhy, City Manager
   Deborah Watkins, City Secretary
   Tom Perkins, City Attorney
   Craig Kinton, City Auditor
   Victor Lander, Administrative Municipal Judge
   Jill A. Jordan, P.E., Assistant City Manager
   A.C. Gonzalez, Assistant City Manager
   Forest E. Turner, Assistant City Manager
   Jeanne Chipperfield, Chief Financial Officer
   Helena Stevens-Thompson, Assistant to the City Manager Mayor/City Council Office

"Dallas, the City that works: Diverse, Vibrant and Progressive"
Dallas’ Leadership Role & Successes with the U.S. National Institutes of Health Resuscitation Outcomes Consortium

Presented by Paul E. Pepe, MD, MPH
Deja Vu
...all over again
But There’s Also Some “Breaking” Information!
So What is the #1 Cause of Preventable Premature Death in our Community?
Sudden Death Syndrome

...Overall Greatest Cause of Premature Death
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?
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 Survival
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!
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
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!
Dallas Area BioTel System
(Metropolitan EMS System)

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

Numbers, Numbers, Numbers!

Across the County....

• > 2,000 Annual Cardiac Arrests
• > 15,000 Annual Level I Traumas
Dr. Ahamed Idris

• 20 yrs at Univ of Florida
• Headed NASA Medical Rescue
• In NASA Hall of Fame (for Research)
• Chaired AHA CPR Committee

• Came to Dallas to Head Up the DFW Center for Resuscitation Research
First 2 Multi-Year Cardiac Arrest 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” -- Device that in Labs ↑↑ Blood Flow Back into the Heart (in Cardiac Arrest)
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!
How Did the First Trial of a Device Go?
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

i.e., The More Time Medics Spend Doing Chest Compressions, Then the Better the Survival Rate!!

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

Figure 3. Smoothing spline representing the incremental probability of survival corresponding to a linear increase in chest compression fraction.
With the NIH Funded Monitoring Systems…
We Gave On-Going Feedback & Training to DFR!

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), a alternate emergency medical services (EMS) protocol.

Following Feedback, Re-Training and... 

More Re-Training:

2006

2009
### Impact on Dallas Area Outcomes

#### Survival to Hospital Discharge

<table>
<thead>
<tr>
<th>Location</th>
<th>Survival Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dallas</td>
<td>54%</td>
</tr>
<tr>
<td>Irving</td>
<td>57%</td>
</tr>
<tr>
<td>Mesquite</td>
<td>100%</td>
</tr>
<tr>
<td>Carrollton</td>
<td>376%</td>
</tr>
</tbody>
</table>
Because of the Large #’s Treated…

…This Translates into Dozens of More Lives Saved Annually in the Dallas Area

...And Hundreds Across the Numerous ROC Jurisdictions
• Also Spared Health Care Costs
• Device Budget Would Have Been Close to $100,000 a year Just in Dallas Alone!
• And We Got Devices For Free During the Study Period
Similarly, in the Trauma Studies ...

Although No Dramatic Differences Between the Studied Interventions ...

Preliminary Information Shows That Overall Survival Rates ↑↑ from Baseline Rates !!
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
So What’s the “Take-Home”? 
Grants help make Dallas County one of the best places to suffer cardiac arrest

10:24 PM CST on Friday, February 26, 2010
By JASON ROBERSON / The Dallas Morning News

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.

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
Latest Findings:

- Not *Too* Fast!!
- Use a Metronome!
- These Will Be Provided to the City at No Cost!
EMS State of the Science Conference in Dallas Provides Guidance on Prehospital Care

State and National ... ... and International Notoriety

Leadership For Now We’re and Gaining Notoriety International
There is One Disadvantage to Quality CPR Performance ....
Sorry! They’re resuscitating you with quality CPR down there!"
On the Horizon...
"Uninterrupted Chest Compressions" CPR

vs. the Traditional Approach

with Rescue Breathing Pauses

Do You Get the Same Outcome?

or is One Actually Much Better?
Not Just About
Lifesaving Alone...
In Cases Where Shocks Are Needed

Traditionally, Doctors Have Thought that an “Anti-Arrhythmic” Drug Should Be Administered

But Never Really Proven in a Standard Scientific Study
So We’ll Do a Study Called “ALPS”

• Amiodarone vs Lidocaine vs Just Plain I.V. Fluids
• Does Either Drug Truly Add Anything to Really Good CPR?
• *i.e.*, Is the Cost Worth It??
• In Meantime, City Will Now Get the Drugs for Free *(and Training too!)*
In Stroke, Brain/Spinal Cord Trauma, Sepsis and Cardiac Arrest Models . . .

Acute Administration of I.V. Estrogen

Shown to Provide Significant Protection
On the Road to the 22nd Century...
We’ll 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!!