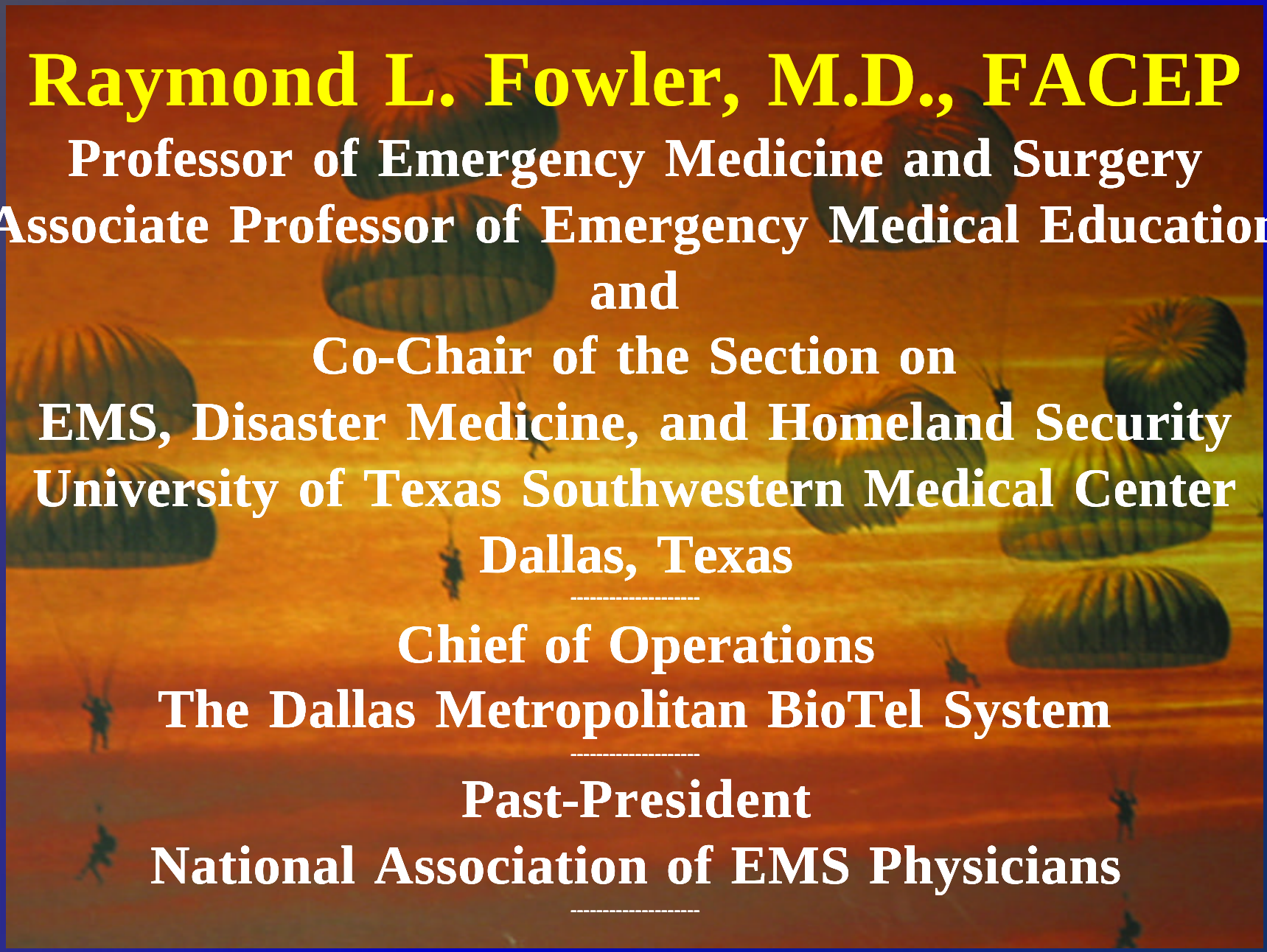
EMS as a Medical Subspecialty

A Window into the Future



Raymond L. Fowler, M.D., FACEP

Professor of Emergency Medicine and Surgery

Associate Professor of Emergency Medical Education

and

Co-Chair of the Section on

EMS, Disaster Medicine, and Homeland Security

University of Texas Southwestern Medical Center

Dallas, Texas

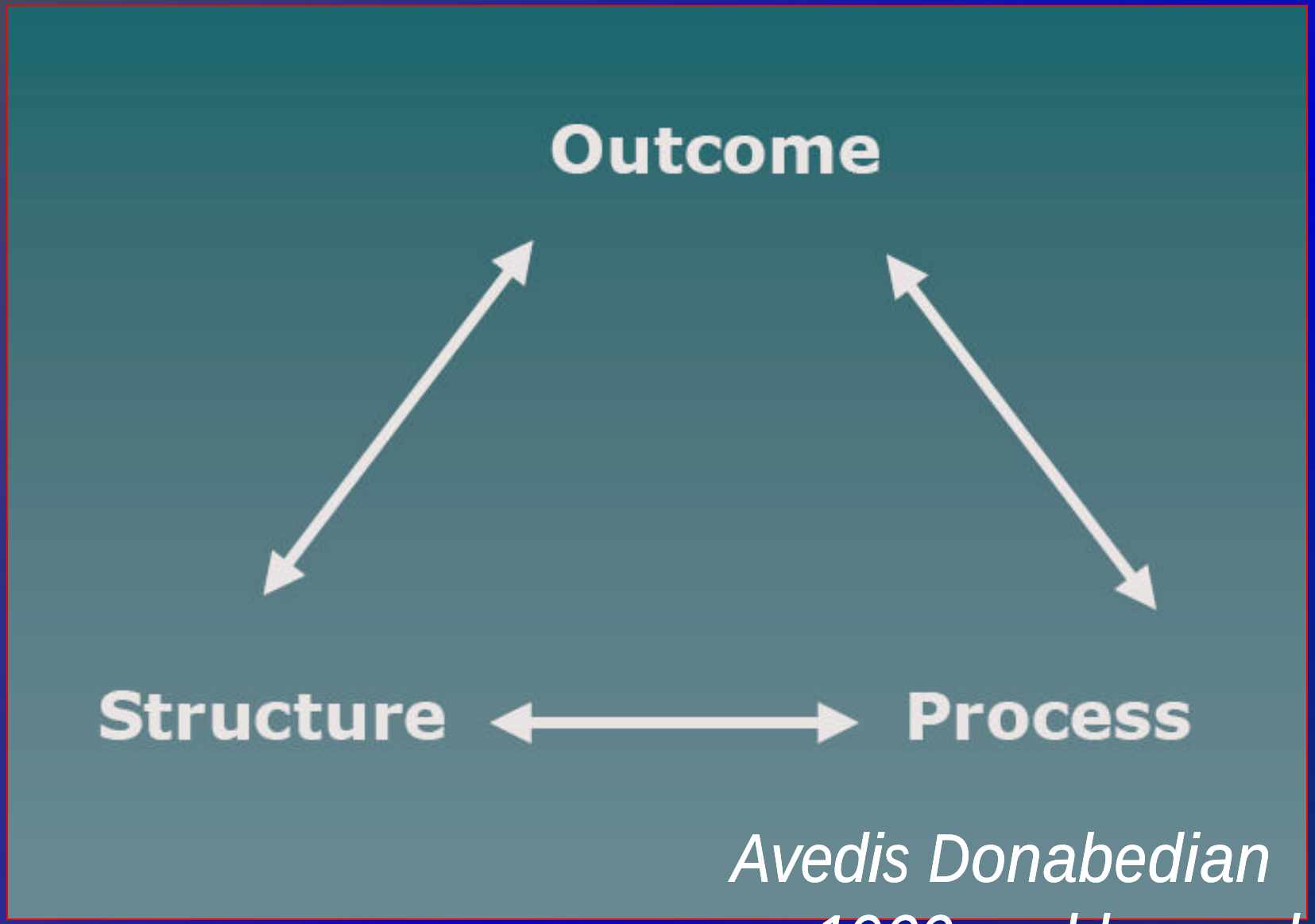
Chief of Operations

The Dallas Metropolitan BioTel System

Past-President

National Association of EMS Physicians


www.rayfowler.com



Avedis Donabedian
ca 1966 and beyond

The Path of this Talk:

1. History (Structure)
2. Current Efforts (Process)
3. The Future (Outcome)

History

- The Experience from war

SPECIAL CONTRIBUTIONS

HISTORICAL BACKGROUND TO *ACCIDENTAL DEATH AND DISABILITY: THE NEGLECTED DISEASE OF MODERN SOCIETY*

John M. Howard, MD

History

- Evolving strategies for severe trauma


A-1
AMBULANCE SERVICE

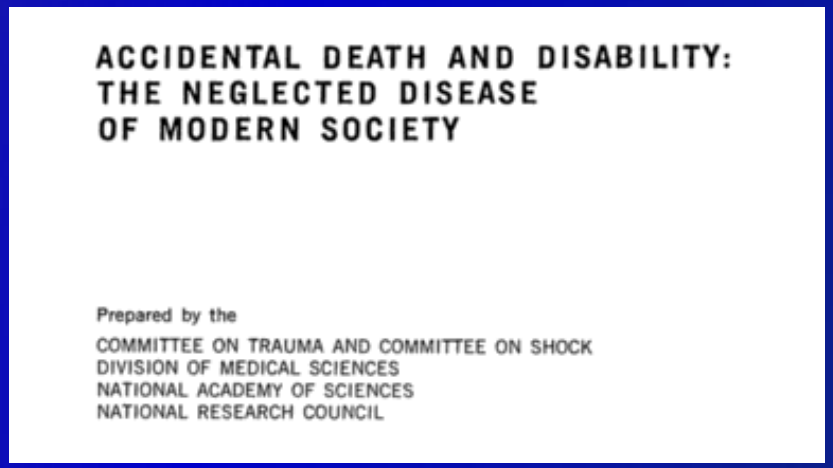
History

- National Academy of Sciences Study

- Publication in 1966 of

  "Accidental Death and Disability:

  The Neglected Disease of Modern Society"



ACCIDENTAL DEATH AND DISABILITY:
THE NEGLECTED DISEASE
OF MODERN SOCIETY

Prepared by the

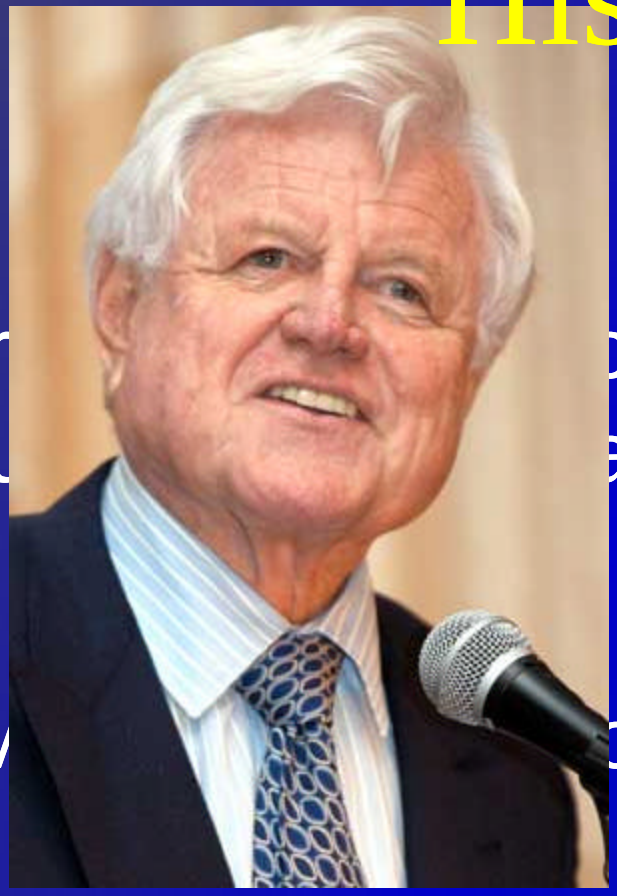
COMMITTEE ON TRAUMA AND COMMITTEE ON SHOCK
DIVISION OF MEDICAL SCIENCES
NATIONAL ACADEMY OF SCIENCES
NATIONAL RESEARCH COUNCIL

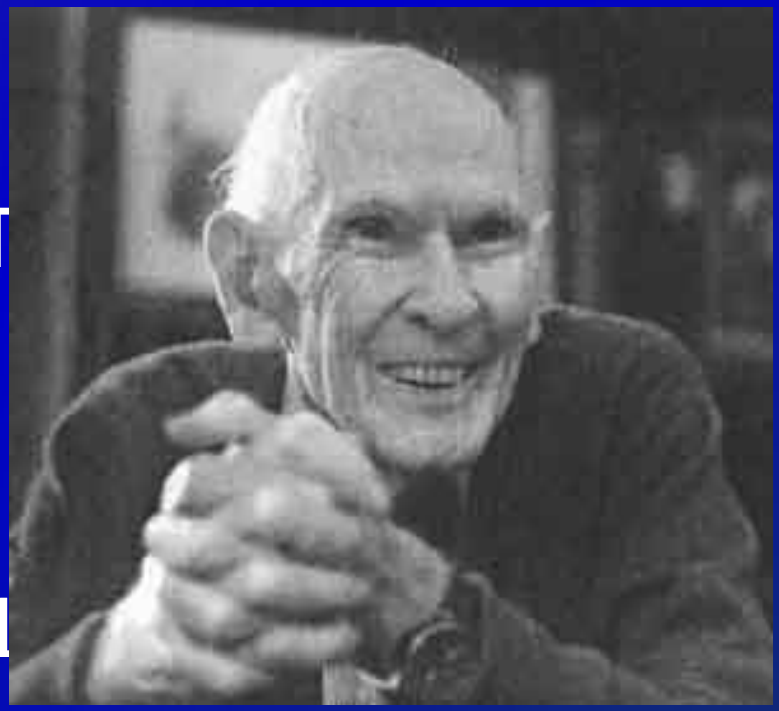

PARKLAND EMERGENCY & TRAUMA

The National Perspective
Our EMS History

- 1966 First DOT EMS Curricula
- 1973 EMS Systems Act
- 1990's Block Grant Funding
- 1996 EMS Agenda for the Future
- 2000's Scope of Practice Project
- 2007 – Ad infinitum –
- *Subspecialty Efforts*

History





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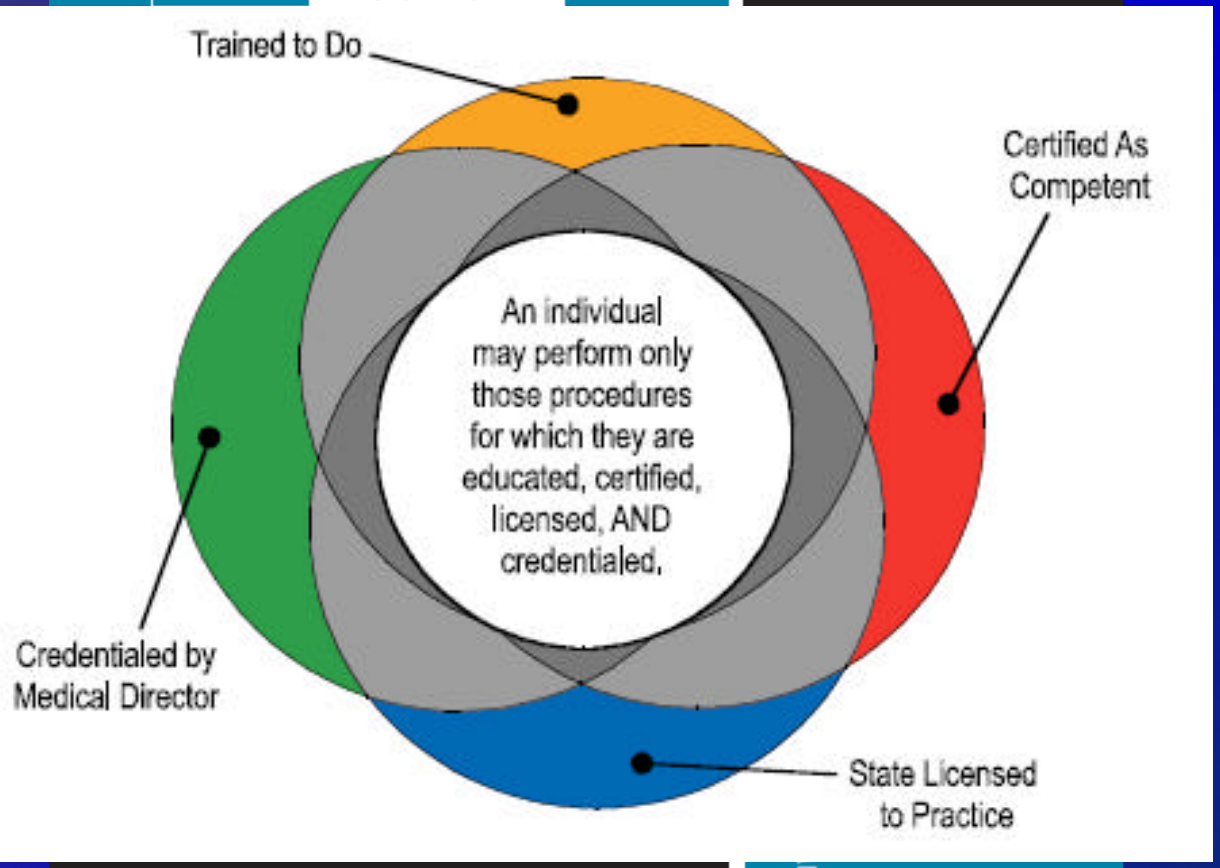
- EM of 1

“We must stop responding to calls that we can prevent”

-M. Zavadsky



INISTRATION


Bringing us to. . .

David C. Cone • Robert E. O'Connor • Raymond L. Fowler

EMERGENCY MEDICAL SERVICES

Clinical Practice and Systems Oversight

Jon Krohmer
Ritu Sahni
Brian Schwartz
Henry E. Wang

KENDALL HUNT PROFESSIONAL

ISBN 0-7575-1924-8

EMERGENCY MEDICAL SERVICES Clinical Practice and Systems Oversight Cone • O'Connor • Fowler

NAEMSP®

EMERGENCY MEDICAL SERVICES: CLINICAL PRACTICE AND SYSTEMS OVERSIGHT

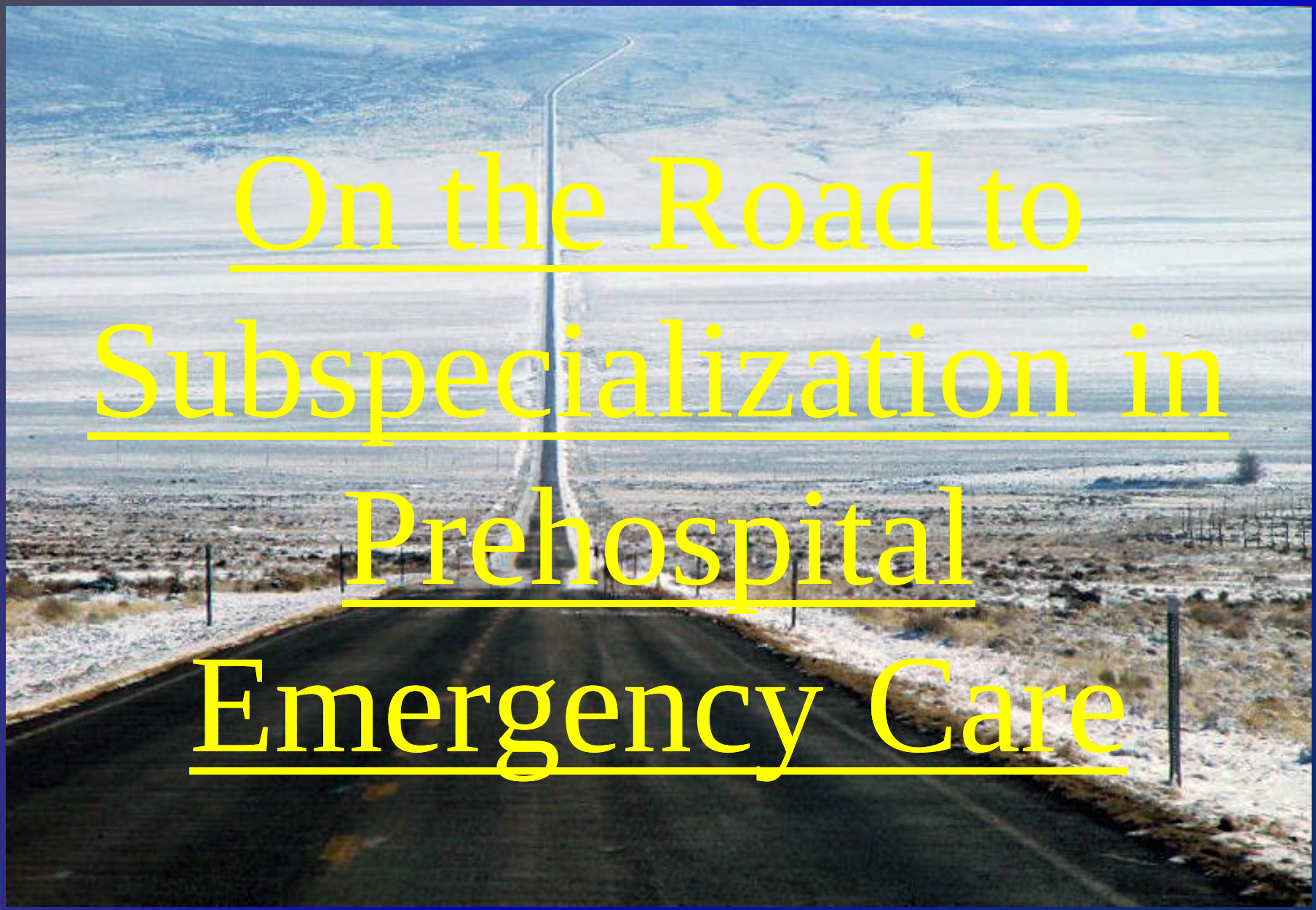
David C. Cone • Robert E. O'Connor • Raymond L. Fowler

EMERGENCY MEDICAL SERVICES

Clinical Practice and Systems Oversight

Jon Krohmer
Ritu Sahni
Brian Schwartz
Henry E. Wang

A Moment's Pause to say THANKS!


On the Road to
Subspecialization in
Prehospital
Emergency Care

General Certificate(s)	Subspecialty Certificates
American Board of Allergy and Immunology	
Allergy and Immunology	
American Board of Anesthesiology	
Anesthesiology	Critical Care Medicine Hospice and Palliative Medicine [1] Pain Medicine
American Board of Colon and Rectal Surgery	
Colon and Rectal Surgery	
American Board of Dermatology	
Dermatology	Clinical and Immunology Dermatopath Pediatric De
American Board of Emergency Medicine	
Emergency Medicine	Hospice and Medical Tox Pediatric Emergency Medicine Sports Medicine Undersea and Hyperbaric Medicine
American Board of Family Medicine	
Family Medicine	Adolescent Medicine Geriatric Medicine Hospice and Palliative Medicine [1] Sleep [illegible] Sports [illegible]
American Board of Internal Medicine	
Internal Medicine	Adolescent Medicine Cardiovascular Disease Clinical Cardiac Electrophysiology Critical Care Medicine Endocrinology, Diabetes and Metabolism Gastroenterology Geriatric Medicine Hematology Hospice and Palliative Medicine [1] Infectious Disease Interventional Cardiology Medical Oncology Nephrology Pulmonary Disease Rheumatology Sleep Medicine Sports Medicine Transplant Hepatology

American Board of Medical Specialties

Higher standards. Better care.®

American Board of Medical Genetics	
Clinical Biochemical Genetics Clinical Cytogenetics Clinical Genetics (MD) Clinical Molecular Genetics PhD Medical Genetics	Medical Biochemical Genetics4 Molecular Genetic Pathology
American Board of Neurological Surgery	
Neurological Surgery	
American Board of Nuclear Medicine	
	Critical Care Medicine Gynecologic Oncology Hospice and Palliative Medicine [1] Maternal and Fetal Medicine Reproductive Endocrinology/Infertility
American Board of Ophthalmology	
Ophthalmology	
American Board of Orthopaedic Surgery	
Orthopaedic Surgery	Orthopaedic Sports Medicine Surgery of the Hand
[illegible]	
Otolaryngology	Neurotology Pediatric Otolaryngology [illegible] Surgery with the Head and Neck Sleep Medicine
American Board of Pathology	
Anatomic Pathology and Clinical Pathology Pathology - Anatomic Pathology - Clinical	Blood Banking/Transfusion Medicine Chemical Pathology Cytopathology Dermatopathology Forensic Pathology Hematology Medical Microbiology Molecular Genetic Pathology Neuropathology Pediatric Pathology

ABMS Member Boards certify physicians in more than 145 specialties and subspecialties.

American Board of Pathology	
Anatomic Pathology and Clinical Pathology Pathology - Anatomic Pathology - Clinical	Blood Banking/Transfusion Medicine Chemical Pathology Cytopathology Dermatopathology Forensic Pathology Hematology Medical Microbiology Molecular Genetic Pathology Neuropathology Pediatric Pathology

American Board of Pediatrics	
Pediatrics	Adolescent Medicine Child Abuse Pediatrics [2] Developmental-Behavioral Pediatrics Hospice and Palliative Medicine [1] Medical Toxicology Neonatal-Perinatal Medicine Neurodevelopmental Disabilities Pediatric Cardiology Pediatric Critical Care Medicine Pediatric Emergency Medicine Pediatric Endocrinology Pediatric Gastroenterology Pediatric Hematology-Oncology Pediatric Infectious Diseases Pediatric Nephrology Pediatric Pulmonology Pediatric Rheumatology Pediatric Transplant Hepatology Sleep Medicine Sports Medicine

American Board of Physical Medicine and Rehabilitation	
Physical Medicine and Rehabilitation	Hospice and Palliative Medicine [1] Neuromuscular Medicine [2] Pain Medicine Pediatric Rehabilitation Medicine Spinal Cord Injury Medicine Sports Medicine

American Board of Plastic Surgery	
Plastic Surgery	Plastic Surgery Within the Head and Neck Surgery of the Hand

American Board of Preventive Medicine	
Aerospace Medicine Occupational Medicine Public Health and General Preventive Medicine	Medical Toxicology Undersea and Hyperbaric Medicine

American Board of Psychiatry and Neurology	
Psychiatry Neurology Neurology with Special Qualifications in Child Neurology	Addiction Psychiatry Child and Adolescent Psychiatry Clinical Neurophysiology Forensic Psychiatry Geriatric Psychiatry Hospice and Palliative Medicine [1] Neurodevelopmental Disabilities Neuromuscular Medicine [2] Pain Medicine Psychosomatic Medicine Sleep Medicine Vascular Neurology

American Board of Radiology	
Diagnostic Radiology Radiation Oncology Radiologic Physics	Hospice and Palliative Medicine [1] Neuroradiology Nuclear Radiology Pediatric Radiology Vascular and Interventional Radiology

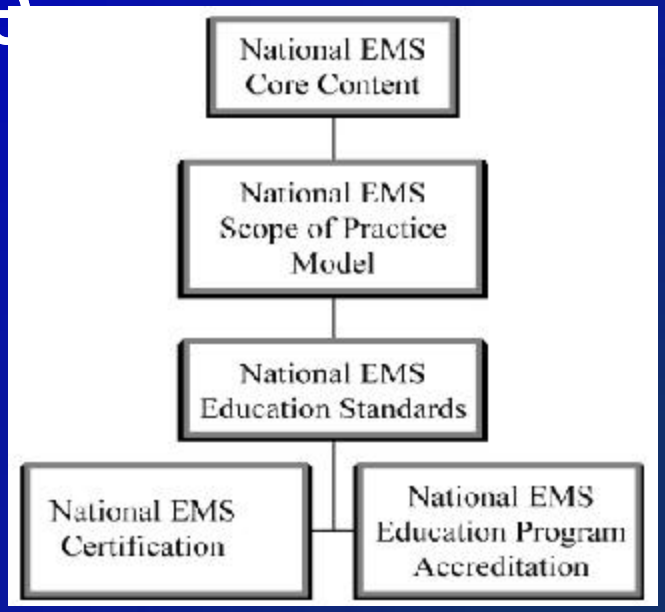
American Board of Surgery	
Surgery Vascular Surgery	Hospice and Palliative Medicine [1] Pediatric Surgery Surgery of the Hand Surgical Critical Care

American Board of Thoracic Surgery	
Thoracic Surgery	Congenital Cardiac Surgery [4]

American Board of Urology	
Urology	Pediatric Urology

Subspecialty Update

- *PEC* editorial July 2005
- Committee in place since at least 2001
- Draft submitted to ABEM in October
- Meeting with ABEM here



Subspecialty Eligibility
DRAFT IDEAS

Practice Pathway Options –

- Will "sunset" 5 to 7 years after approval

What will "EMS practice" be?

- Who will decide if you qualify?

Training Pathway

- The only option after practice options sunset
- Completion of an ACGME-accredited fellowship in EMS

Other Subspecialty Issues

-Approaching Accreditation Council for Graduate Medical Education (ACGME) regarding credentialing of fellowship programs

- Writing a credible, defensible test

- Funding the test-writing effort

- Maintenance of certification

- *…and many others*

Final Exam!

- A sneak peek at some of the questions being formulated for the ABEM exam…

Question 73: Operations

- How many D batteries fit in a full-size Mag-Lite®?

Question 145: History of EMS

- Describe, in twenty words or less, the contributions of each of these EMS giants:
  - Ronald D. Stewart
  - R Adams Cowley
  - Sandy Kuehl

The Path to Success as a Sub-Specialty

- Develop measures to build the value-added interdependency

- Manage activities, time and quality to strengthen this interdependency

- Analyze performance to determine the effectiveness of those measures and management

To overcome barriers, organizations need measures for three purposes:

1. *Strategic - to drive strategies into action and change the organizational culture*
2. *Diagnostic - to evaluate the effectiveness of these actions and the extent of* change
3. *Operational - to improve continuously*

Castaneda-Mendez

1. Are strategies operationally defined?
2. Are the causal relationships among the strategies clear?
3. Will all constituents receive strategic value?
4. Does everyone know what the strategic direction is and remain committed to it?
5. Does each person know how he or she can contribute to the organization's success?

Castaneda-Mendez

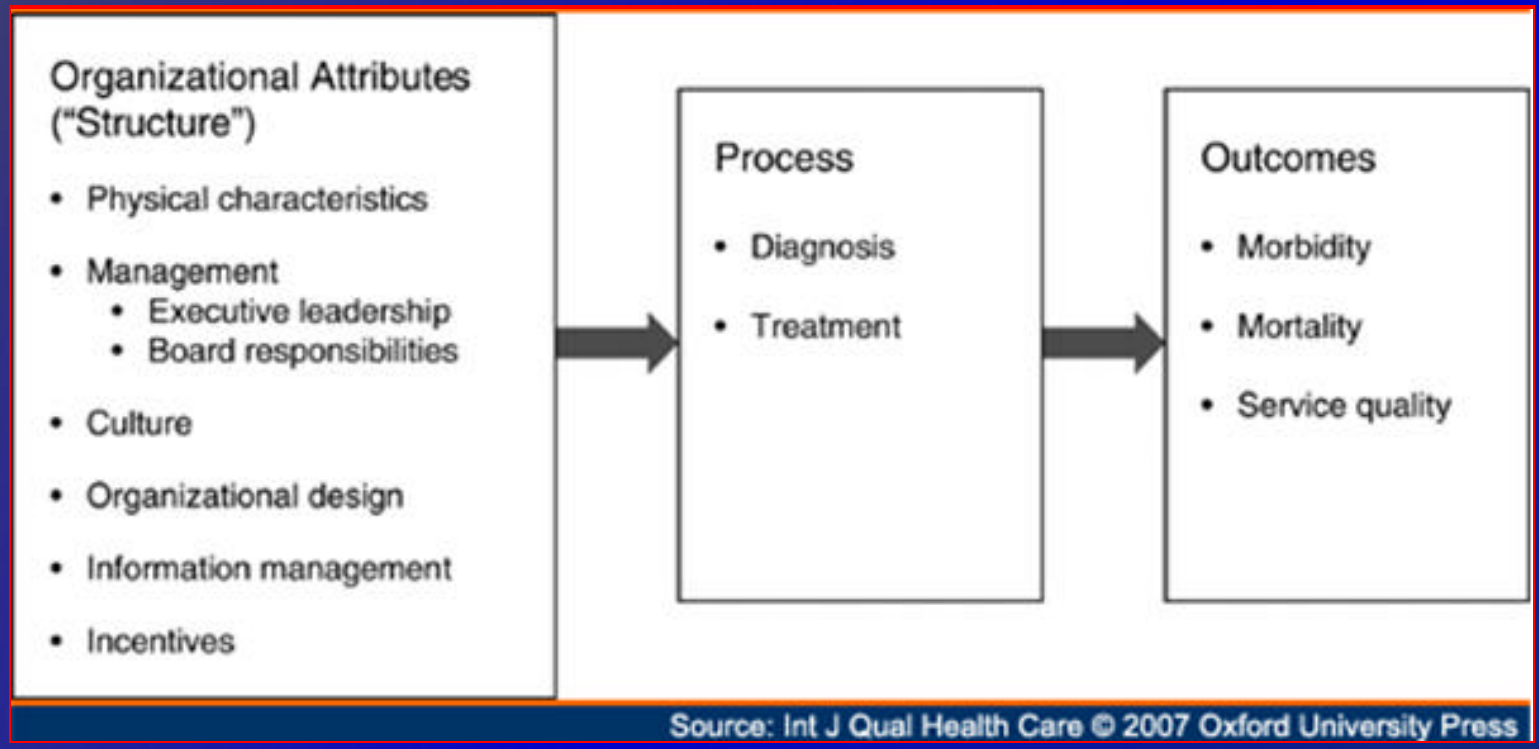
Without an integration of clinical and financial measures, the same organizations will find it nearly impossible to effectively operate the processes they are so keen on improving.

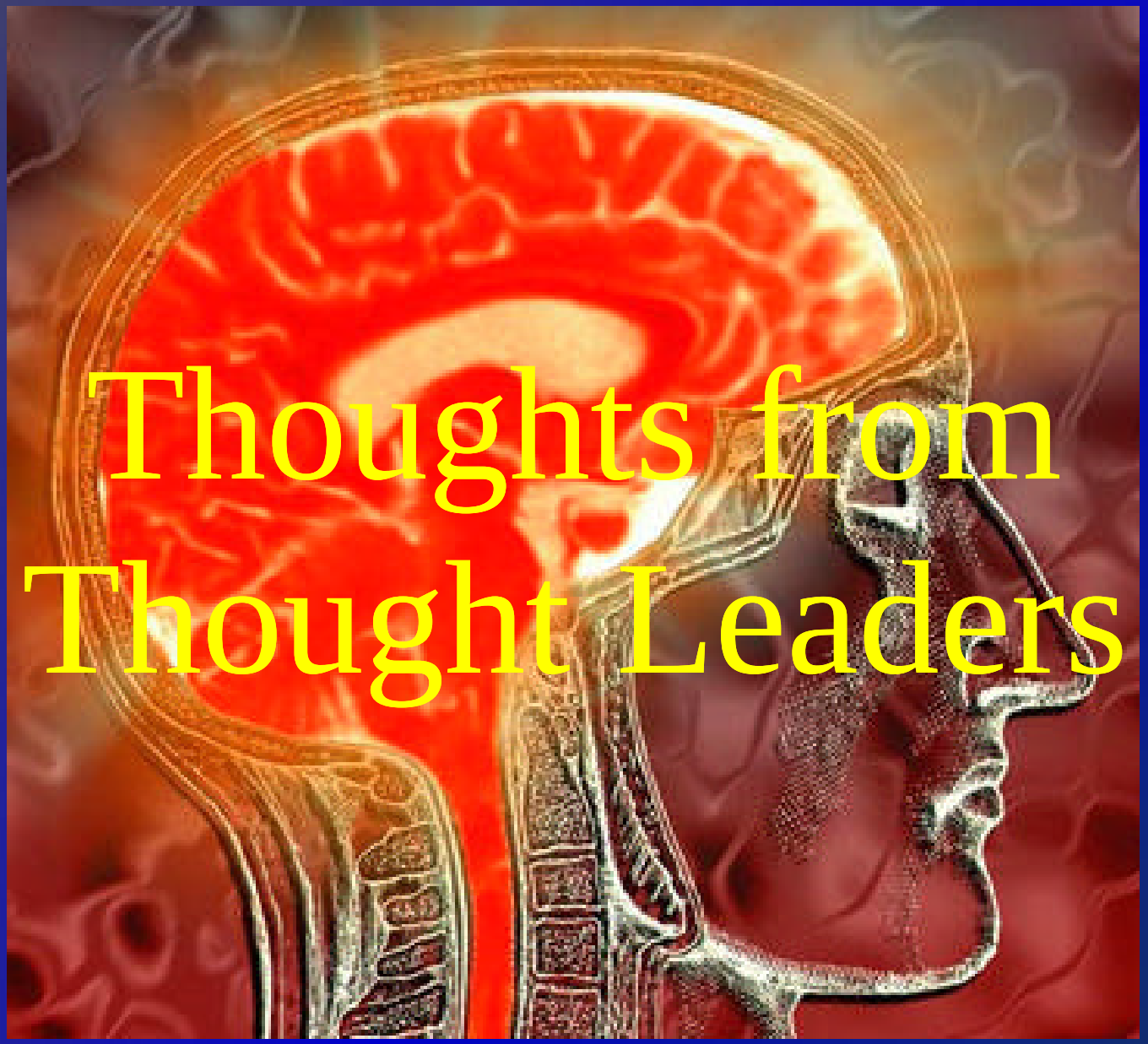
- Donabedian believed strongly in the importance of health-care structure, seeing it as a driving force for later care processes and ultimately for health outcomes.
- Donabedian's commentary on structure focused on physical structure, facilities, and provider qualifications

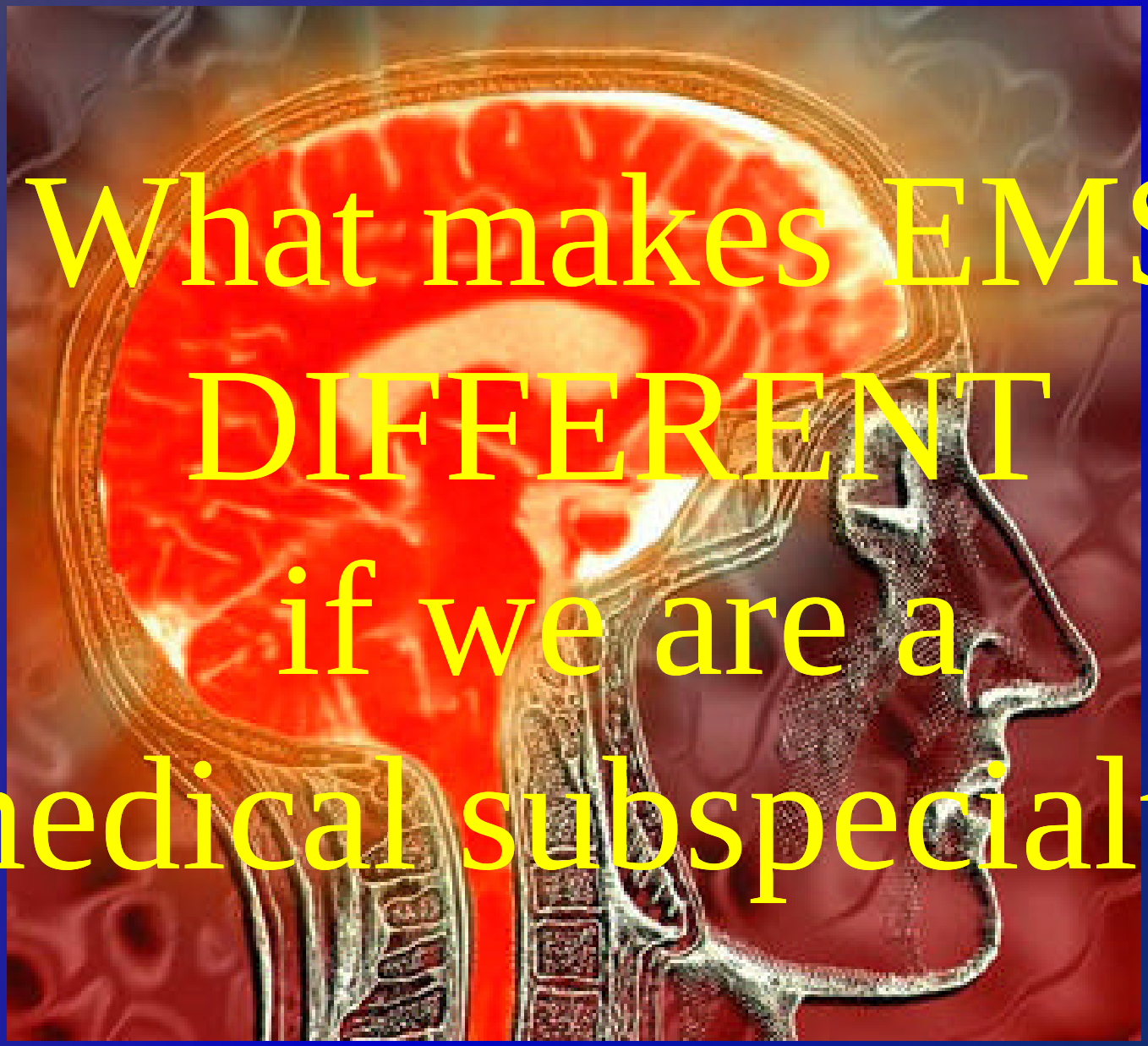
Glickman et al
Int J Qual Health Care
2007;19(6):341-348

- Effective organizational capabilities, such as leadership, human capital, information management systems and group dynamics (such as culture and incentive systems), are essential structural elements of quality improvement in a health-care organization and serve as the primary catalysts for process change.

Glickman et al
Int J Qual Health Care
2007;19(6):341-348



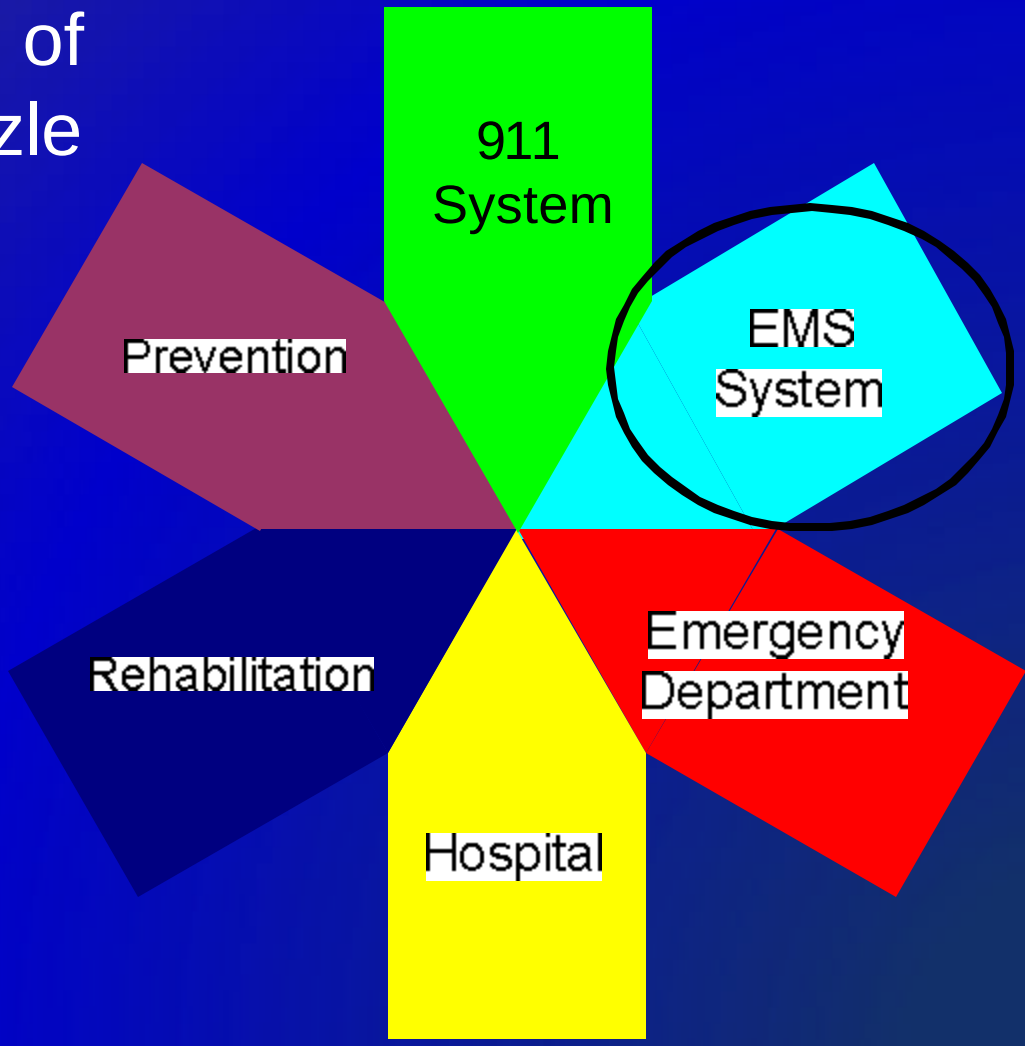

Thoughts from
Thought Leaders



What makes EMS DIFFERENT if we are a medical subspecialty?

Where We Need to Be

- EMS is one piece of a health care puzzle



"EMS Medical Direction
is a part-time job for so many
EMS docs, who also
do it for free.
The overwhelming majority of
people who come to this meeting
don't have EMS as the primary
part of their practice."

Jeff Goodloe

"The external validation of a subspecialty status gives EMS the proper focus."

Jeff Goodloe

"ABMS recognition of
EMS as a subspecialty
will unlock resources to
improve EMS at every level,
benefiting EMS providers,
researchers, and
most of all…patients."

Bob Suter

"EMS delivery requires collaborative efforts of many health care providers. The promotion of science in an environment that requires collaboration is necessary to apply the art of medicine."

Bill Brown

“How much capacity
do you have?
One doctor has enormous
capacity to affect
underserved markets.”

Kelly Curry

“It’s much more efficient for SOMEBODY to be an expert on something.”

A.J Heightman

BLS IS ALS

Basic Life Support

- AED
- CPAP?
- 12 Lead transmission
- MAD Narcan?
- Albuterol?
- ASA
- NTG
- King Airways?

Or maybe…

ALS IS BLS

"Now that we're pushing all of these skills to Basic providers, EMS Medical Direction of BLS Systems is more important than ever."

A.J Heightman

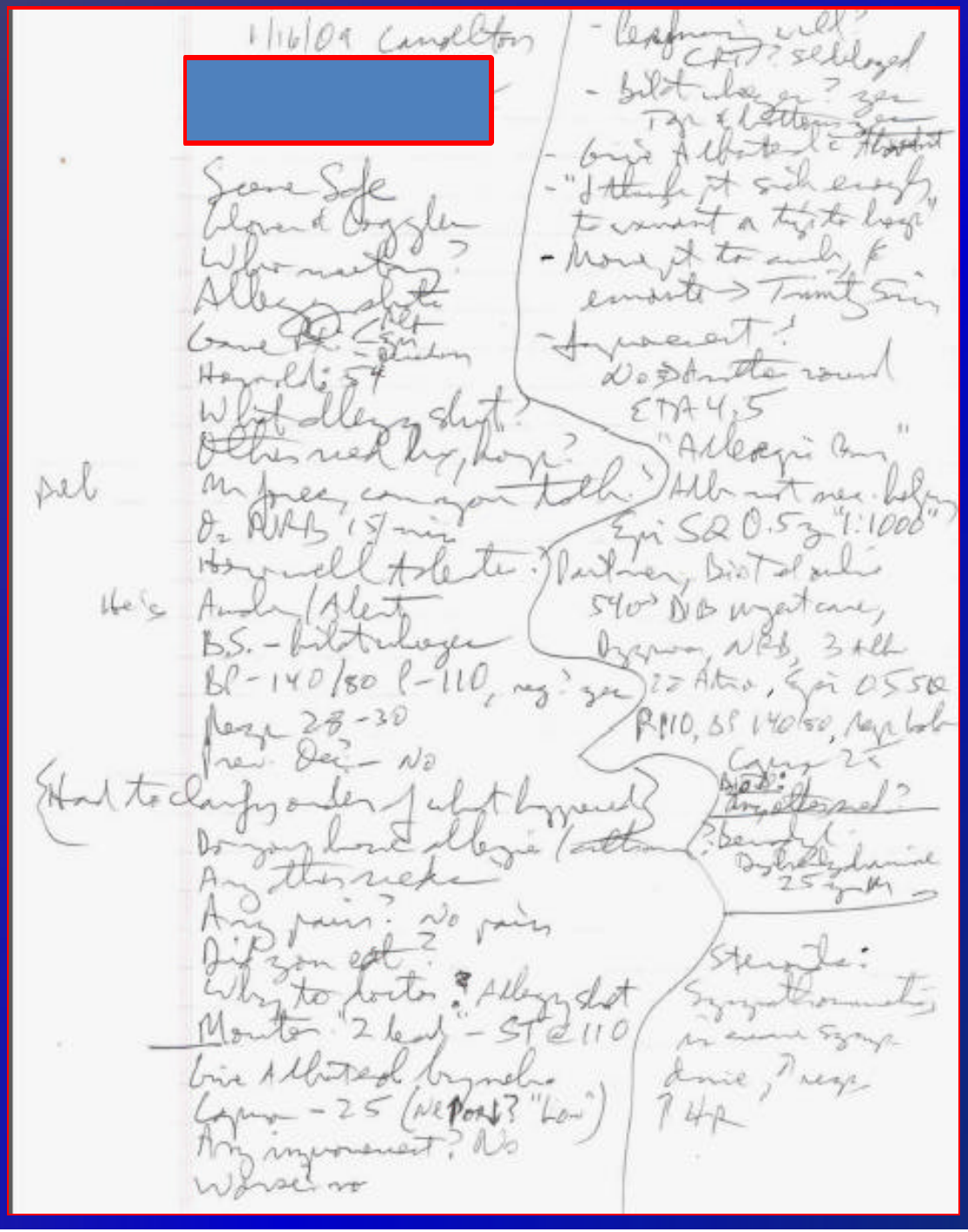
House Call

Manpower Redeployment and Maximization

“What Brent Myers is demonstrating is the future of prehospital medicine, adding to the career rung for so many providers”

“It’s my dream every cab would have an AED AND give a $100 bonus to the first person on the chest in a cardiac arrest.”

A.J Heightman



Scene Survey/Mechanism/# pts.

↓

LOC/Airway/Cspine

↓

Respiratory Rate and Labor

↓

Pulses R & Q, N & W
Skin CMT/CRT/External Bleeding

↓

Neck appearance, JVD, Trachea

↓

Chest appearance, BS, HT

↓

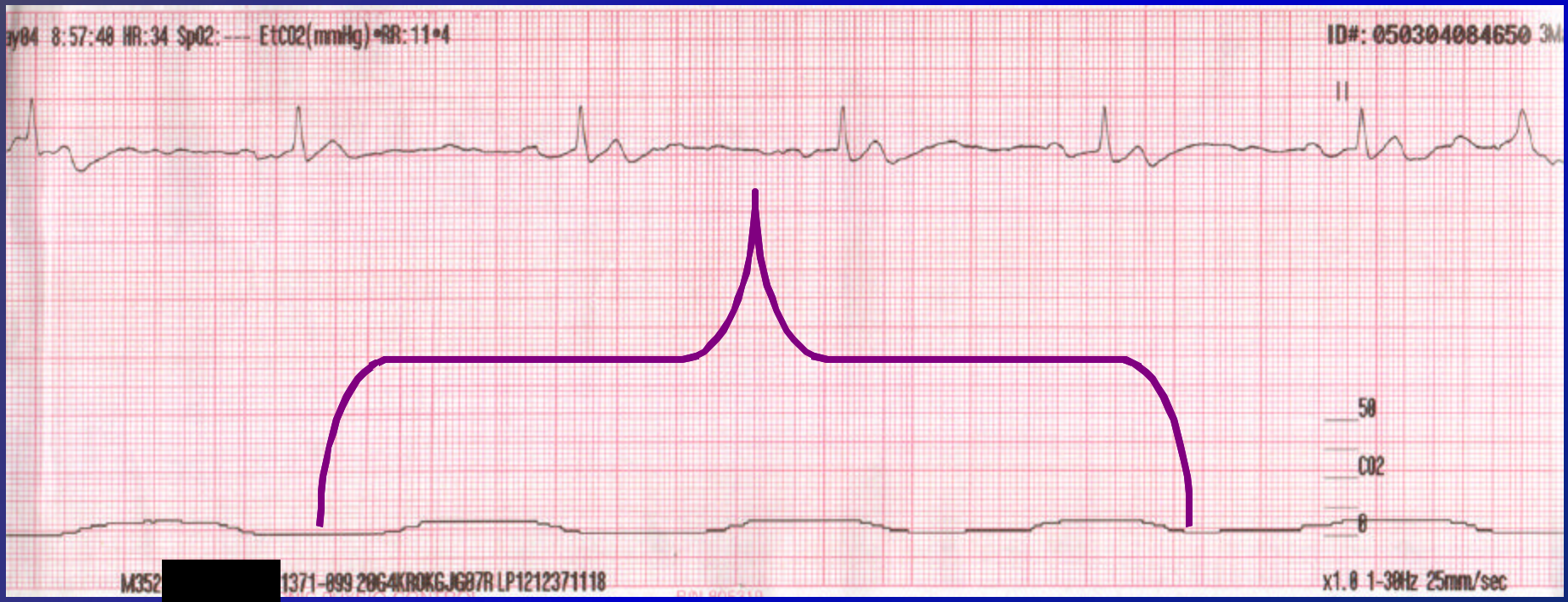
Quick survey of abdomen, pelvis, extremities, and back

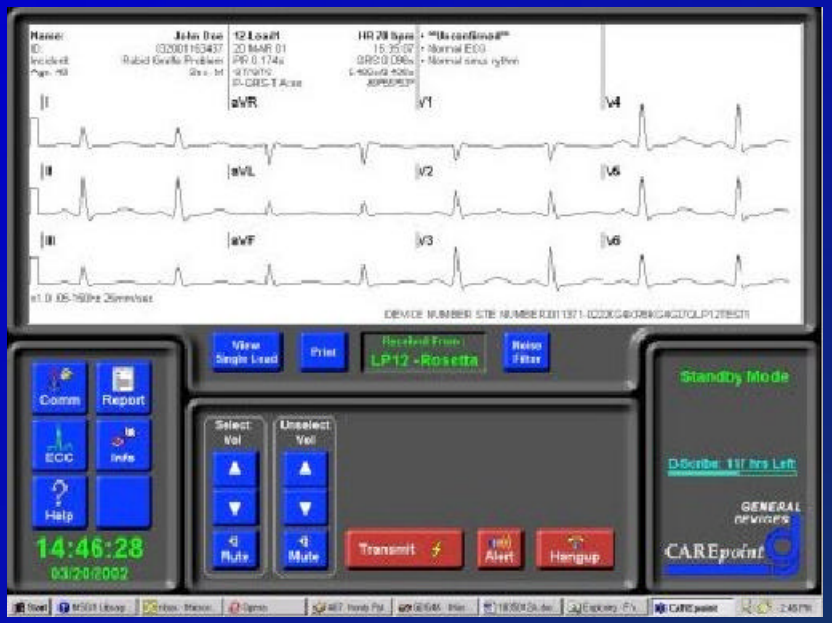
Central Cyanosis

Paint Gun


Capnography
and EMS

Capnography is the window into preventing overventilation


8:57:48 HR:34 SpO2:--- EtCO2(mmHg) RR:11
ID#: 050304084650
II
50
CO2
0
x1.0 1-30Hz 25mm/sec




ECG
10:07:10

"We must re-visit the criteria for flying patients, an effort already in process."

A.J Heightman


Trauma
STEMI
Pediatric
Burns
Stroke
Sepsis?

"This systematic review demonstrates that over the past 30 years, there has been constant growth in articles published identifying the role of the physician in the development of EMS."

Multivariate Predictors of Failed Prehospital Endotracheal Intubation

Henry E. Wang, MD, Douglas F. Kupas, MD, Paul M. Paris, MD, Robyn R. Bates, MS, Joseph P. Costantino, DrPH and Donald M. Yealy, MD

From the Department of Emergency Medicine, University of Pittsburgh School of Medicine (HEW, PMP, RRB, DMY), Pittsburgh, PA; the Department of Emergency Medicine, Geisinger Health System (DFK), Danville, PA; and the Department of Biostatistics, Graduate School of Public Health, University of Pittsburgh (JPC), Pittsburgh, PA.

Of 61 factors potentially related to ETI failure, multivariate logistic regression revealed the following significant covariates associated with ETI failure (odds ratio; 95% confidence interval; likelihood ratio p-value):

presence of clenched jaw/trismus
(9.718; 95% CI = 4.594 to 20.558; p < 0.0001);

inability to pass the endotracheal tube through the vocal cords
(7.653; 95% CI = 3.561 to 16.447; p < 0.0001);

inability to visualize the vocal cords
(7.638; 95% CI = 3.966 to 14.707; p < 0.0001);

intact gag reflex
(7.060; 95% CI = 3.552 to 14.033; p < 0.0001);

intravenous access established prior to ETI attempt
(3.180; 95% CI = 1.640 to 6.164; p = 0.0005);

increased weight (ordinal scale)
(1.555; 95% CI = 1.242 to 1.947; p = 0.0001);

electrocardiographic monitoring established prior to ETI attempt
(0.199; 95% CI = 0.084 to 0.469; p = 0.0003).

Airway

The King LTS-D

"EMS providers in this study were able to place the King LTS-D as a primary airway in RSI patients with a high degree of success."

(Recommends larger, multicenter randomized trial)

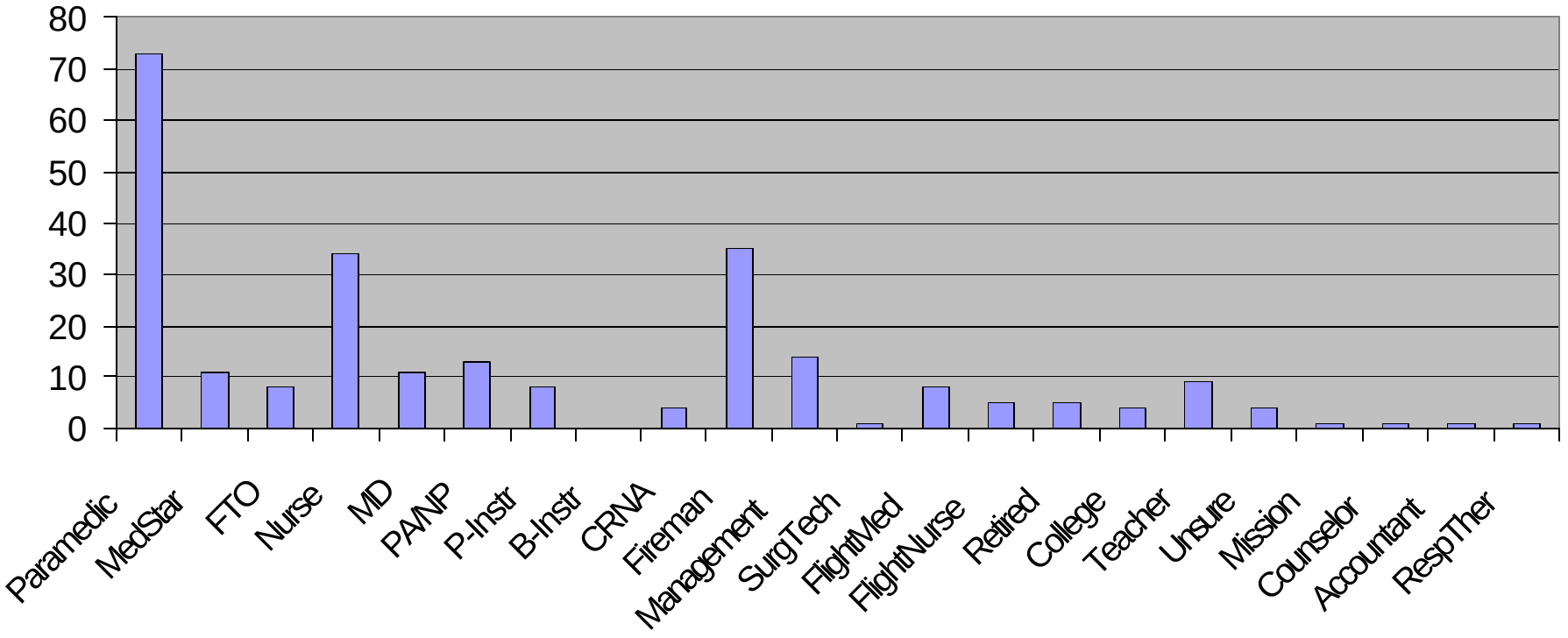
"…we suggest that implementation of a physician medical direction is associated with improved clinical indicators and overall quality of care of an established EMS system."

The End of the Beginning

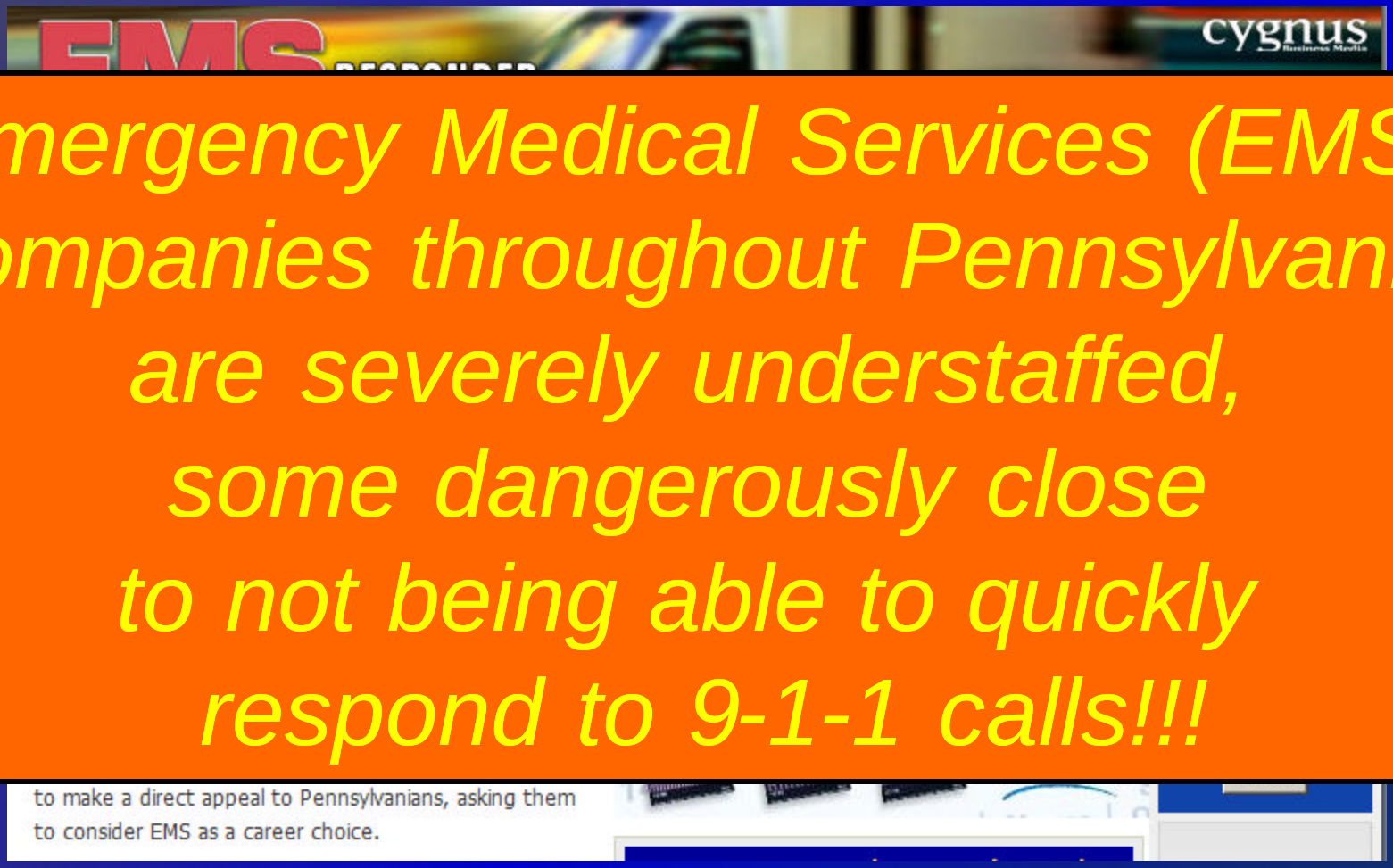
- **Innocence is over**
- **We are COMPLETELY accountable for what they do**
- **Becoming a subspecialty requires us to maintain a rigorous standard**
- **EMS is ONLY and ALWAYS about patient care**


CARROLLTON
FIRE

5 Year Future Plans for MedStar Interviewees (N = 189)



We have to face the fact
that medics in many cases,
perhaps most cases,
will be “passing through”
the field enroute to
other careers,
or parallel careers



Emergency Medical Services (EMS) companies throughout Pennsylvania are severely understaffed, some dangerously close to not being able to quickly respond to 9-1-1 calls!!!

The Minnesota Study

http://www.health.state.mn.us/divs/chs/rhpc/cah/rasstudy.htm

***Recruitment and Retention of Personnel*:**

State of Minnesota, 2001 to present

Barriers to Recruitment and Retention

**** Nature of the work***
**** Changing demographics***
**** Selective volunteerism***
**** "Invisibility" (the effects of HIPAA)***
**** Time and training demands (Initial and CE)***
**** Ongoing training ("too much")***
**** High stress and menial tasks***
**** Fear of errors***
**** The need for high quality Medical Direction***
**** Employment concerns***
**** Compensation (no pay to $20/run to $12/hour)***
**** Retirement***

Choosing EMS as a Profession

Is this career right for YOU?

- Do you enjoy a dynamic and fast-paced work environment?
- Have you ever thought that you might want to help people in crisis?
- Are you looking for a challenging career?
- Are you willing to continue your education even after receiving your initial license?
- Are you emotionally stable?
- Do you have good physical agility and coordination?
- Are you able to lift and carry heavy loads?
- Do you have a good driving record?
- Do you have a clean background?
- Do you work well with others and in teams?
- Are you able to inspire trust in others?
- Are you a reliable and dependable employee?
- Are you willing to work long hours?

If so, EMS may be the career for you!! EMS allows you the opportunity to contribute to your community in a vital and productive way. For more information about how to become an EMT or paramedic, contact your local emergency services agency, your regional EMS office, or visit one of the websites listed for more information about EMS as a career, educational programs in your area, and job opportunities.

Websites for Additional Information On EMS Education and Careers

http://health.state.ga.us/programs/ems/index.asp

http://www.ga-ems.com

http://www.naemt.org

http://www.nremt.org

http://www.tcsg.edu

GEORGIA OFFICE OF EMS AND TRAUMA

State Office of EMS - Atlanta:
404.679.0547

North Georgia Region 1 - Rome
Northeast Georgia Region 2 - Gainesville
Metro Atlanta Region 3 - Atlanta
West Georgia Region 4 - LaGrange
Central Georgia Region 5 - Eatonton
East Central Georgia Region 6 - Augusta
West Central Georgia Region 7 - Columbus
Southwest Georgia Region 8 - Moultrie
Southeast Georgia Region 9 - Brunswick
Northeast Georgia Region 10 - Athens

Your Service Info Here:

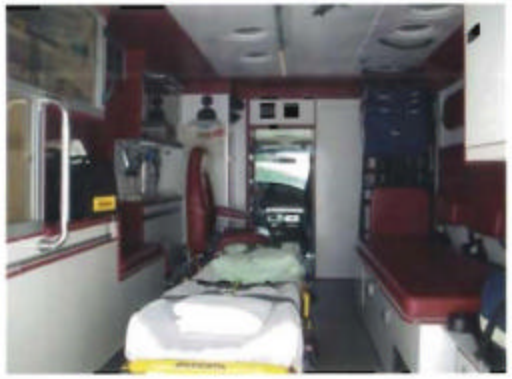
Job Description

Nature of Work

Emergency Medical Services (EMS) can be an exciting and rewarding career. EMS personnel are responsible for providing emergency care in the pre-hospital environment to individuals experiencing acute illness or injury.

Work Environment

EMS personnel predominantly work outdoors, in all types of weather. There is a considerable amount of strenuous work including lifting, kneeling, and bending. There is risk of exposure to some infectious diseases, loud noises, hazardous materials, violence, and mentally ill patients. While the work can be exciting, it is often stressful both physically and emotionally from dealing with critically ill patients and life and death situations. EMS personnel often work in excess of 40 hours per week on up to 24 hour shifts.



Employment

EMS professionals may be employed by a variety of agencies: fire-department based, hospital-based services, private EMS agencies, or government entities. In Georgia, EMS professionals are sometimes employed in hospital emergency departments.

Job Outlook

According to the National Bureau of Labor's Occupational Outlook, there is expected to be a growth of 19% between 2006 and 2016. There is an anticipated increase in demand for EMTs and paramedics as our population ages and there is an increase in medical emergencies.

Salary Expectations

Salaries vary by areas of the state and type of employing agency, as well as by level of provider. Annual EMT average pay ranges from $29,000 - $39,000 and annual EMT-Paramedic average pay ranges from $35,000 - $45,000 depending on the region in Georgia.

Training and Education

There are three licensed levels of EMS provider in Georgia; EMT-Basic, EMT-Intermediate, and Paramedic. The minimum number of hours to complete an EMT-Basic course is 132. The minimum number of hours to complete an EMT-Intermediate course is 200. The minimum number of hours to complete a paramedic course is 824 hours. Some programs, depending on the sponsoring agency may be longer. At each level, upon successful completion of an approved course, students must challenge and successfully pass the state approved exam (currently the National Registry of EMTs)for the appropriate level. Upon receiving notification of passing both the written and skills components of the exam, the individual may apply to the Georgia Office of EMS, to obtain a license to practice. This is required for all levels for employment in Georgia. Initial education programs may be offered through private schools, hospital-based courses, fire department based courses, and the Georgia Department of Technical and Adult Education Technical College system.

Where will we find them?

High Schools
Churches
Volunteer groups
Colleges
Vocational Technical Schools
Public call to service
Fire agencies
Other municipal firms

"I think we should create a whole career track where after five years, the paramedic is guaranteed a slot in medical school, followed by a residency program in emergency medicine. It's career progression."

Bruce Dubin, DO, JD
Associate Dean for Academic Affairs
University of North Texas
Health Science Center

What do I Think is Our Future?

Standards for Credentialing
National Registry Certification
NEMSIS Data Tracking
Progressive State Standards
Closer Communication for Progress
Certification for EMS Physicians

A Model of Hiring Excellence

MedStar Ambulance Service

Fort Worth, TX

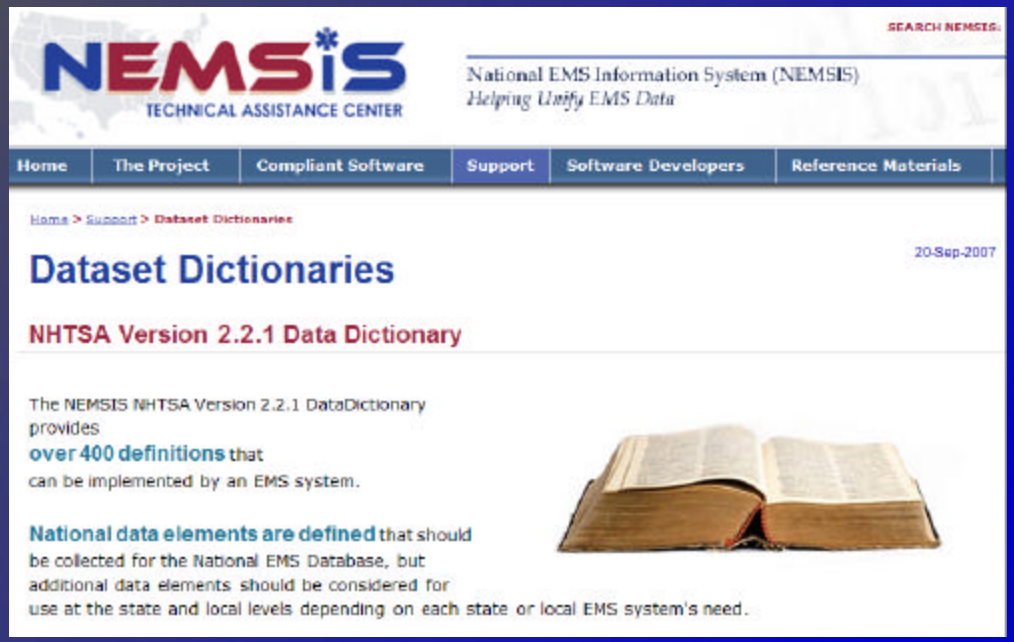
Staffing:

- *Basic EMT*
- *EMT-I*
- *Secondary Medic*
- *Lead Secondary Medic*
- *Primary Medic*

Credentialing

is the

Key to Success



The National EMS Information System

A Standardized Dataset of over 400 data elements

NEMSIS TECHNICAL ASSISTANCE CENTER

SEARCH NEMSIS:

National EMS Information System (NEMSIS)
Helping Unify EMS Data

Home | The Project | Compliant Software | Support | Software Developers | Reference Materials

Home > Support > Dataset Dictionaries

Dataset Dictionaries

20-Sep-2007

NHTSA Version 2.2.1 Data Dictionary

The NEMSIS NHTSA Version 2.2.1 DataDictionary provides **over 400 definitions** that can be implemented by an EMS system.

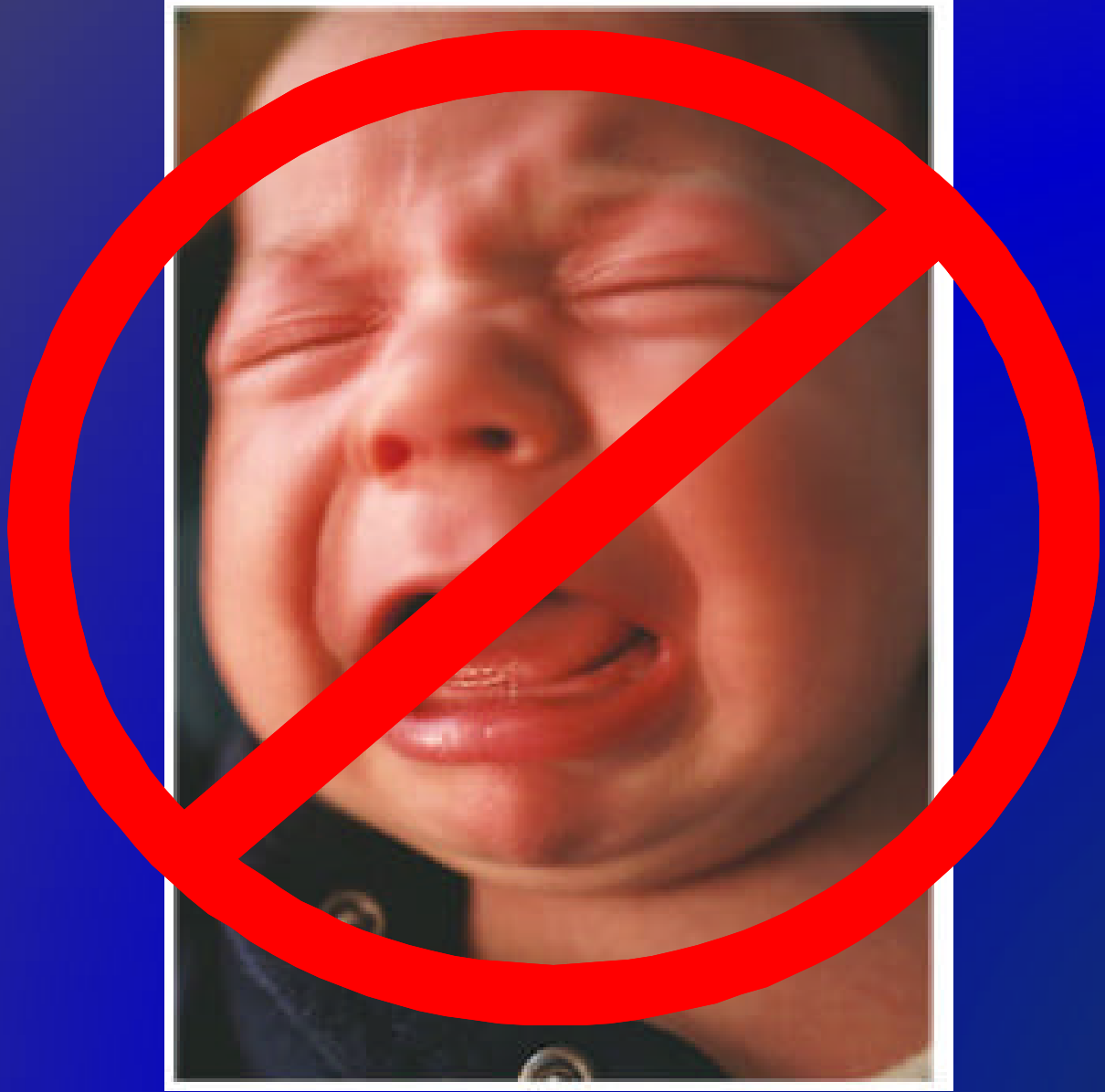
National data elements are defined that should be collected for the National EMS Database, but additional data elements should be considered for use at the state and local levels depending on each state or local EMS system's need.

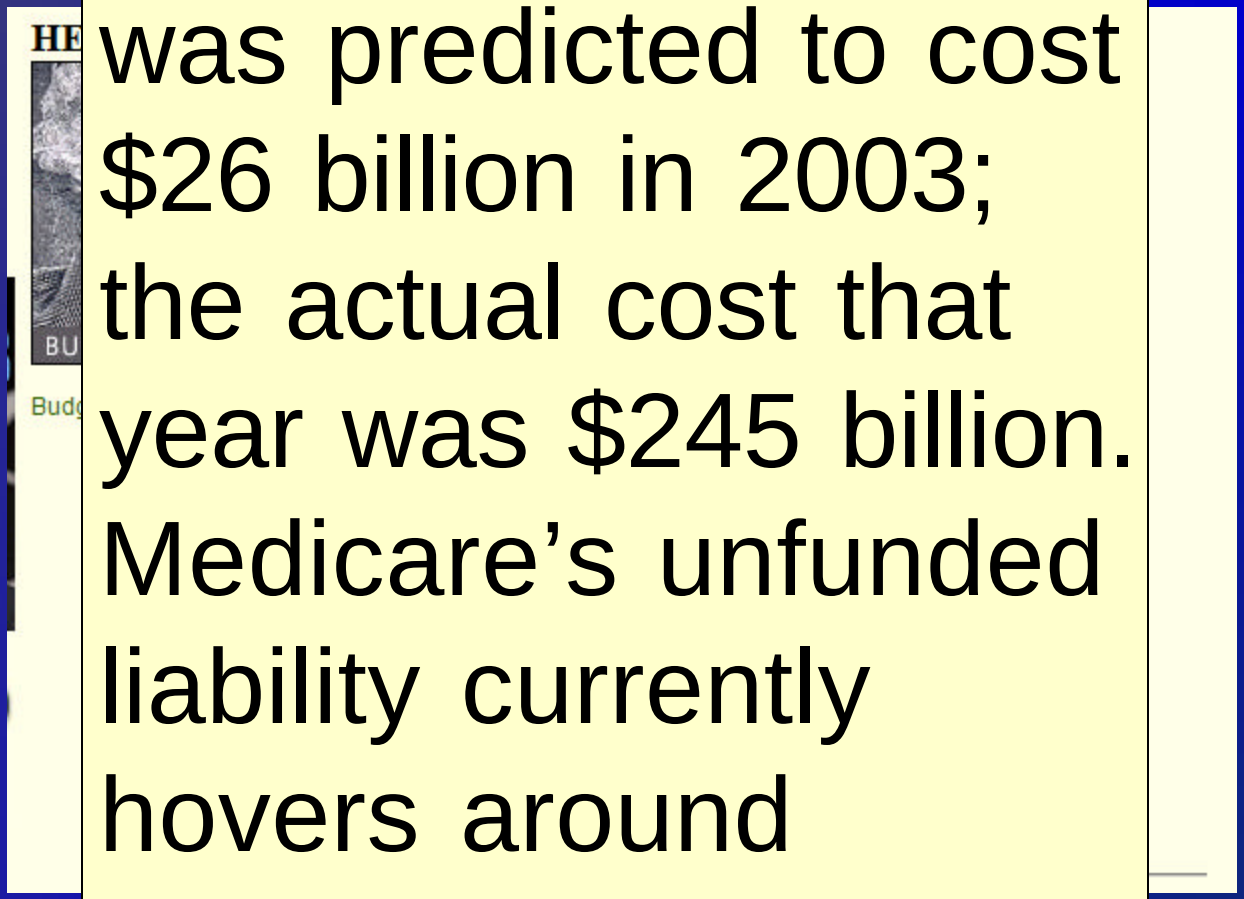

PARKLAND EMERGENCY & TRAUMA


What a week this has been...

Synthesis


The future is dimly lit
VLADSTUDIO





"In 1965, Medicare was predicted to cost $26 billion in 2003; the actual cost that year was $245 billion. Medicare's unfunded liability currently hovers around $40 trillion."

My thoughts for progress…

We must take an oath,
of commitment,
as a group, on our honor


This is our time

Thank you for your Kind Attention!