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
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
History

- National Academy of Sciences Study
- Publication in 1966 of “Accidental Death and Disability: The Neglected Disease of Modern Society”
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

- First Department of Transportation Curriculum for Training in 1966
- EMS Systems Act of 1973
Emergency Medical Services (EMS) of the future will be community-based health management that is fully integrated with the overall health care system. It will have the ability to identify and modify illness and injury risks, provide acute illness and injury care and follow-up, and contribute to treatment of chronic conditions and community health monitoring. This new entity will be developed from redistribution of existing health care resources and it will be integrated with other health care providers and public health and safety agencies. It will improve community health and result in a more appropriate use of acute health care resources. EMS will remain the public's emergency medical safety net.

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

-M. Zavadsky
An individual may perform only those procedures for which they are educated, certified, licensed, AND credentialed, Trained to Do
Certified As Competent
State Licensed to Practice
Credentialed by Medical Director
Bringing us to...
On the Road to Subspecialization in Prehospital Emergency Care
ABMS Member Boards certify physicians in more than 145 specialties and subspecialties.
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
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*
What makes EMS DIFFERENT if we are a medical subspecialty?
“The external validation of a subspecialty status gives EMS the proper focus.”

Jeff Goodloe
Where We Need to Be

- EMS is one piece of a health care puzzle
“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
Advancing public health opportunities will require EMS providers to be prepared as never before.

House Call
Manpower Redeployment and Maximization
“What Brent Myers and Dave Kesig are demonstrating is the future of prehospital medicine, adding to the career rung for so many providers”
Development and Perception of an EMS Social Service Referral Program in an Urban Fire Based EMS System
“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
Capnography is the window into preventing overventilation
<table>
<thead>
<tr>
<th>Patient</th>
<th>Transmission</th>
<th>Received</th>
<th>Institution</th>
<th>Patient name</th>
<th>Patient ID</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transport 7</td>
<td></td>
<td>02/12/2009 17:01:08</td>
<td>Anytown Fire Dept</td>
<td></td>
<td>0902121114577ae9</td>
<td>Started</td>
</tr>
<tr>
<td>Medic 13</td>
<td></td>
<td>02/12/2009 17:01:08</td>
<td>Local EMS Agency</td>
<td></td>
<td>0902121110821ae9</td>
<td>Started</td>
</tr>
<tr>
<td>Medic 21</td>
<td></td>
<td>02/12/2009 17:01:08</td>
<td>AMR</td>
<td></td>
<td>0902111540267ae9</td>
<td>Started</td>
</tr>
<tr>
<td>MU-78</td>
<td></td>
<td>02/12/2009 17:01:07</td>
<td>Anytown Fire Dept</td>
<td></td>
<td>0902101725277ae9</td>
<td>Started</td>
</tr>
<tr>
<td>Rescue 5</td>
<td></td>
<td>02/12/2009 17:01:07</td>
<td>Other EMS</td>
<td></td>
<td>0902101110239ae9</td>
<td>Started</td>
</tr>
<tr>
<td></td>
<td></td>
<td>02/12/2009 17:01:06</td>
<td></td>
<td></td>
<td>09021010906147ae9</td>
<td>Started</td>
</tr>
<tr>
<td></td>
<td></td>
<td>02/12/2009 17:01:01</td>
<td></td>
<td></td>
<td>0902120818177ae9</td>
<td>Started</td>
</tr>
<tr>
<td></td>
<td></td>
<td>02/12/2009 17:00:59</td>
<td></td>
<td></td>
<td>0902110939457ae9</td>
<td>Started</td>
</tr>
<tr>
<td></td>
<td></td>
<td>02/12/2009 17:00:58</td>
<td></td>
<td></td>
<td>0902111081912ae9</td>
<td>Started</td>
</tr>
<tr>
<td></td>
<td></td>
<td>02/12/2009 17:00:57</td>
<td></td>
<td></td>
<td>0902101433307ae9</td>
<td>Started</td>
</tr>
<tr>
<td></td>
<td></td>
<td>02/12/2009 17:00:56</td>
<td></td>
<td></td>
<td>0902101040327ae9</td>
<td>Started</td>
</tr>
<tr>
<td></td>
<td></td>
<td>02/12/2009 17:00:55</td>
<td></td>
<td></td>
<td>0902101000238ae9</td>
<td>Started</td>
</tr>
<tr>
<td></td>
<td></td>
<td>02/12/2009 17:00:55</td>
<td></td>
<td></td>
<td>0902100959147ae9</td>
<td>Started</td>
</tr>
<tr>
<td></td>
<td></td>
<td>02/12/2009 17:00:54</td>
<td></td>
<td></td>
<td>0902090951007ae9</td>
<td>Started</td>
</tr>
<tr>
<td></td>
<td></td>
<td>02/12/2009 17:00:53</td>
<td></td>
<td></td>
<td>0902061703161ae9</td>
<td>Started</td>
</tr>
<tr>
<td></td>
<td></td>
<td>02/12/2009 17:00:52</td>
<td></td>
<td></td>
<td>0902061655286ae9</td>
<td>Started</td>
</tr>
<tr>
<td></td>
<td></td>
<td>02/12/2009 17:00:51</td>
<td></td>
<td></td>
<td>0902061538567ae9</td>
<td>Started</td>
</tr>
<tr>
<td></td>
<td></td>
<td>02/12/2009 17:00:50</td>
<td></td>
<td></td>
<td>0902061655286ae9</td>
<td>Started</td>
</tr>
<tr>
<td></td>
<td></td>
<td>02/12/2009 17:00:49</td>
<td></td>
<td></td>
<td>0902050917167ae9</td>
<td>Started</td>
</tr>
<tr>
<td></td>
<td></td>
<td>02/12/2009 17:00:48</td>
<td></td>
<td></td>
<td>0902050913527ae9</td>
<td>Started</td>
</tr>
<tr>
<td></td>
<td></td>
<td>02/12/2009 17:00:47</td>
<td></td>
<td></td>
<td>0902040947297ae9</td>
<td>Started</td>
</tr>
<tr>
<td></td>
<td></td>
<td>02/12/2009 17:00:46</td>
<td></td>
<td></td>
<td>0902031435567ae9</td>
<td>Started</td>
</tr>
<tr>
<td></td>
<td></td>
<td>02/12/2009 17:00:42</td>
<td></td>
<td></td>
<td>0902031230036ae9</td>
<td>Started</td>
</tr>
<tr>
<td></td>
<td></td>
<td>02/12/2009 17:00:41</td>
<td></td>
<td></td>
<td>0902031215097ae9</td>
<td>Started</td>
</tr>
<tr>
<td></td>
<td></td>
<td>02/12/2009 17:00:39</td>
<td></td>
<td></td>
<td>0902031111551ae9</td>
<td>Started</td>
</tr>
<tr>
<td></td>
<td></td>
<td>02/12/2009 17:00:38</td>
<td></td>
<td></td>
<td>0902021541333ae9</td>
<td>Started</td>
</tr>
<tr>
<td></td>
<td></td>
<td>02/12/2009 17:00:36</td>
<td></td>
<td></td>
<td>0902021627322ae9</td>
<td>Started</td>
</tr>
<tr>
<td></td>
<td></td>
<td>02/12/2009 17:00:34</td>
<td></td>
<td></td>
<td>0902021604147ae9</td>
<td>Started</td>
</tr>
<tr>
<td></td>
<td></td>
<td>02/12/2009 17:00:33</td>
<td></td>
<td></td>
<td>0901301522497ae9</td>
<td>Started</td>
</tr>
<tr>
<td></td>
<td></td>
<td>02/12/2009 17:00:32</td>
<td></td>
<td></td>
<td>0901301548537ae9</td>
<td>Started</td>
</tr>
<tr>
<td></td>
<td></td>
<td>02/12/2009 17:00:31</td>
<td></td>
<td></td>
<td>0901301237297ae9</td>
<td>Started</td>
</tr>
</tbody>
</table>
“We must re-visit the criteria for flying patients, an effort already in process.”

A.J Heightman
Defining Sepsis Intervention Intervals in the Encounter of Septic Shock in the Prehospital Environment

Gunaga, Fletcher, et al

Trauma
STEMI
Pediatric
Burns
Stroke
Sepsis?
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)
The National EMS Information System (NEMSIS) is a standardized dataset of over 400 data elements.
Dataset Dictionaries

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.
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!!!
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
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
Credentialing is the Key to Success
Synthesis
The future is now
• 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
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!