What is the NAEMD?
by Jeff J. Clawson, M.D.
from Winter 92-93 (Vol. 3, No. 3)

Recently several agencies have asked me about the background and origin of the NAEMD and of its relationship to Medical Priority Consultants. Since its inception in December of 1988, the Academy’s registry of certifications has grown to nearly 7,000 individuals, representing approximately 2,000 progressive EMS agencies throughout the U.S. and Canada. With such incredible interest and growth, the origins, mission and methods of the NAEMD has become an important topic worth discussing in this newsletter. The Academy was initially funded with seed money provided by Medical Priority Consultants, Inc. (MPC), the EMS and EMD consulting firm which I co-founded in July of 1987. At the outset, the Academy’s purpose was to provide an EMD certification registry and international forum for discussing standards and issues relating to the future of Emergency Medical Dispatch.

Since its inception, the NAEMD has gone through the process of becoming a non-profit organization under the rules established by the Federal Government. Although legally separate from Medical Priority Consultants, the Academy still leases its part-time staff from MPC. It’s primary funding comes from EMD certification and recertification fees. Academy membership today can be obtained in any one of five categories: Certified EMD, Executive, Instructor, Associate or Accredited.

After the release in 1990 of the 10th (or Advanced) edition of the Medical Priority Dispatch System (MPDS), I donated to the Academy, as a gift, the MPDS patents and copyrights and the rights to maintain and improve the MPDS protocols under a prescribed scientific methodology. It was felt by many, and I agreed, that a single physician should not be solely responsible for making decisions regarding the evolving science of emergency medical dispatch.

To address the scientific issues related to emergency medical dispatch and to be the official “stewards of the MPDS protocols,” the NAEMD established the College of Fellows, consisting of internationally recognized experts in EMS, EMD, and public safety telecommunications. The College of Fellows’ express purpose and mission statement is as follows: “To conduct an on-going review of the current standards of care and practice in Emergency Medical Dispatch and evaluate the tools and mechanisms used to meet or exceed those standards.”

The initial members of the College are currently serving a voluntary 5-year term. Just as the American Heart Association sets the standards of CPR, BLS and ACLS, the NAEMD’s College of Fellows maintains the standards and integrity of the Advanced Medical Priority Dispatch System, the NAEMD certification curriculum, and all aspects of Dispatch Life Support (DLS).

The MPDS protocols, with telephone instructions for CPR, airway obstruction relief, and childhood assistance have afforded NAEMD-certified dispatchers the opportunity to help hundreds of thousands of people in their moment of crisis. It is essential that they be maintained in a state-of-the-art condition. EMDs have been recognized as an important link in what the American Heart Association has termed the “Chain of Survival.”

What started out as a “shaky idea” in Salt Lake City has withstood the test of time and scrutiny. It is my goal as President of the Academy, that the science of EMD, through the efforts of the Academy and its membership, be maintained at the cutting-edge of effective and efficient pre-hospital patient care.

A College of Fellows
by Robert L. Martin
from Summer 92 (Vol. 3, No. 2)

The NAEMD is comprised of Nationally Certified EMD’s, and medical control and administrative personnel. The College of Fellows is the standard-setting body of the NAEMD, working closely with the Board of Directors. The College of Fellows’ purpose & Mission Statement is:

“To conduct an on-going review of the current standards of care and practice in Emergency Medical Dispatch and evaluate the tools and mechanisms used to meet or exceed those standards.”

The College of Fellows is a unified international scientific body of experts and maintains the integrity and credibility of the Advanced MPDS protocols. This is done through a pre-established process of reviewing and, where appropriate, approving proposed modifications and improvements to the protocols. Without such a process, an insightful (continued on page 2)
College of Fellows, cont.

user cannot possibly share findings with every other dispatch center in the world, nor is there any to validate local findings or ideas. After approval of a modification to the protocols, a new protocol card or computer disk will be sent to all licensed users.

Just as the American Heart Association controls the standards of CPR, BLS, & ACLS, The NAEMD’s College of Fellows maintains the standards and integrity of the Advanced MPDS protocols and curriculum, as well as all aspects of Dispatch Life Support. Through application and adherence to the scientific method of review and voting by the College, the protocol remains unified and standard and not subject to arbitrary, anecdotal modifications that are not medically nor legally supportable.

The built-in Determinant coding system with its 227 sub-determinant codes, allows comparative study and science across jurisdictions, boundaries, and borders. Changes or modifications to the printed or computerized protocols not authorized by the NAEMD are expressly prohibited under the license agreement and copyrights. Note that the actual Responses based on the codes, however, are always locally developed and implemented by the user agency.

Through the College of Fellows (see the above Organizational Chart), the Advanced MPDS will be properly maintained and its accuracy assured for the important dual purposes of:

1. improving patient care, and
2. maximizing the efficiency of EMS systems.

CPR, BLS, ACLS, PALS, and other lesser known but important standards. This large group meets in general sessions during which there are presentations by panels of experts in various areas of current interest. Each panel has had preparatory "preliminary fact finding sessions" to hone the issues and focus on consensus, where possible, on myriad issues and controversies in ECC. I was honored to be a member of the "Citizen Response to Cardiac Arrest" panel. One particular area of interest was in the "emerging" role of the medical dispatcher within the "Chain of Survival's" first link—Early Access.

"Less than 5% of American dispatch centers provide PALS from scripted, medically approved protocols after formal, standardized training in Emergency Medical Dispatching"

In the past, the key performer in this link was widely viewed as the citizen or lay person. All attention was focused on reaching, stimulating, and training the citizen/lay person to act correctly in the face of a nearby emergency. In 1991, one of the key members of the ECC Committee recommended to the chairman of what was to be my panel, that significant input might be elicited from the public safety dispatch community regarding the new concept of "Phone first, Phone fast." Doing one minute of CPR on an apparent cardiac arrest victim prior to activating the EMS system has been the standard for some years.

Through discussions with panel members, interest in the role of the trained Emergency Medical Dispatcher was initiated officially at the AHA. It made sense to them that, regardless of the citizen’s training status, their skill retention, or even their fear, the EMD could be the professional "constant" by teaming with the caller to aid the victim. While this realization by such an important organization as the AHA is quite late in coming (from a historical perspective) it is happening at a very opportune time, for quite different reasons from those which might seem obvious.

National Recognition for EMDs

by Jeff J. Clawson, M.D.
from Summer 92 (Vol. 3, No. 2)

I recently returned from three fascinating days at the American Heart Association’s Emergency Cardiac Care (ECC) Standards Revision Meeting in Dallas, Texas. I want to share my experience and some exciting new information about the meeting. In the long run it is certain to effect the world of emergency medical dispatching.

Approximately every five years, the Emergency Cardiac Care Committee, meets to consider, debate, explore, and recommend directions for research and improvement of the"One particular area of interest was in the ‘emerging’ role of the medical dispatcher within the Chain of Survival’s first link—Early Access”
National Recognition, cont.

In order for the AHA to rely on the medical dispatcher to “be there” for the “phone first” caller (when the callers go to the phone significantly earlier in the arrest crisis) the experts wisely asked if the EMS “infrastructure,” as they put it, was in place and ready to function for anyone calling 911 or another emergency number.

As much as I would have liked to have given them a big grin and a thumbs up, I had to sigh and report that from what we know about the EMS “infrastructure” in America at present, less than 20% of dispatch centers offer any form or sort of telephone aid. What is even more sobering is that less than 5% of American dispatch centers provide PAIs from scripted, medically approved protocols after formal, standardized training in Emergency Medical Dispatching. “Who ya gonna’ call?” if you discover an unresponsive person in collapse, unfortunately, is still dispatchers who have no emergency medical training (as opposed to certified EMDs) in the vast training and protocol wasteland of public safety answering points worldwide.

The good news is that it appears the AHA’s ECC will strongly and officially support not only the presence of a universal 911 number, but the formal training of EMDs and their use of medical protocols, including medically approved scripts for airway control, approved pre-arrival instructions given by trained dispatchers are not only safe to give but in many instances are a moral necessity,” such long-needed allied medical support will clearly place the most influential medical specialty group in history, squarely behind the thirteen year medical dispatch “movement”. The AHA will have not only validated the medically trained dispatcher’s role in the Chain of Survival, but will have strongly locked in the now unstoppable process of making the trained EMD a universally found “first” first responder.

I think the point was successfully made that training dispatchers in CPR is not enough. That practice provides only the “illusion of pre-arrival instructions” for cardiac arrest victims. The accurate, consistent, verified-as-medically-necessary certified EMD “invasive” procedures, such as CPR and foreign body obstruction relief thrusts, are what must be routinely provided where possible and appropriate by trained and certified EMDs.

The nation-wide publicity dispatchers have been given on Rescue 911 is a positive first step. The public’s developing perception of the dispatcher as an EMS professional has had both good and bad side effects. First, it has created a hero image of dispatchers which is a far cry from the “clerk” mentality held by so many citizens and even dispatch employees. However, this new “hero” status has, in another way, created a new monster. As one dispatcher put it, it is now “cool to save choking babies.” The public, and many medical dispatchers themselves, see the unguided, ad lib provision of CPR from a dispatcher who has been “certified in CPR” as completely adequate. Nothing could be further from the truth. Quality assurance-based studies have shown that dispatchers not following scripted protocols will omit over 50% of the verification and treatment steps in a given PAI procedure. If a doctor was that inefficient, it is not likely that his patients would return for more inconsistent and fragmented care—if they survived. If you don’t believe this, try to tell someone, over the phone, how to tie their shoes—something everybody knows how to do themselves. Non-visual instruction and doing it promptly (even when no crisis is present) is nearly impossible off the top of one’s head—and so it is for important pre-arrival instructions.

In addition, TV has given the public the widespread expectation that the EMD will “tell them what to do” until the paramedics or ambulance arrives. Recent nationally aired cases of mothers holding dying babies while pleading with dispatchers for help (specifically CPR) was not lost on the viewing public. Their developing expectation is for modern emergency medical dispatch, while the current reality throughout most of the nation, from a medical dispatch perspective is “pre-historic.”

James O. Page, in his famous “letter to Aurora” of 1981, has become an EMS “prophet” when he wrote, “While we worry about our dispatcher’s anxiety about providing telephone instructions to callers, we might well see the day when public safety agencies face allegations of negligence for not providing such a service. In light of the fact that these programs constitute mainly an organizational, management, and training issue, rather than a funding/taxation issue, I believe the case for negligence (duty) becomes even stronger.”

Enter the AHA. All public safety agencies providing medical dispatch services must realize that they are about to enter a new epoch of expectation based on evolving standards of duty, practice, and care in medical dispatching. The AHA has just jump-started the process to fix this “weak link” in the infrastructure of prehospital care, and it may just be the single most important “defibrillation” in their history.

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"The EMD could be the professional 'constant' by teaming with the caller to aid the victim"

foreign body airway obstruction, and cardiac arrest treatment by telephone. In addition, they appear to be on the brink of endorsing two medical dispatch "national standard" documents: The National Association of EMS Physicians' "Position Paper" on EMED and ASTM's F 1258-90 "Standard Practice for EMD". By quoting that, "Pre-arrival instructions are a mandatory function of every medical dispatcher in a medical dispatch center" and "Standard, medically

"The American Heart Association has just jump-started the process to fix this 'weak link'... and it may just be the single most important 'defibrillation' in their history"
Recent EMD Research
by Chris K. Bigelow
from Winter 92-93 (Vol. 3, No. 3)

The EMS journal Prehospital and Disaster Medicine recently published two formal studies that assess the current effectiveness of Emergency Medical Dispatching. One study reviews the accuracy and cost effectiveness of telephone triage by dispatchers, and the other calculates the cost-effectiveness of providing dispatcher CPR instruction over the phone.

Focusing on the Long Beach, CA EMS System, the first study evaluates “the ability of medically trained and controlled emergency medical dispatchers to use telephone triage techniques to direct the appropriate prehospital unit to an emergency scene.” The study finds that the key to “acceptable accuracy” is a multi-tiered priority dispatch system that allows rapid telephone assessment. Prior to this study, Long Beach was using a simple two-option dispatch response system that either sent full ALS responses or referred non-emergency cases to non-EMS resources. Prior to this study, the operation received training in the Advanced Medical Priority Dispatch System, and following the guidelines in Dr. Clawson’s EMD Training Program, their response categories were customized to correspond with four levels: ALS/BLS Immediate, Nearest BLS Rapid, Next Available BLS, & Routine Ambulance.

Of the 1,045 calls evaluated, the study found that 74.4% were sorted as needing ALS units on scene when only 65.3% actually needed them, resulting in a 9.1% over-triage rate. Conversely, the study found that 3.4% of the runs that dispatchers sorted into the non-ALS response groups actually required ALS intervention, a small percentage which reflects such unusual circumstances as intoxicated, non-English-speaking or misinformed callers. For example, one caller reported abdominal pain all day, which led to a non-urgent response, but when crews arrived they found a woman pregnant and in labor. To minimize under-triage, the Long Beach dispatchers were trained to dispatch at the higher tier of response when in doubt, hence erring in the direction of patient safety.

The clinical question asked by this study is “Does the level of response that the dispatcher decide to send on an EMS call correlate with the level of response judged necessary by the EMS personnel who actually arrived to care for the patient?” Upon examination, the study concludes by saying that “emergency medical dispatchers, medically controlled and trained in a nationally recognized dispatcher triage system, were able to provide medical triage to incoming emergency medical 9-1-1 calls with minimal error for under-triage of ALS runs and high selectivity for non-emergency situations.”

In evaluating the cost-effectiveness of such a system, the study estimated that an average ALS “lights-and-siren” response costs the City approximately $145 more than a routine BLS response. Long Beach responded to 32,669 EMS calls during the year in which the study was conducted and considering results of this study, “18% of these runs could have been managed by BLS units only, could have saved the system approximately $853,000 annually.” Furthermore, these BLS responses did not require a lights-and-siren response which would provide safer delivery of EMS services. (Prehospital and Disaster Medicine, July-Sept. 1992, Vol. 7, No. 3, pp. 263-269)

This retrospective study considers the cost-effectiveness of dispatcher CPR instruction via telephone to bystanders as opposed to prehospital EMT/Paramedic treatment alone, keeping in mind that the time lapse between the initial collapse of a patient and the commencement of CPR is what’s crucial to the patient’s survival. A total of 118 adult patients in Tucson, Arizona with out-of-hospital, witnessed ventricular fibrillation were studied using hospital records, monitor-defibrillator recordings, paramedic reports, dispatching records and telephone interviews with bystanders.

Of the 53 patients who received bystander CPR, 14 survived to hospital discharge (26%) versus only 4 out of 65 (6%) for patients lacking bystander CPR. The time factor is the key element in this difference: patients receiving bystander CPR could be treated to 1.8 minutes after collapse on average, versus 7.1 minutes for patients without bystander CPR. Had all patients in the study received bystander CPR and survived at the above-stated 26% rate, 13 additional patients may have lived to hospital discharge.

The study says that to minimize time lapse, bystanders of ventricular fibrillation cases need either to have previously learned CPR or to be immediately instructed on-site in its use. For this study in Tucson, it was decided to estimate the cost-effectiveness of dispatcher CPR instruction and the authors found that such instruction “has the potential to reduce the cost per year of life saved by 40%.” They also mention that the amount of money required...is small relative to the budgets of fire departments in mid-sized cities such as Tucson, Arizona.

This study concludes that implementing and operating a program of dispatcher telephone CPR instruction is more effective and less costly and time-consuming than community-wide programs to teach CPR techniques to an unselected lay population. Tucson’s theoretical cost of operating a program of dispatcher telephone CPR instruction was calculated to be $176,499. If the study’s proposed 13 additional lives had been saved at the 26% bystander CPR rate, the cost per year-of-life saved would have been reduced from $4,881 (cost per year-of-life saved with Tucson’s EMS-only system) to $2,834. The cost per projected additional year-of-life saved by dispatcher telephone CPR instruction would have been $560. This quantitatively indicates that “CPR instruction via telephone to individuals reporting witnessed cardiac arrests would be an extremely cost-effective addition.” (Prehospital and Disaster Medicine, July-Sept. 1992, Vol. 7, No. 3, pp. 229-234)