THE HISTORY AND FUTURE OF EMERGENCY MEDICINE

Television programs such as *911, ER and Chicago Hope* have portrayed, if not romanticized, certain facets of the field of emergency medicine to the American public. At the same time, various healthcare reformers, emphasizing cost efficiency, have vilified the emergency department as being a sinkhole for healthcare dollars.[1] These divergent perceptions demonstrate the considerable misunderstanding of the field, both from inside and outside the house of medicine. It may be valuable, then, to study the past, appraise the current status and contemplate the major clinical and academic issues that face the specialty.

Evolution

The tenure of emergency medicine in the United States is relatively brief. The *raison d'être* for emergency medicine in this country became manifest in the post-World War II era. Epidemiologic and healthcare forces, ultimately economic, were responsible. The baby boom era greatly increased the population and led to urban sprawl. Ventures by physicians away from active office practices to care for patients in the home were increasingly burdensome and fiscally improvident. House calls became an anachronism. Primary care clinicians burdened by busy office practices began to triage patients from their home or away from the office directly to the hospital for care. Coincidentally, federal and third party insurers began to support hospital-based services far more heavily than those provided at home or in the office. Finally, the

proportion of specialists was on the rise. While specialty certification commenced with the Board of Ophthalmology and then the Board of Surgery prior to World War II, the concept of specialty certification was truly embraced after this conflict when specialization began to be thought of as a necessary aspect of training. It was this combination of vanishing house calls, an increasing census of indigent patients, a greater accent on specialty training, obstructed access to primary care, and economic support for hospital-based services that compelled patients to flock to hospitals for their care.

Hospitals themselves were beginning to transform into centers where actual life-sustaining care could be provided. The promise of coronary care units was developed by Pantridge in Ireland in 1969 and soon thereafter in this country.[2] Increasingly sophisticated diagnostic equipment, such as the CT scan and cardiac monitoring, enabled the process of emergency intervention. In addition, the experience in Korea and Vietnam insinuated the promise of prehospital care and enhanced trauma management in this country's hospital systems.[3]

Unfortunately, prehospital and emergency care were virtually nonexistent. "Emergency rooms" were poorly equipped, inadequately staffed and largely unsupervised. These were commonly a single room with one nurse and often an on-call physician distant from the site. Meanwhile, the number of patients seen in emergency departments increased 367% from 1955 to 1971.[4] In teaching hospitals, emergency care was left to

junior house officers and even the unsupervised intern. Faculty supervision was virtually nonexistent. In nonteaching hospitals, this care was delegated often to disaffected members of the medical staff, irrespective of discipline, level of training or experience. Foreign medical graduates, impaired physicians, and those disenchanted with their own practice were those often left to assume this responsibility. Largely, these individuals were those without experience or those who could not find work elsewhere in the medical care system. Understandably, physicians and hospitals struggled to find improved methods of staffing the emergency department.

In 1961 four physicians in Alexandria, Virginia, voluntarily left their office practices and formed the first full-time group devoted exclusively to providing medical care in an emergency department. This staffing concept, initiated by James D. Mills, Jr., MD, became known as the “Alexandria Plan.” Two similar designs were established early in that decade by other physicians in Pontiac and Flint, Michigan. The next requisite step was the establishment of the core of knowledge necessary to practice in an emergency department and a system by which to acquire it.

The American College of Emergency Physicians (ACEP) began as a convocation of eight emergency physicians in August 1968 beginning the process of education and communication among emergency physicians. The first emergency medicine residency program was established at the University of Cincinnati in 1970. By 1975, there were 23 approved residencies with 100 residents and two academic departments of

emergency medicine. That year the American Medical Association's House of Delegates approved a permanent section on emergency medicine and accepted standards for emergency medicine residencies. In 1979, the American Board of Medical Specialties (ABMS) voted to approve the American Board of Emergency Medicine as a conjoined modified board and asked that emergency medicine be included in the membership of ABMS. Thus, emergency medicine became the 23rd official medical specialty. Certification examinations began the following year. In 1982, special requirements for emergency medicine residency training programs were approved by the Accreditation Council for Graduate Medical Education, and in 1989, primary board status was granted by the ABMS. Since 1992, three subspecialties have been developed within emergency medicine: pediatric emergency medicine, medical toxicology and sports medicine.

Milestones in emergency medicine as a clinical specialty and academic discipline became more frequent in the late 1960s. In 1966 the National Academy of Sciences published an influential report entitled "Accidental Death and Disability: The Neglected Disease of Modern Society."[5] This led to the Highway Safety Act which required states to develop regional emergency medical service systems. In 1968, AT&T enabled phone companies to offer communities 911 service. In 1971, the EMS Commission published "Categorization of Hospital Emergency Capabilities"[6] to assist hospitals in measuring their capacity to provide effective emergency care. With the passage of the Emergency Medical Services Act of 1973, funding for comprehensive regional

emergency care systems became available.

In the 1980s, emergency medicine became one of the fastest growing specialties and emergency departments, especially in urban settings, began to be overcrowded with indigent patients. In 1981, the assassination attempt on President Reagan thrust emergency medicine into the spotlight. In 1985 the National Research Council published "Injury in America: A Continuing Public Health Problem."[7] This document magnified the need for integrated prehospital, emergency and inhospital trauma care. In 1986, the Consolidated Omnibus Budget Reconciliation Act was passed by Congress. This legislation, better known by its acronym COBRA contained the Emergency Medical Treatment and Labor Act (EMTALA). In essence, this "anti-dumping" statute required that all patients who present to emergency departments receive an emergency medical screening examination and stabilizing care where necessary without regard to payer status. Thanks to this and its revised edition that is in force today, emergency medicine has become the safety net for the disenfranchised segment of our population. To paraphrase William F. Buckley , it establishes the emergency department as the single point of universal access to healthcare in America.

STATE OF THE SPECIALTY

The annual number of emergency department visits in this country has increased virtually without interruption since the 1950s. A small retreat took place in 1995, but numbers rose again this past year to an annual census of just under 100 million patients. A significant minority of these patients are among the more than 41 million uninsured in the United States, and there is an increasing trend toward usage of the ED by the uninsured, underinsured, children and the elderly.

It is estimated that there are approximately 5,000 emergency departments in the U.S., and 25,000 physicians practicing within them. Currently, more than 2700 physicians are being trained in the 118 accredited residency programs, and each year these graduate approximately 800 physicians who are eligible to become certified as emergency medicine specialists.[8] Emergency medicine has been and remains one of the most competitive specialties for medical student applicants for more than a decade. ACEP, which began with eight physicians in 1968 now boasts nearly 20,000 members within its rank. In addition, there are more than 4,000 members of emergency medicine's academic organization, the Society for Academic Emergency Medicine (SAEM). Within the nation's academic medical centers, there are now 50 departments of emergency medicine, in addition to more than 20 divisions and sections. Four established peer-review journals highlight research in the field and are among a multitude of textbooks, journals and other publications.

THE FUTURE: THREATS AND OPPORTUNITIES

The dynamism within the clinical and academic arms of every specialty is perhaps more intense than ever before. This has been engendered by pressures from managed care, rapidly advancing technology in diagnostics and communications, the specialist to generalist shift, massive reconfigurations and amalgamations of hospitals and academic systems, and, of course, the shrinking healthcare dollar.

Economic

Early in this decade, with the prospect of Clinton healthcare reform and the advent of managed care, emergency departments were cited by some as the locale of unnecessary expense. This may have found its origin in the process of cost accounting and cost shifting that began with Medicare and Blue Cross overhead matrices in the 1960s and 1970s and which led to the popular misconception that emergency departments have been high *cost* when, in fact, they are high *charge*.[9] Today, these charges are, in large part, to assure 24-hour availability of necessary staffing and equipment and, in small degree, to the practice of cost shifting.

In reality, emergency departments account for less than 2% of the healthcare costs in the United States. And, while a considerable portion of care sought in the nation's EDs

is determined to be urgent rather than emergent, Williams et al demonstrated that the average cost of such ED visits is comparable to that in private physician offices.[10] Recent evidence indicates that the ED is not overused and cost shifting from the uninsured is minimal as these patients represent only 12% of ED costs and 8% of ED admissions while paying for 47% of such costs themselves.[11] Indeed, restricting ED use could disproportionately burden minorities and the poor who are those most reliant on the ED for care. Furthermore, the process of creating and managing clinics at off-hours can be more costly than reliance upon the emergency department for such care. This contention is advanced by Uwe Reinhardt, James Madison Professor of Political Economy and Professor of Economics and Public Affairs at Princeton, who states, "Nonemergency utilization of the emergency department requires the same resources that would be utilized in an office setting. The incremental societal costs of using the emergency department for primary care is actually cheaper than the incremental cost of building a new clinic facility to render care to these patients who were being turned away from the emergency department."[12]

Retrospective denials of patients' emergency claims by managed care companies and other insurers have led to so called "prudent layperson" legislation in several states and ongoing consideration at the federal level. Such legislation protects patients from being denied payment for the assessment of illness or injury which a reasonable (prudent) person believes may lead to severe or permanent morbidity if not attended to immediately, irrespective of what the diagnosis ultimately proves to be. Similarly, laws

are being enacted to ensure coverage of medical screening examinations and stabilization measures. These consumer protection laws are aimed largely at managed care operatives and stress the importance of communication and flexibility among emergency physicians, patients and insurers.

Clinical and Academic

Workforce needs are receiving careful attention. In 1994, the Josiah Macy, Jr., Foundation, a highly regarded private philanthropy dedicated to improving the health of individuals and the public, convened a gathering of leaders from government, public health, healthcare advocacy groups and other medical specialties, in addition to leaders from emergency medicine.[13] Among the major conference derivatives was the recommendation, "Access to high quality emergency medical care should be available for all persons who need such care." This was advanced in response to the fact that the specialty has not yet had sufficient tenure to supply residency trained board-certified physicians for more than half of the country's available positions. In 1979 when the certification process in emergency medicine began, ABEM chose not to "grandfather" existing practitioners and in 1988, it closed access to board certification by its practice tract category. Thus, a second recommendation issued by the Macy Foundation was "The number of residency positions in emergency medicine should not be reduced as plannning for healthcare reform proceeds." However, fears of the physician oversupply that now exists in other specialties has stirred fear in some in emergency medicine. In response, two long range workforce projection studies are in

progress.

A third initiative of the Macy Foundation is perhaps the most contentious. "Emergency departments should be classified in a manner to reflect the level of care available for emergency patients and indicate whether or not the facilities are adequate and whether appropriately qualified and credentialed emergency physicians are available 24 hours a day." A task force of the Society for Academic Emergency Medicine is proposing a mechanism of categorization which will initially be restricted to hospitals with the highest level of care competency. Because even this first step in a categorization process is likely to engender dispute, collaboration will be sought with other major medical groups such as ACEP and the JCAHO. The intent to provide this type of information to the patient is both laudable and entirely consistent with consumer advocacy in other areas.[14]

Various economic influences have tilted the balance from the inpatient to the outpatient setting. As a result, there is increasing emphasis upon the utilization of observation units, including chest pain evaluation centers. It is likely that mid-level providers will be more heavily utilized in emergency departments in the future.[15] In addition, EMS systems are being asked to provide an increasing breadth and depth of care. Use of telemedicine and cellular transmission technology allows the extension of the emergency physician from the emergency department to the field. This could permit more effective triage of patients to appropriate hospitals, more rapid implementation of

key diagnostic and therapeutic options and the entirety of patient care to be provided at the home of a patient. Preventive care, injury control programs and intervention in domestic violence and substance and alcohol abuse are meaningful societal missions in today's and tomorrow's EDs, which should prove to be cost-effective strategies as well.[16]

Conclusion

In a presentation to the AAMC on May 4, 1993, emergency medicine was defined as that specialty which " encompasses the immediate decision making and action necessary to prevent death or any further disability for patients in health crises. Emergency medicine is practiced as a patient-demanded and continuously accessible care. It is the time-dependent process of initial recognition, stabilization, evaluation, treatment and disposition. The patient population is unrestricted and presents with a full spectrum of episodic, undifferentiated physical and behavioral conditions."

Emergency medicine indeed has a unique biology with an attendant knowledge base and requisite skills prescribed through formalized education, training and certification.[17] Perhaps its purpose is made most poignantly clear by considering that the entryway into the medical system for life threatening injury and illness, as well as many other unscheduled needs, is through the emergency department, a portal of universal access.

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