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# The Rise of Emergency Medicine in the Sixties: Paving a New Entrance to the House of Medicine

Anne Merritt

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The Rise of Emergency Medicine in the Sixties:  
Paving a New Entrance to the House of Medicine

A Thesis Submitted to the  
Yale University School of Medicine  
in Partial Fulfillment of the Requirements for the  
Degree of Doctor of Medicine

by

Anne K. Merritt

2009



In memory of Mila, dear friend, for her inspiration

Mila Rainof, M.D.  
Yale School of Medicine 2008  
1980 – 2008

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## Abbreviations

ABEM	American Board of Emergency Medicine
ABMS	American Board of Medical Specialties
ACEP	American College of Emergency Physicians
ACS	American College of Surgeons
AHA	American Hospital Association
AMA	American Medical Association
ASA	American Society of Anesthesiologists
ATLS	Advanced Trauma Life Support
CCU	Cardiac care unit
CPR	Cardiopulmonary resuscitation
ED	Emergency department
EMS	Emergency medical services
EMT	Emergency medical technician
ER	Emergency room
ERC	Emergency Room Committee
GNP	Gross National Product
GP	General practitioner
HEW	United States Department of Health, Education, and Welfare
HMO	Health Maintenance Organization
MASH	Mobile Army Surgical Hospital
MRO	Medical regulating officer
MUST	Medical Unit Self-Contained, Transportable
SAEM	The Society for Academic Emergency Medicine
YNHH	Yale-New Haven Hospital

## **Abstract**

THE RISE OF EMERGENCY MEDICINE IN THE SIXTIES: PAVING A NEW ENTRANCE TO THE HOUSE OF MEDICINE. Anne K. Merritt (Sponsored by John H. Warner). Section of the History of Medicine, Yale University, School of Medicine, New Haven, CT.

This thesis investigates how emergency medicine evolved in the United States in the 1960s. Three case studies, Alexandria Hospital, Hartford Hospital, and Yale-New Haven Hospital, demonstrate the changes in emergency medicine at a small community hospital, a mid-sized teaching hospital, and an urban academic institution, respectively. The government, the media, the American public, and the medical community brought emergency medical care to the forefront of national attention in the sixties. In an era of population migration to suburbs, the rise of group practices, and medical specialization, patients' relationships with their general practitioners dissolved. Emergency visits increased astronomically because patients started to use the emergency room for non-urgent health problems. Simultaneously, physicians and house staff resisted working in the emergency room. In response to rising patient loads, mounting criticism of emergency services, and staffing problems, hospital administrators devised strategies to improve the quality and efficiency of emergency care. The rise of emergency medicine in the sixties was a result of (1) advances in pre-hospital, trauma, and coronary care which distinguished a new clinical field and (2) the emergence of full-time emergency physicians at community hospitals. Urban teaching hospitals, which established triage systems and ambulatory care facilities in order to improve emergency services, resisted the idea of emergency medicine and ultimately delayed its development as a specialty.

## Timeline of Events

YEAR	EVENT
1954	Dr. Robert H. Kennedy declares that the emergency room is the “weakest link” in the chain of hospital care.
1958	The Educational Commission for Foreign Medical Graduates institutes an examination for foreign physicians.  Residents take the first step towards unionization by establishing the Committee of Interns and Residents in New York City.
1960	The John A. Hartford Foundation makes a three-year grant to the ACS to improve emergency medical care.  The Federal Employees Health Benefits Program provides health insurance for federal employees.
1961	Dr. Mills develops the Alexandria Plan, a method of staffing the emergency room with full-time physicians.  Dr. R. Adams Cowley starts the Clinical Shock Trauma Research Unit at the University of Maryland.
1963	The American College of Surgeons (ACS) publishes national standards for emergency departments.  The John A. Hartford Foundation grant is renewed for three years, in order to further develop pre-hospital care.  Yale-New Haven Hospital institutes a triage system in the emergency department.
1965	Medicare and Medicaid are passed.  The ACS favorably reviews the emergency services at Hartford Hospital.

<b>YEAR</b>	<b>EVENT</b>
1966	<p>The American Medical Association (AMA) publishes <i>Emergency Department: A Handbook for Medical Staff</i>, which includes a description of the Alexandria Plan.</p> <p>Comprehensive Planning Legislation supports the development of neighborhood health centers.</p> <p>The National Academy of Sciences-National Research Council Committee on Trauma publishes <i>Accidental Death and Disability: The Neglected Disease of Modern Society</i>.</p> <p>The Federal Highway Safety Act provides funds for emergency health services.</p>
1967	<p>Senator Edward Kennedy sponsors an amendment to provide funds for comprehensive community health services.</p>
1968	<p>The American Society of Anesthesiologists recommends that a physician should be assigned to the emergency department at all times.</p> <p>Attending physicians staff the Hartford Hospital emergency room on a part-time basis.</p> <p>Yale-New Haven Hospital trains ambulance personnel and runs a citywide disaster drill. The Hill Health Center is established.</p> <p>Harvard Medical School develops a post-graduate course for full-time emergency physicians.</p>
1979	<p>The AMA Council on Medical Education and the American Board of Medical Specialties (ABMS) approves emergency medicine as the 23<sup>rd</sup> medical specialty, through recognition of the American Board of Emergency Medicine (ABEM) as a conjoint board.</p>
1989	<p>The ABMS approves the ABEM as a full primary board.</p>

# 1

## Introduction

This thesis investigates the evolution of emergency medicine in the United States. Emergency medicine moved to the forefront of the health care system and evolved into a new specialty in the 1960s. Before 1960, nurses and residents typically managed emergency rooms and sought physicians' assistance as they saw fit. The public relied on general practitioners for most of their medical care and used emergency rooms only for urgent surgical problems. Several forces brought emergency medical care to the forefront of national attention in the sixties: the government, the media, the American public, and physician leaders. These forces criticized hospital emergency services and articulated strategies improve the quality of emergency medical care. Due to population migration to suburbs, the rise of group practices, and increasing medical specialization, the strong, long-established relationships between patients and general practitioners dissolved. In this new environment, Americans started relying more heavily on hospital emergency services. As patients streamed into emergency rooms, the diversity and magnitude of illnesses there mushroomed. Simultaneously, house staff and physicians started to resist working in the emergency room. Pressured by mounting criticism, rising patient loads, and staffing problems, hospital administrators devised approaches to improve emergency services. Many community hospitals hired full-time physicians to staff their emergency rooms. These new physician leaders emerged at an opportune time when advancements in pre-hospital, trauma, and coronary care were strengthening the clinical foundations of emergency medicine. This combination of factors ultimately facilitated the development of a new specialty.

In my thesis I examine the following questions. Why did the function of the emergency room change in the 1960s? How did social, political, and economic factors facilitate this change? How did the government, the media, the American public, and the medical community motivate this change? The first full-time emergency physicians appeared in small community hospitals. Why did these physicians emerge in the sixties? To what local needs were they responding? How did the broader changes in society contribute to local changes in emergency room management? How did the first emergency physicians influence the development of emergency medicine as a specialty?

Administrators at urban teaching hospitals devised different approaches to improve emergency services. Rather than hiring full-time emergency physicians, they continued to use house staff to run their emergency departments. They accommodated rising patient loads by instituting triage systems and expanding outpatient facilities. Why did full-time emergency physicians first practice in small community hospitals rather than urban teaching hospitals? Why did academic hospitals resist the idea of full-time emergency physicians? Why did emergency medicine gain recognition as a specialty two decades after the appearance of full-time emergency physicians?

The first chapter examines the transformation of the emergency room into a community medical center. Several factors facilitated this transformation. A climate of economic prosperity and social activism provided an ideal opportunity for emergency medical care to surface at the forefront of national attention. Several major forces in American society – the government, the medical community, the media, and the American public – demonstrated a growing interest in criticizing and improving access to and the quality of emergency services. Simultaneously, patients' relationships with their private physicians dissolved for two reasons: people migrated from cities to suburbs and private physicians became less available due to the rise of group practices

and medical specialization. As a result of these changes, patients increasingly turned to the emergency room for urgent and non-urgent medical care.

The second chapter examines military advancements that spurred the development of pre-hospital, trauma, and coronary care in the US. These developments established emergency medicine as a distinct clinical field and defined a new role of the emergency room as a critical intermediary in the chain of urgent medical services. The third chapter discusses the reorganization of hospital emergency services. Pressured by rising criticism, ever-increasing patient loads, and staffing difficulties, hospital administrators devised approaches to improve emergency services. Community hospitals created a new occupational niche by hiring full-time emergency physicians, while academic hospitals devised alternative approaches to the problem. The three case studies further examine the reorganization of emergency services at the local level in academic and community hospitals.

The fourth chapter examines the development of emergency medicine at Alexandria Hospital, a small community hospital in Alexandria, Virginia. In 1961 this hospital was the first in the country to experiment with a new staffing method: it hired four full-time emergency medicine physicians to run the emergency room. Alexandria Hospital's approach to emergency care gained national popularity. Over the course of the decade, full-time emergency physicians established a broad base of professional support and ultimately organized at a national level in order to fight for specialty recognition.

The fifth chapter examines how urban teaching hospitals resisted the development of emergency medicine. Hartford and Yale-New Haven hospitals did not hire full-time emergency physicians in the sixties. Instead, they viewed these leadership changes with skepticism and attempted to reduce the patient load by establishing triage

systems and outpatient facilities. Emergency physicians' struggle to gain acceptance in teaching hospitals ultimately delayed the development of emergency medicine as a specialty.

These three case studies demonstrate that the evolution of emergency medicine began in small community hospitals that established the role of the emergency physician long before an actual medical specialty existed. Urban teaching hospitals devised alternative approaches to manage the patient overload and strongly resisted emergency medicine. In later years the emergency department staffing method first used at small community hospitals became a national standard for all teaching hospitals in the United States. The evolution of emergency medicine eventually led its formal recognition as the 23<sup>rd</sup> medical specialty in 1979.

## 2

### Methods

This thesis uses a detailed analysis of three case studies to determine how emergency medicine evolved in the 1960s. I chose to examine three hospitals in the eastern United States: Alexandria Hospital in Alexandria, Virginia; Hartford Hospital in Hartford, Connecticut; and Yale-New Haven Hospital in New Haven, Connecticut. Their historical significance with regard to emergency medicine and their differences in location, size, patient population, and academic affiliation make them informative case studies. Many findings from these case studies apply to other regions of the United States, but there are some limitations. First, East Coast cities lagged behind the rest of the country in the development of pre-hospital care. In the late sixties and early seventies, pre-hospital systems started to develop in the states of Illinois and Maryland and the cities of Seattle, Miami, Los Angeles, Portland, and Columbus, Ohio.<sup>1</sup> Secondly, academic institutions in the eastern United States were slower to recognize the field of emergency medicine than other academic institutions.<sup>2</sup>

In the 1960s Alexandria Hospital was a small, non-profit hospital that served a middle-class suburban community and a small portion of indigent patients. It was the first hospital in the country to hire a group of physicians to run its emergency room on a

1. Mickey S. Eisenberg, "The Resuscitation Greats: Leonard Cobb and Medic One," *Resuscitation* 54, no. 1 (July 2002): 5.

2. Yale-New Haven Hospital, like several other academic institutions in the Northeast, delayed establishing an emergency medicine residency program and providing full-time supervision of house staff in the emergency department. Cincinnati General Hospital was the first hospital to establish a residency program in emergency medicine in 1970, followed by The University of Chicago in 1972.

full-time basis. Hartford Hospital was a mid-sized, non-profit urban teaching hospital that primarily served an indigent population. It was a national leader in academic emergency medicine. In 1958 physicians at Hartford Hospital conducted an influential study of the changing nature of emergency services at ninety hospitals in the Midwest and along the East Coast.<sup>3</sup> In 1963 the hospital held a national conference on emergency medicine.<sup>4</sup> Yale-New Haven Hospital was a large, urban academic center that primarily served a poor patient population. It became affiliated with the Yale School of Medicine in 1965. It was one of the few teaching hospitals that staffed its emergency department with senior house staff rather than interns in the sixties.

For each hospital, I identified contemporary articles published in *The New England Journal of Medicine*, *The Journal of Trauma*, *The Journal of the American Hospital Association*, *The Bulletin of the American College of Surgeons*, and local medical journals, as well as in popular publications such as *Time*. For Alexandria Hospital, I analyzed articles published by the practitioners who participated in the Alexandria Plan. For Hartford Hospital, I examined the minutes from emergency room committee meetings, annual hospital reports, and the papers of Dr. Thomas Stewart Hamilton, the Chief Administrative Officer of the hospital from 1954 to 1976. For Yale-New Haven Hospital, I perused the files of Dr. Albert Snoke (the Executive Director of the hospital from 1946 to 1969) and Dr. E. Richard Weirnerman (the Director of Ambulatory Services from 1962

3. Ernest C. Shortliffe, T. Stewart Hamilton, and Edward H. Noroian, "The Emergency Room and the Changing Pattern of Medical Care," *The New England Journal of Medicine* 258, no. 1 (January 2, 1958).

4. The conference included participants from Albany Medical Center, Maine Medical Center, The University of Chicago, Massachusetts General Hospital, Henry Ford Hospital, Columbia University, and several others. See *Hospital Emergency Services: A Report on a Conference at Hartford Hospital* (Hartford, CT: 26-27 April 1963), in Box 17, folder labeled "Emergency Services," Thomas Stewart Hamilton Papers, The Hamilton Archives at Hartford Hospital, Hartford, CT, 4-6.

to 1968) in addition to annual hospital reports from the 1960s. I also gathered oral histories from emergency physicians, surgeons, internists, and nurses who had worked in these hospitals in the 1960s.

I examined the development of emergency services at these three hospitals in the 1960s and included pertinent information about developments in earlier and later years. These case studies highlight the effects of national trends in emergency care at the local level. They illustrate how patients, hospital administrators, house staff, and physicians revolutionized emergency services in their communities, and they provide insight into the evolving function of the emergency room and the reorganization of emergency services across the United States. I also conducted a quantitative analysis of population growth compared to emergency visits for Hartford and Yale-New Haven hospitals.<sup>5</sup> This analysis indicates population growth was greater in suburbs than in cities, but emergency room visits increased substantially faster than the population. These three case studies demonstrate the different approaches that the small community hospital and the urban teaching hospital used to improve emergency services. They reflect the growing acceptance of, and resistance to, full-time emergency physicians across the country. Based on this analysis, the specialty of emergency medicine originated in small community hospitals and eventually gained acceptance at academic institutions.

5. While data existed for Alexandria's population, the census of emergency room visits at Alexandria Hospital in the 1960s was not available.

## 3

## The Emergency Room Becomes a Community Medical Center

The evolution of emergency medical care was primarily a response to public demand. Richard Perloff, an expert in the science of persuasion, argues that three major players contribute to political communication in America: leaders, the media, and the public.<sup>6</sup> Certain factors also encourage national interest in specific issues: the existence of a favorable political climate, the expression of concerns by groups inside and outside the government at the same time, public concern, and the articulation of policies to deal with the problem.<sup>7</sup> All of these factors were aligned for emergency medicine in the sixties. The government, physician leaders, the media, and the public simultaneously criticized and articulated strategies to improve the quality and efficiency of emergency services.

As a result, the emergency room underwent a transformation. The emergency room first existed as an “accident room” used to care for accident victims at the beginning of the century. The 1960s witnessed rising public confidence in the emergency room as the optimal health facility for medical care. The emergency room’s function expanded from treating accident victims to treating patients with a range of non-urgent medical conditions. This newly functioning emergency room became a reliable place

6. Richard M. Perloff, *Political Communication: Politics, Press, and Public in America* (Mahwah, NJ: Lawrence Erlbaum Associates, 1998), 9.

7. Cook and Skogan, “Convergent and divergent voice models of the rise and fall of policy issues,” in David L. Protess, ed., *Agenda Setting: Readings on Media, Public Opinion, and Policymaking* (Hillsdale, NJ: Lawrence Erlbaum Associates, 1991), 189-206, as cited in Perloff, *Political Communication*, 231.

where patients could come for any health problem at any time of day or night. Dr. Albert Snoke (the Executive Director of Yale-New Haven Hospital from 1946 to 1969) recognized that these changes led to a “metamorphosis” of the emergency room, from a place that was considered the “last resort of the mortally ill” to a community health center.<sup>8</sup> This transition, marked by an extraordinary influx of patients, placed the emergency room at the center of the health care system and provided it with a newfound significance in society. Two major factors motivated this transformation: a growing national interest in improving emergency services and the changing nature of the patient-physician relationship.

## **A GROWING NATIONAL INTEREST IN IMPROVING EMERGENCY SERVICES**

In the 1960s an intensifying national interest in emergency services sparked a paradigm shift in Americans’ perception of health care. The government, media, health insurance companies, and physician leaders brought attention to the inadequacies of emergency medical care and articulated strategies to improve the quality and accessibility of emergency services. The two principles that stimulated these changes were (1) medical care was a basic right and (2) the hospital was central to the health care system. As emergency medical care moved to the forefront of national attention, the public became interested in improving emergency services at the local level.

8. Richard E. Weinerman, “Changes in Medical Practice: Implications for Ambulatory Services of Hospitals,” presentation before the New England Hospital Assembly, Boston, 29 March 1965, in Box 2, folder labeled “Ambulatory Services,” Albert Snoke Papers, Yale-New Haven Hospital Records, New Haven, CT, 5-6.

An invigorated, idealistic spirit characterized the Kennedy-Johnson era. The sixties were a decade of social activism marked by the civil rights movement, the women's movement, and the antiwar movement. The economy boomed: it expanded by one-fourth between 1961 and 1965.<sup>9</sup> The standard of living increased, the gross national product (GNP) doubled, and employment rates dropped as low as 4 percent. The Democrats' landslide victory in 1964 and the prosperous economy created an unusual opportunity for the government to increase federal spending and social legislation. After Kennedy's assassination in 1963, Lyndon Johnson took up the cause of economic opportunity and declared an "unconditional war on poverty in America."<sup>10</sup> He launched the Great Society Program, which included initiatives for public welfare, civil rights, mass transit, public housing, federal aid to education, and urban renewal.<sup>11</sup>

The government also worked to improve the quality and accessibility of health care. After World War II the government focused primarily on funding medical research.<sup>12</sup> Between 1940 and 1960, Congress increased the budget of the National Institute of Health from \$180,000 to \$400 million.<sup>13</sup> In the sixties the government's focus shifted from medical research to health care delivery. National health care expenditures increased dramatically from \$12.7 billion to \$71.6 billion, or from 4.5 to 7.3 percent of the

9. Paul Starr, *The Social Transformation of American Medicine: The Rise of a Sovereign Profession and the Making of a Vast Industry* (New York: Basic Books, 1983), 366.

10. *Ibid.*

11. Kenneth Ludmerer, *Time To Heal: American Medical Education from the Turn of the Century to the Era of Managed Care* (New York: Oxford University Press, 1999), 222-23.

12. Rosemary Stevens, *In Sickness and in Wealth: American Hospitals in the Twentieth Century* (New York: Basic Books, 1989), 202.

13. Starr, *The Social Transformation of American Medicine*, 342-47.

GNP, between 1950 and 1970.<sup>14</sup> This new interest in health care delivery occurred at a time when the American public could better afford health care. Furthermore, after the Depression and World War II, there was a shift in health concerns from chronic illness to more urgent medical problems such as heart disease.<sup>15</sup> This new sociopolitical climate set the stage for the rise of emergency medicine.

### **The Hospital Emerges at the Center of the Health Care System**

Growth in the number and size of hospitals across the country increased their visibility and reinforced the perception that the hospital played a central role in medical care. Government legislation also supported hospital expansion. According to sociologist Paul Starr, the “emerging view among liberals in health policy was that federal policy overemphasized hospital construction, while ambulatory care was neglected.”<sup>16</sup> The Hill-Burton Act of 1946 provided funding for hospital renovation and expansion. The \$3.7 billion dispersed under the program funded 30 percent of all hospital projects up to 1971 and provided roughly 10 percent of their annual construction costs.<sup>17</sup> As hospitals expanded they became major employers. Staff in America’s hospitals doubled to one million people between 1946 and 1960 and doubled again by 1972.<sup>18</sup>

Medicare and Medicaid, which passed on 30 July 1965, increased public access to hospital services. Medicare provided guaranteed hospital insurance under Social

14. *Ibid.*, 335.

15. *Ibid.*, 336.

16. *Ibid.*, 364.

17. *Ibid.*, 350.

18. Stevens, *In Sickness and in Wealth*, 231.

Security and established a program of government-subsidized voluntary insurance to cover physicians' bills. Medicaid expanded financial assistance to the states for medical care of the poor. As a result, the rich and middle class saw physicians 20 percent more often than the poor in 1964, but by 1975 the poor saw physicians 18 percent more often than the rich and middle class.<sup>19</sup> Medicaid primarily affected urban hospitals that cared for large indigent populations. The new legislation covered hospital visits and encouraged Americans to rely on the hospital emergency room rather than the private physician's office for medical problems.

Because rising patient loads and huge financial losses ultimately overburdened hospitals, the government later shifted its focus from hospital-based to community-based medical care. Under the Comprehensive Planning Legislation of 1966, the Department of Health, Education, and Welfare (HEW) supported the development of fifty neighborhood health centers. In 1967 Senator Edward M. Kennedy sponsored an amendment to provide funds for comprehensive community health services. Over the next four years the Office of Economic Opportunity contributed to the development of one hundred neighborhood health centers and other comprehensive service projects. The purpose of the community health center was to provide a "one-stop" facility for all ambulatory care. Half of the medical schools in the country participated in developing these centers. As federal funds for these centers dwindled in the early seventies, these medical schools ultimately lost interest in the program.<sup>20</sup> Community health centers provided a valuable resource for larger hospitals by diffusing the patient load in emergency rooms. Because academic hospitals were able to manage their emergency

19. Starr, *The Social Transformation of American Medicine*, 367-70, 373.

20. *Ibid.*, 370-71.

rooms without hiring full-time emergency physicians, the development of emergency medicine as a specialty was delayed.<sup>21</sup>

### **Emergency Medical Care as a Basic Right**

Federal tax authorities and state legislative and judicial systems reinforced the idea that emergency medical care was a basic right. In 1969 federal tax authorities required community general hospitals to establish a 24-hour emergency service, accessible to everyone regardless of ability to pay, in order to maintain tax-exempt status.<sup>22</sup> This regulation encouraged hospitals to open emergency rooms. State legislative and judicial systems enforced the hospital's legal obligation to provide emergency care to the entire community. For example, by 1961 Kentucky's hospital licensing law provided that "no person shall be denied emergency care solely because of race, creed or color."<sup>23</sup> The state of Illinois established a fine for surgical hospitals if they refused to provide emergency medical treatment.<sup>24</sup> In Delaware, a child had died after being brought to an emergency department at a private hospital. The courts ruled that if a hospital was operating "a full emergency department as a community service...it must accept any community residents coming to the hospital seeking the advertised services."<sup>25</sup> These decisions reinforced the idea that hospitals should provide emergency

21. Refer to Chapter 7 for more information about the development of ambulatory care facilities at Hartford and Yale-New Haven hospitals.

22. William J. Curran, "Legal History of Emergency Medicine from Medieval Common Law to the AIDS Epidemic," *American Journal of Emergency Medicine* 15, no. 7 (November 1997): 664.

23. John F. Harty, "When Hospital Has an Emergency Room It May Be Required To Give Treatment," *Modern Hospital* 96, no. 3 (March 1961): 104.

24. *Ibid.*

25. Curran, "Legal History of Emergency Medicine," 664.

care to all citizens. As a result of such legislative and judicial prompting, hospitals started providing emergency services to all Americans.

### **The Rise of Private Health Insurance**

Private health insurance became widespread in the late forties when it became a fringe benefit of employment.<sup>26</sup> By 1965 private medical insurance had become the major method of payment for health care among the middle-class: it provided coverage to 75 percent of the population.<sup>27</sup> The percentage of out-of-pocket health-care expenditures decreased from 55 percent to 40 percent from 1960 to 1970.<sup>28</sup> Many health insurance plans excluded office visits but did cover emergency room visits.<sup>29</sup> This validated the belief that the hospital was the primary “authority on care” and encouraged patients to use the emergency room rather than the physician’s office in order to minimize medical costs.<sup>30</sup> Health insurance companies provided financial incentives to use the emergency room and effectively legitimized the superiority of the emergency room over the physician’s office for medical care.

### **The Media Reveals Flaws in Emergency Services**

The media emerged as a prominent national force in the sixties: it played a central role in the Vietnam War, the civil rights movement, the Kennedy-Nixon

26. Ludmerer, *Time To Heal*, 163; Starr, *The Social Transformation of American Medicine*, 373.

27. *Ibid.*, 222.

28. U.S. Bureau of the Census, “Personal Health Care: Third Party Payments and Private Consumer Expenditures,” *Statistical Abstract of the United States*, 1960-1970.

29. L.H. Nahum, “The ‘Emergency Room,’” *Connecticut Medicine* 29, no. 11 (November 1965): 763.

30. W. Herbert Springall, “The Hospital Emergency Room,” *Arizona Medicine* 21 (September 1964): 661.

presidential debates, and several other political movements. As the emergency room claimed the limelight, the media directed public attention to the poor state of affairs within emergency medical care. According to one of the first full-time emergency physicians in the country Dr. James Mills, “The public and the lay press were first to notice emergency departments, to evaluate their shortcomings and progress. Journalists found conflict, their essential ingredient, and made the most of it. Hundreds of column inches appeared in lay magazines and Sunday supplements in the 1960s. Television and radio presented interviews on this popular subject.”<sup>31</sup> The media played an important role in increasing public awareness of the flaws of emergency medical care and encouraging public interest in improving emergency services.<sup>32</sup>

In a weekly magazine such as *Time*, Americans could read about the latest advances in modern medicine.<sup>33</sup> In 1963 the magazine published an article that addressed specific shortcomings of emergency medical care.<sup>34</sup> In 1968 it published an article entitled “Emergency Care: Improvement Needed,” which argued that many deaths occurred due to inadequate emergency care. It mentioned Former Speaker of the House Joe Martin who fell into a coma and was taken to a distant hospital because his doctor was not affiliated with a nearby hospital. He died in the ambulance. The article

31. James D. Mills, “Emergency Medicine: A Developing Specialty,” *Journal of the American College of Emergency Physicians*, March-April 1973, 114.

32. The public has played a significant role in shaping the field of medicine. In the 1960s the public increased their demands on physicians and expressed a growing discontent with the medical system. In response to these tensions, the medical community sought to establish a new doctor-patient relationship based on a response to patient concerns rather than paternalism. For case histories that demonstrate how public attitudes affected medicine, refer to Barron H. Lerner, *When Illness Goes Public: Celebrity Patients and How We Look at Medicine* (Baltimore, MD: The Johns Hopkins University Press, 2006).

33. Starr, *The Social Transformation of American Medicine*, 336.

34. “Hospitals: Boom in Emergency Rooms,” *Time*, August 16, 1963.

advocated the development of a well-organized system of emergency care in the United States.<sup>35</sup>

In 1966 The National Academy of Sciences-National Research Council Committee on Trauma published a report entitled *Accidental Death and Disability: The Neglected Disease of Modern Society*. Now commonly referred to as “The White Paper,” it was a landmark publication in the development of emergency medicine. Its aim was to increase public awareness of the problems with emergency services and trauma care in the US and to encourage policymakers to address these problems. It identified trauma as the fourth leading cause of death and the primary cause of disability in the country. It criticized emergency departments for being “overcrowded,” “archaic,” and “poorly equipped.”<sup>36</sup> It also advocated adequate ambulance services, improved communication between ambulances and the emergency department, the designation of a nationwide telephone number to call an ambulance, and increased financial support for clinical research in shock and trauma. It concluded that the general public was “insensitive to the magnitude of the problem of accidental death and injury” in the United States.<sup>37</sup>

Such publications increased public awareness of the inadequacies of emergency care in America’s hospitals and emphasized the importance of improving the quality of emergency services. This media coverage occurred at a time when patients were increasingly using the emergency room rather than the private physician’s office as their preferred facility for urgent and non-urgent health problems. As the government and media focused their attention on emergency services, the public simultaneously started

35. “Emergency Care: Improvement Needed,” *Time*, April 12, 1968.

36. Committee on Trauma et al., *Accidental Death and Disability: The Neglected Disease of Modern Society* (Washington, D.C.: National Academy of Sciences, 1966), 6.

37. *Ibid.*, 5.

to use and criticize emergency services. They demanded that emergency rooms provide efficient, high-quality care at all hours. In 1963 the President of Trinity College, Albert Jacobs, was asked to attend a conference at Hartford Hospital in order to offer his perspective on what the public expected of emergency services. He argued the emergency department should be open twenty-four hours a day and should provide “speedy” and “courteous” service.<sup>38</sup>

As the public began to participate more actively in emergency care, their expectations of emergency services rose. According to Dr. Robert H. Kennedy, a trauma surgeon who advocated improvements in emergency medical care and served as chairman of the Committee on Trauma of the American College of Surgeons (ACS) from 1939 to 1951, “complaints began to come to the administrator’s office about emergency care. Prominent people in the town were asking in letters to the newspaper why they could not get prompter attention in the emergency department.”<sup>39</sup> At smaller hospitals, which were more vulnerable to local competition and the threat of lawsuits, such complaints created even more pressure to improve emergency services.

### **Physicians Advocate Improvements in Emergency Services**

The medical community became increasingly concerned about the state of emergency medical care in the sixties. They developed guidelines and standards to evaluate emergency departments and worked to promote further research in emergency and trauma care. In 1954 Kennedy recognized that “the weakest link in the chain of

38. *Hospital Emergency Services: A Report on a Conference at Hartford Hospital* (Hartford, CT: 26-27 April 1963), in Box 17, folder labeled “Emergency Services,” Thomas Stewart Hamilton Papers, The Hamilton Archives at Hartford Hospital, Hartford, CT, 35.

39. *Ibid.*, 12.

hospital care is the emergency room's attention to the injured in most hospitals."<sup>40</sup> The Committee on Trauma of the ACS played a critical role in evaluating and improving emergency services: they surveyed hospital emergency rooms, developed national standards for emergency care, and promoted the expansion of trauma research. In 1960 the John A Hartford Foundation made a three-year grant to the Field Program in Trauma of the ACS.<sup>41</sup> The committee used this grant to improve patient care in the hospital emergency department. Members of the committee completed 330 on-site visits of emergency departments. They found that only one-third of hospitals had an emergency service committee, only one-third had procedure manuals, and only one-third permitted administration of general anesthesia. The study also demonstrated a lack of consistency and adequate record keeping in emergency departments.<sup>42</sup> According to Kennedy, "There are some hospitals which cannot tell how many patients visit the emergency department in a year...personnel are assigned in varying numbers for the different shifts, usually by guess. Few hospitals keep a record of the time of admission and time of discharge from the emergency department, yet only thus can one know whether patients are being attended to promptly and expeditiously, or whether they are justified in writing a letter to the newspaper."<sup>43</sup> Based on the survey results, the ACS concluded that most emergency facilities operated below generally accepted standards.<sup>44</sup>

40. "How Good Is Your Emergency Room?" *Modern Hospital* 83, no. 6 (1954): 61.

41. "Trauma Program Receives Grant from Hartford Foundation," *Bulletin of the American College of Surgeons*, September-October 1965, 250.

42. P.A. Skudder, J.R. McCarroll, and P.A. Wade, "Hospital Emergency Facilities and Services, A Survey," *Bulletin of the American College of Surgeons*, 46 (March-April 1961): 44-50.

43. *Hospital Emergency Services*, 17.

44. Skudder, McCarroll, and Wade, "Hospital Emergency Facilities and Services," 44-50.

After the Hartford Foundation renewed its three-year grant in 1963, the ACS worked to develop a set of national standards for emergency medical care. In collaboration with the American Hospital Association (AHA), the ACS published a document entitled *Organization and Management of the Emergency Department in the Hospital*.<sup>45</sup> In 1963 the ACS published a finalized version of these emergency department standards after the Committee on Trauma, the Board of Regents of the ACS, and the Joint Commission on the Accreditation of Hospitals had approved them.<sup>46</sup> In addition to developing standards for emergency care, the Committee on Trauma emphasized the importance of trauma research through autopsy examination.<sup>47</sup> By developing national standards for emergency departments and promoting trauma research, the Committee on Trauma played an instrumental role in the development of emergency medicine as a specialty.

## **THE CHANGING NATURE OF THE PHYSICIAN-PATIENT RELATIONSHIP**

At the same time as a national interest in emergency care was expanding, patients' close relationships with their private physicians dissolved. Four major factors stimulated this change: population mobility, the rise of group practices, the trend towards specialization, and increasing physician use of the emergency department. As a

45. "Trauma Program Receives Grant from Hartford Foundation," 250.

46. It included the following stipulations: (1) a single director should run the emergency department (ED) (2) ED policy should be determined by an ED committee representing all of the major medical services (3) the ED should be open 24 hours a day (4) all patients should be seen by a physician within 15 minutes after arrival (5) the ED should be located on the ground floor (6) patients should not be permitted to revisit the ED unless the ED serves as an outpatient department and (7) a manual of standard ED rules should be available for the staff. See Committee on Trauma, "Standards for Emergency Department in Hospitals," *Bulletin of the American College of Surgeons*, May-June 1963, 112, 125.

47. Committee on Trauma et al., *Accidental Death and Disability*, 27.

result of these changes, the emergency room started supplanting the private physician as a reliable and accessible health care provider for urgent and non-urgent health problems.

### **Population Mobility**

Population migration from cities to suburbs separated patients from their physicians.<sup>48</sup> In the fifties and sixties, 20 percent of US citizens changed residences annually; interstate moves increased from 5.8 to 9.4 percent from 1940 to 1960.<sup>49</sup> According to a study of emergency department usage in Baltimore, Maryland, increased use of the emergency room for non-urgent conditions correlated both with living at an address for less than one year and with the lack of a relationship with a private physician.<sup>50</sup> As patients moved and were left without a private physician, they increasingly turned to the emergency room for their medical care.

### **Rise of Group Practices**

After World War II the nature of the general practitioner's (GP's) work changed. GPs established group practices, provided care in the office rather than in patients' homes, worked during regular office hours, and took more vacation time. Forty percent of doctor-patient encounters took place in a patient's home in 1930. By the fifties only 10

48. Geoffrey Gibson, "EMS: A Facet of Ambulatory Care," *Hospitals* 47 (May 16, 1973): 61.

49. Michael J. White and Peter R. Mueser, *Changes in the Demographic Determinants of U.S. Population Mobility, 1940-1980* (Bethesda, MD: Urban Institute, November 1988), 5.

50. ML Webb, "The Emergency Medical Care System in a Metropolitan Area" (master's thesis, The School of Hygiene and Public Health of The Johns Hopkins University, 1969), 103-149.

percent of visits took place in a patient's home, and by the mid-sixties only 4 to 9 percent of patient encounters were house calls.<sup>51</sup>

In 1950 the American Association of Medical Clinics held its first meeting.<sup>52</sup> New medical clinics provided a central location for patient care and allowed for a more structured approach to the physician's daily schedule. The medical profession was also becoming more lucrative. Between 1945 and 1969, the consumer price index rose at an annual rate of 2.8 percent; by comparison, physicians' fees rose 3.8 percent and their incomes rose at an annual rate of 5.9 percent. The average net income from medical practice increased from just over \$8,000 to \$32,000.<sup>53</sup> Because physicians in group practices shared overhead costs and patient responsibilities, they were able to increase their net income and vacation time. In this new era of profitable group practices, private physicians were less accessible to their patients. Physicians were often unavailable during nights, weekends, and holidays. In a 1958 study, 46.1 percent of hospitals believed emergency visits increased because patients were not able to reach physicians on weekends, nights, or holidays.<sup>54</sup> A 1965 study indicated emergency visits increased at

51. Starr, *The Social Transformation of American Medicine*, 359; Aubrey L. Night, Alan M. Adelman, and Jeffery Sobal, "House Call Practices Among Young Family Physicians," *Journal of Family Practice* 29, no. 6 (December 1989): 638.

52. This organization aimed to facilitate an exchange of ideas among clinics, raise the standards of medical practice in clinics, gain recognition for graduate medical education in group practices, and disseminate medical knowledge pertaining to group practices. See "American Medical Group Association History," American Medical Group Association, [http://www.amga.org/AboutAMGA/history\\_aboutAMGA.asp](http://www.amga.org/AboutAMGA/history_aboutAMGA.asp) (accessed December 26, 2008).

53. Starr, *The Social Transformation of American Medicine*, 354.

54. Shortliffe, Hamilton, and Noroian, "The Emergency Room and the Changing Pattern of Medical Care," 23.

night and during weekends.<sup>55</sup> As patients' personal physicians became less accessible, they turned to the emergency room for reliable and immediate service.

### **Trend Towards Medical Specialization**

An increase in medical specialization deemphasized the patient's relationship with the family doctor in two ways: it led to increasing uncertainty as to which physicians patients should contact for an emergency and it led to an overall shortage of GPs. In the first half of the twentieth century, the expansion of medical knowledge and advances in medical technology led to the development of specialist societies in several medical fields, including ophthalmology, otolaryngology, dermatology, obstetrics and gynecology, pediatrics, radiology, and orthopedics.<sup>56</sup> The trend toward medical specialization accelerated after World War II. This acceleration resulted from the financial rewards of specialization and the new image of the specialist as superior to the general practitioner. The disparity in income between specialists and general practitioners increased in the sixties.<sup>57</sup> As a result of differences in insurance coverage, hospital-based specialties like surgery offered a higher income than office-based specialties like internal medicine.<sup>58</sup>

55. Herbert Freilich, "Variations in Census of Emergency-Room Patients," *Hospital Topics* 43 (May 1965): 46.

56. For further information on the development of medical specialties in the United States, refer to George Weisz, *Divide and Conquer: A Comparative History of Medical Specialization* (New York: Oxford University Press, 2006).

57. *Ibid.*, 183.

58. Starr, *The Social Transformation of American Medicine*, 358.

The new image of the specialist provided an additional incentive to specialize.<sup>59</sup> During World War II the military formally recognized the elevated status of specialists by commissioning them in higher ranks than GPs.<sup>60</sup> The medical and lay communities viewed specialists as elite physicians who had attained mastery of their fields and were at the forefront of new developments in academic medicine.<sup>61</sup> GPs relied on specialists for advice about specific medical problems and for patient referrals. The rising threat of lawsuits in the early sixties pressured GPs to refer patients to specialists.<sup>62</sup> Two-thirds of physicians in the military, including many older GPs, indicated a strong desire to become specialists after the war.<sup>63</sup> The G.I. Bill of Rights of 1944 subsidized this transition as thousands of doctors completed specialty training. The number of hospital residencies rose from 9,000 in 1946 to 15,000 in 1948.<sup>64</sup>

The prevalence of hospital-based specialties increased rapidly. A 1950s study at Cornell indicated the proportion of students planning to become GPs decreased from 60 to 16 percent between the first and fourth years of medical school, while students planning to become specialists increased from 35 to 74 percent. Those going into teaching and research increased from 5 to 10 percent.<sup>65</sup> The percentage of doctors reporting themselves as full-time specialists increased from 44 to 69 percent from 1955 to

59. Ludmerer, *Time To Heal*, 183.

60. *Ibid.*, 142.

61. Weisz, *Divide and Conquer*, 131.

62. Alexander Schamban, "Must a Physician Refer a Patient to a Specialist?" *Medical Times* 92, no. 10 (October 1964): 152a-53a, 156a.

63. Ludmerer, *Time To Heal*, 182.

64. Weisz, *Divide and Conquer*, 143.

65. Starr, *The Social Transformation of American Medicine*, 355.

1966. Surgical specialties increased from 26 percent to over 30 percent in the sixties.<sup>66</sup> By 1967 only 15 percent of medical students were planning to enter general practice.<sup>67</sup> The medical system could accommodate these changes because the process for certifying specialties, which had developed in the 1930s, did not regulate the size or distribution of specialties.<sup>68</sup> Medical specialties grew at an uncontrolled rate because of autonomy of specialty boards and the failure of an organization to regulate specialization.<sup>69</sup> As the medical work force and residency programs expanded, opportunities for further specialization arose. New positions became available for physicians in subspecialty divisions of fields such as cardiology, gastroenterology, and endocrinology.<sup>70</sup>

The trend towards specialization deemphasized the patient's relationship with the family doctor. Dr. Louis Nahum, an internist in New Haven, Connecticut, recognized that patients had a "feeling that the specialist who treated them a short time ago is not interested in their total health problem or that he does not wish to accept responsibility for a patient's problem outside of his own field of interest."<sup>71</sup> Patients believed that specialists were unwilling to or incapable of helping them in a field outside of their training; as a result, they did not know which physician to contact in the case of an emergency.<sup>72</sup> In this new era of specialized medicine, the emergency room became appealing because it offered patients medical care for any health problem.

66. *Ibid.*, 359.

67. Ludmerer, *Time To Heal*, 187.

68. Starr, *The Social Transformation of American Medicine*, 356.

69. Weisz, *Divide and Conquer*, 145.

70. Starr, *The Social Transformation of American Medicine*, 352.

71. Nahum, "The 'Emergency Room,'" 763.

72. Gibson, "EMS: A Facet of Ambulatory Care," 61.

The trend towards specialization also led to a shortage of general practitioners. By 1964 there were only 68,000 GPs listed in the American Academy of General Practice, down from 96,000 fifteen years earlier.<sup>73</sup> The number of doctors in private practice declined not only as a proportion of physicians but also in relation to the total population: the number of GPs decreased from 76 to 50 per one hundred thousand people from 1960 to 1965.<sup>74</sup> Because of the decline of GPs, they became busier and less accessible within their communities. Many physicians had long wait times – even for patients with an appointment. Patients could often save time by going to the emergency room. A 1969 study in Baltimore indicated the average travel time to the emergency room was only 15.2 minutes, as compared to 17.2 minutes to a private office; the average wait time was only 36.7 minutes, as compared to 43.7 minutes in a private office without an appointment.<sup>75</sup> Busier appointment schedules and longer wait times increased the inaccessibility of physicians. Such delays in outpatient care provided an additional incentive for patients to go the emergency room for prompt treatment of any medical problem.

### **The Emergency Room Replaces the Physician's Office as a Common Meeting Place**

In the 1960s GPs started to use the emergency room as a meeting place for their patients. Physicians chose to meet their patients in the emergency room rather than their private offices because of the availability of better medical equipment there, the

73. John J. Goldman, "New 'Family Doctor' Patients With Minor Ills Jam Emergency Rooms, Drive Up Hospital Costs," *Wall Street Journal*, August 10, 1964.

74. Richard D. Lyons, "For the United States, the Medical Emergency Worsens," *St. Petersburg Times*, October 1, 1967.

75. Gibson, "EMS: A Facet of Ambulatory Care," 64.

guarantee of payment from a third party, and the convenience of going to a hospital where the patient might ultimately be admitted.<sup>76</sup> Continuing advancements in medical technology, including blood transfusions, the EKG machine, and cardiac catheterization, made it difficult to treat emergencies on a house call or even in a private office. Many private offices did not have even X-ray machines.<sup>77</sup>

One study indicated 41 percent of patient visits were “mutual convenience” visits where a doctor met the patient in the emergency facility.<sup>78</sup> In a 1969 study in Baltimore, private physicians treated 30 percent of emergency patients in their office, admitted 17 percent of patients directly to the hospital, and referred 54 percent to the emergency room. Physician’s support of the emergency room led to increased patient visits and encouraged patient confidence in the emergency room as the preferred facility for medical care.<sup>79</sup>

## **THE NEW ROLE OF THE EMERGENCY ROOM**

As a result of growing national interest in emergency care and the changing nature of the physician-patient relationship, emergency medicine in the United States underwent a transformation. The prosperous economy and the sociopolitical climate of the sixties facilitated this transformation. The emergency room took on a new role in

76. W. Herbert Springall, “The Hospital Emergency Room,” *Arizona Medicine* 21 (September 1964): 661.

77. Albert Q. Maisel, “Emergency Service: Medicine’s Newest Specialty,” *Reader’s Digest*, June 1965, 96.

78. D. Gitchell, “Mutual Convenience Visits – What Are the Trends?” (master’s thesis, University of Michigan, 1966), quoted in Webb, “The Emergency Medical Care System in a Metropolitan Area.”

79. Webb, “The Emergency Medical Care System in a Metropolitan Area,” 149.

society as a community health center. It developed an exclusive niche within the health care system as a place where patients had a right to be treated and insurance companies fully covered this treatment. This occurred at a time when the government, the media, the American public, and physician leaders pushed to improve the quality of emergency services.

The concept of twenty-four-hour, high-quality emergency services fit well with American cultural ideals. According to Dr. Karl Mangold, one of the first full-time emergency physicians, “We have a ‘McDonald’s society’ that wants what it wants when it wants it; and it wants it 24 hours a day.”<sup>80</sup> In 1962 Dr. Vernon Abbott recognized that, “to the public’s way of thinking, any illness is an emergency, and there is *always* a doctor at the emergency department.”<sup>81</sup> According to Mills, the public wanted emergency care “delivered promptly, cheaply, and with all the warmth of a traditional house call.”<sup>82</sup> The “McDonald’s society” had decided it was time to use emergency services. The public flooded emergency rooms for both urgent and non-urgent health problems.

As a result of this transformation, emergency rooms across the country experienced astronomical increases in admissions.<sup>83</sup> Regardless of size or location, all hospitals witnessed a major increase in emergency room use, disproportionate to increases in the use of other hospital facilities. From 1954 to 1973, the number of hospitals increased by 14 percent, hospital beds by 56 percent, hospital admissions by 60

80. Alexander Walt, ed., “Panel: ‘Role of the Specialist in the Emergency Room,’” *Journal of Trauma* 19, no. 7 (July 1979): 484.

81. Vernon C. Abbott, “Attending Doctors Staff Emergency Room,” *Modern Hospital* 98 (June 1962): 77-78.

82. James D. Mills, “Emergency Medicine, 1947-1987: A PGM Retrospective,” *Postgraduate Medicine* 81, no. 3 (February 15, 1987): 82.

83. Refer to Figure 2, Figure 3, and Table 2 in Appendix 1.

percent, and inpatient days by 41 percent – but visits to the emergency room increased by 380 percent.<sup>84</sup> A second study indicated emergency room visits increased 205 percent between 1954 and 1965; the bulk of this growth occurred at local and state hospitals rather than voluntary hospitals. After 1965 emergency visits rose at a slower rate, increasing only 49 percent in the next five years.<sup>85</sup> A third study revealed an increase of 120 percent in emergency service visits from 1945 to 1958, a growth rate that was approximately double that of hospital admissions at these institutions.<sup>86</sup>

An increase in non-urgent visits to the emergency room drove the rise in patient load. A 1964 study at Genesee Hospital in Rochester, New York, indicated that less than one in six patients seen in the emergency room were sick enough to be admitted to the hospital. One-third of visits were non-urgent, one-third could be treated in 24 hours but did not need immediate care, and one-third were true emergencies.<sup>87</sup> According to a 1964 survey by the ACS, only 45 percent of emergency room visits constituted true emergencies.<sup>88</sup> One study estimated that 42 percent of cases were non-urgent; this was similar to the 38 percent reported at Boston's Beth Israel Hospital.<sup>89</sup> Similar rates of non-urgent visits were reported at hospitals in Hartford, Pittsburgh, Newark, and New

84. Gibson, "EMS: A Facet of Ambulatory Care," 60.

85. Harry F. Dowling, *City Hospitals: The Undercare of the Underprivileged* (Cambridge: Harvard University Press, 1982), 164-165.

86. Skudder, McCarroll, and Wade, "Hospital Emergency Facilities and Services," 44-50.

87. Nahum, "The 'Emergency Room,'" 763.

88. Goldman, "New 'Family Doctor' Patients With Minor Ills Jam Emergency Rooms."

89. Skudder, McCarroll, and Wade, "Hospital Emergency Facilities and Services," 44-50; SS Lee, JA Solon, and CG Sheps, "How New Patterns of Medical Care Affect the Emergency Unit," *Modern Hospital* 94 (May 1960): 97-101.

Haven.<sup>90</sup> Because of the increase in non-urgent visits, the proportion of surgical cases decreased. The number of accident patients, which had formerly constituted the majority of patients, represented only one-third of emergency patients by the early sixties.<sup>91</sup> Sixty percent of emergency room patients were medical and pediatric cases.<sup>92</sup> Increased use of the emergency room exacerbated the existing shortages of space, equipment, and personnel.<sup>93</sup> Faced with these new challenges and mounting public criticism, hospitals devised innovative solutions in order to improve emergency services. The new staffing methods that began at small community hospitals sparked the development of emergency medicine as a specialty.

90. Shortliffe, Hamilton, and Noroian, "The Emergency Room and the Changing Pattern of Medical Care," 20-25; P.A. Marinakos and W.E. Landgraf, "The Changing Pattern of Emergency Room Service," *Hospital Topics* 41 (December 1963): 40-43; H. Kaplan and B. Levinstone, "An Appraisal of the Emergency Room of the Newark Beth Israel Hospital," *J. Newark Beth Israel Hosp.* 10 (July 1959): 113-21; E. Richard Weinerman, "Changing Patterns in Medical Care: Their Implications For Ambulatory Services," *Hospitals* 39 (December 16, 1965): 2.

91. "Hospitals: Boom in Emergency Rooms," *Time*, August 16, 1963; Robert H. Kennedy, "The Emergency Department Situation" (lecture, meeting of the Committee on Trauma, April 22, 1966), 2.

92. Robert H. Kennedy, "The Emergency Department Situation," 2.

93. Paul A. Skudder and Preston A. Wade, "The Organization of Emergency Medical Facilities and Services," *Journal of Trauma* 4, no. 3 (May 1964): 358.

## 4

### **Advances in Military Medicine Revolutionize Emergency**

#### **Medical Care**

As the emergency room took on a central role in society, medical advances simultaneously spurred the development of a new specialty. Successful innovations in pre-hospital, trauma, and coronary care distinguished the field of emergency medicine and created a new purpose for the emergency room: to provide care for patients in the transition period between pre-hospital care and coronary care. As research progressed, it became increasingly important to improve the quality and efficiency of emergency care in order to increase the chances of patient survival. By the end of the sixties, the emergency room had established its new role as a critical, intermediate link in the chain of urgent medical services.

#### **MILITARY ADVANCEMENTS IN PRE-HOSPITAL CARE**

The military developed the earliest systems of pre-hospital care, which yielded astounding results. After advances in pre-hospital and trauma care during the Korean and Vietnam wars, physicians implemented these concepts back home. Unlike the military's emergency medical care, which developed as a comprehensive, integrated system, civilian pre-hospital and trauma systems developed sporadically across the country. These developments enabled more patients to reach the hospital alive and placed increased pressure on the emergency room to deliver high-quality care.

Advances in patient transport began two centuries ago with the idea that wounded soldiers should be transported off the field before the battle ended. In 1759 French army surgeon Baron Percy established a corps of field litter-bearers to transport the wounded from the battlefield.<sup>94</sup> In 1797 Baron Dominique-Jean Larrey, the chief physician of Napoleon's army, improved on this idea: he designed horse-drawn carts manned by drivers, corporals, and litter-bearers to transport the wounded to field aid stations. These carts were called "*ambulances volantes*" or "flying ambulances."<sup>95</sup>

The United States lagged behind France in the development of patient transport on the battlefield. The Union Army had only two ambulances at the beginning of the Civil War.<sup>96</sup> The First Ambulance Corps was developed in 1864 upon the recommendation of Major Jonathan Letterman. By the end of the war, horse-drawn ambulances regularly transported the wounded from the battlefield.<sup>97</sup> Motorized ambulances replaced horse-drawn ambulances in World War I.<sup>98</sup> During the Korean and Vietnam wars, the US Army developed rapid transport systems for the wounded in order to minimize delays to definitive therapy. The first helicopter ambulance unit came into service in 1951, and helicopters were used to a limited extent during the Korean War.<sup>99</sup> Air evacuation was further refined in Vietnam due to rough terrain and the lack

94. Ellen M. McKenny, "History of the Motorized Ambulance Transport," *Military Medicine* 132 (October 1967): 819.

95. James B. Miller, "A Brief Military History of Today's EMS," *Emergency Medical Services* 30, no. 5 (May 2001): 148.

96. Katharyn Kennedy et al., "Triage: Techniques and Applications in Decisionmaking," *Annals of Emergency Medicine* 28, vol. 2 (August 1996): 137.

97. McKenny, "History of the Motorized Ambulance Transport," 819-22.

98. Katharyn Kennedy et al., "Triage: Techniques and Applications in Decisionmaking," 137.

99. Miller, "A Brief Military History of Today's EMS," 148; Spurgeon Neel, *Medical Support of the U.S. Army in Vietnam 1965-1970* (Washington, D.C.: Department of the Army, 1973): 59.

of a secured road network; air medevac missions skyrocketed from 13,000 to 206,000 in the years from 1965 to 1969.<sup>100</sup> Such improvements in transportation directly translated to reduced time to definitive treatment. In World War I it took an average of ten hours for a patient to receive definitive treatment. In the Korean War this was reduced to five hours. This process culminated during the Vietnam War when the newly developed evacuation system reduced the time to one or two hours.<sup>101</sup>

In addition to establishing emergent patient transport, the military was the first to develop medical triage. Larrey developed the first organized system of emergency care: he instituted a triage system where the wounded were treated based on medical condition rather than rank.<sup>102</sup> The US army first used a triage system during the Civil War. The United States Army Medical Corps refined this approach in World War II by creating create a tiered triage system that included medics who initiated treatment in the field.<sup>103</sup> In Vietnam War the US Army developed a more sophisticated triage system. Although it was difficult to implement this system in Vietnam's rough terrain, it provided the backbone for emergency medical care in the military.<sup>104</sup> At the line of combat, trained medics provided care and initiated the evacuation process. In the helicopter, medical aid men continued emergency care and conducted an in-flight

100. John T. Greenwood and F. Clifton Berry Jr., *Medics at War: Military Medicine from Colonial Times to the 21st Century* (Annapolis, MD: Naval Institute Press, 2005), 140.

101. Robert M. Hardaway, "Contributions of Army Medicine to Civilian Medicine," *Military Medicine* 138, no. 7 (July 1973): 411.

102. Miller, "A Brief Military History of Today's EMS," 148.

103. Katharyn Kennedy et al., "Triage: Techniques and Applications in Decisionmaking," 137.

104. For more information on the implementation of triage in the Vietnam War, refer to Spurgeon Neel, *Medical Support of the U.S. Army in Vietnam 1965-1970* (Washington, D.C.: Department of the Army, 1973).

evaluation.<sup>105</sup> Based on this evaluation, patients were taken either to a battalion clearing station for minor injuries or further resuscitation or to a mobile surgical hospital for definitive treatment of complex injuries. Patients expected to return to duty within sixty days were transported to general hospitals outside of the combat zone for surgery, medical treatment, or psychiatric treatment. Patients not expected to return within sixty days were transported to hospitals in the United States.<sup>106</sup>

In addition to developing triage systems, the Army also provided immediate emergency care in fully staffed, well-equipped mobile surgical hospitals. Mobile field surgical detachments first appeared in World War II and were used extensively during the Korean War. These hospitals treated hemorrhagic and traumatic shock promptly and efficiently. Mobile army surgical hospital (MASH) units were equipped to treat urgent surgical cases; they consisted of 60 to 200 beds and were staffed with sixteen officers, twelve nurses, and ninety-five enlisted personnel.<sup>107</sup> The first Medical Unit Self-Contained, Transportable (MUST) became operational in 1966 during the Vietnam War.<sup>108</sup> The MUST was a fixed surgical hospital used on the front lines for rapid stabilization of the wounded. It consisted of three units that could be transported by truck or helicopter. A turbine engine supplied electricity for lighting, air conditioning, refrigeration, and hot water. Other inflatable elements provided laboratory, X-ray, pharmacy, dental, and kitchen facilities.<sup>109</sup>

105. *Ibid.*, 74.

106. Leonard D. Heaton et al., "Military Surgical Practices of the United States Army in Viet Nam," *Current Problems in Surgery*, November 1966: 3-4.

107. Greenwood and Berry, *Medics at War*, 119.

108. Rose C. Engleman et al., *200 Years of Military Medicine* (Fort Detrick, Maryland: The Historical Unit of the US Army Medical Department, 1975), 43.

109. Neel, *Medical Support*, 65.

The US Army also established the broad-scale use of blood transfusions and promoted trauma research. These advances further improved emergency care. The US Army first transfused blood during World War I.<sup>110</sup> During World War II each US field army established a blood program; in the last thirteen months of the war, the US sent half a million units of blood from the US to Europe and the Pacific.<sup>111</sup> In Vietnam the military blood program operated for ten years. Blood transfusions were completed during helicopter transport and occasionally before the helicopter even arrived.<sup>112</sup> Between 1965 and 1971, the US Army sent 1.3 million units of blood to Vietnam and the US military hospitals administered approximately 600,000 units.<sup>113</sup> Increased use of blood transfusions in Vietnam was a major factor that led to the success of resuscitative efforts.

The US Army also made important contributions to trauma research. In the fifties and sixties the Army made advancements in treatment for burn victims at the Burn Treatment Center at Ft. Sam Houston in Texas. They also developed the concept of disseminated intravascular coagulation and studied its importance with regard to shock and trauma.<sup>114</sup> Military surgical research units in Saigon and Da Nang investigated the indications and effects of blood transfusion.<sup>115</sup> Surgical teams at the 3<sup>rd</sup> Surgical Hospital

110. J.R. Hess and M.J.G. Thomas, "Blood Use in War and Disaster: Lessons from the Past Century," *Transfusion* 43, no. 11 (November 2003): 1622.

111. *Ibid.*, 1623. For more information on the US military blood program in World War II refer to Douglas B. Kendrick, *Blood Program in World War II* (Washington: Office of the Surgeon General, Department of the Army), 1964.

112. Neel, *Medical Support*, 49.

113. Hess and Thomas, "Blood Use in War and Disaster," 1623.

114. Hardaway, "Contributions of Army Medicine to Civilian Medicine," 410.

115. Eiseman, "Combat Casualty Management in Vietnam," 54.

and the US Army Hospital in Zama, Japan, studied resuscitation procedures, acute pulmonary edema, and war wounds.<sup>116</sup>

The success of advances in patient transport, triage, and trauma care was striking. The most effective developments were rapid helicopter evacuation, the use of resuscitation techniques during transport, and the successful treatment of shock at mobile surgical hospitals. As a result of these developments, patient outcomes improved significantly. Deaths as a percent of hits decreased from 29.3 percent in World War II to 26.3 percent in Korea to 19 percent in Vietnam. Several other statistics, including survival rate, case fatality rate, return-to-duty rate, and length of hospital stay, also demonstrated the success of these improvements in emergency medical care.<sup>117</sup>

### **MILITARY ADVANCEMENTS ARE APPLIED TO CIVILIAN MEDICINE**

Military advancements in pre-hospital and trauma care led to the establishment of an organized, comprehensive system of emergency medical care. Initially, it was difficult to apply these concepts to civilian medicine because the infrastructure for such a system did not exist. Early advancements in transport, triage, and trauma care only occurred sporadically at the local level. National and statewide efforts arose to coordinate these services in the seventies.

Upon their return to the United States, many former military surgeons noted how far civilian pre-hospital and trauma care lagged behind military medicine. Dr. Ben

116. Charles Heisterkamp, ed. and comp., "Activities of the US Army Surgical Team WRAIR - Vietnam" (Technical report, for the period 17 June 1967 to 20 January 1968, prepared for the US Army Medical Research and Development Command, Washington, D.C., 1970).

117. Neel, *Medical Support*, 51, 172.

Eiseman, a military surgeon who served as a consultant to the US forces in Vietnam, emphasized this point:

Wounded in the remote jungle or rice paddy of Vietnam, an American citizen has a better chance for quick, definitive surgical care by board certified specialists than were he hit on a highway near his hometown in the continental United States. Even if he were struck immediately outside the emergency room of most United States hospitals rarely would he be given such prompt, expert operative care as routinely is furnished from the site of combat wounding in Vietnam. The concentration and organization of the medical manpower and equipment necessary to achieve such a level of care half-way around the world from the United States is awesome.<sup>118</sup>

Because of improvements in emergency medical care, the United States lost only 58,000 lives over the twelve years of the Vietnam War.<sup>119</sup> By contrast, there were 116,000 fatal accidents in the United States in 1969 alone.<sup>120</sup>

### **EMS Systems**

Civilian EMS systems were a direct outgrowth of the earlier wartime advances in transport, triage, and trauma care. However, the development of civilian EMS was delayed due to the lack of a proper infrastructure to support these services. Prior to 1960 EMS systems were largely unregulated and disorganized; hospitals, fire departments, volunteer groups, and undertakers provided services at the local level.<sup>121</sup> EMS systems started in the states of Illinois and Maryland and the cities of Seattle, Miami, Los

118. Eiseman, "Combat Casualty Management in Vietnam," 62.

119. These 58,000 lives constituted 27 percent of the total number of those hospitalized for wounds, which was 211,000. See Department of Defense, *Vietnam Conflict – Casualty Summary*, (Washington, D.C.: Defense Manpower Data Center, 2008), <http://siadapp.dmdc.osd.mil/personnel/CASUALTY/castop.htm> (accessed 20 February 2009); Orrin Schwab, *A Clash of Cultures: Civil-Military Relations During the Vietnam War* (Westport, CT: Greenwood Publishing Group, 2006), 151.

120. Hardaway, "Contributions of Army Medicine to Civilian Medicine," 411.

121. Manish N. Shah, "The Formation of the Emergency Medical Services System," *American Journal of Public Health* 96, no. 3 (March 2006): 414.

Angeles, Portland, and Columbus, Ohio, towards the end of the decade and began to spread across the country in the seventies. EMS systems played an integral role in the development of emergency medicine. By keeping more patients alive on the way to the hospital, effective EMS systems put increasing pressure on hospitals to improve emergency room care. The development of EMS systems also distinguished the clinical field of emergency medicine from other specialties.

Urban ambulance systems first emerged in the US in second half of the 19<sup>th</sup> century, primarily as a result of military experiences in Europe and America. Prior to ambulances, people walked to hospitals or used a variety of transportation vehicles including omnibus drivers, litters, pushcarts, delivery wagons, private sedans, hire-chairs, gigs, flies, and cabs. The Commercial Hospital in Cincinnati introduced the first ambulance service associated with a hospital in 1865.<sup>122</sup> The ACS also contributed to the early development of ambulance services: as early as the twenties they made recommendations to examine the principles transportation and ambulance equipment.<sup>123</sup> Ambulance services were mainly hospital-based until World War II, when these services were eliminated due to the departure of personnel and a poor economy. According to Dr. David Boyd, a general surgeon who served as National Director of Emergency Medical Services in the late seventies, during World War II “the ambulances went to hell.”<sup>124</sup> Untrained, unlicensed individuals who owned hearses, station wagons, or other

122. John S. Haller, “The Beginnings of Urban Ambulance Service in the United States and England,” *Journal of Emergency Medicine* 8 (1990): 743.

123. Karl Mangold and Charles F. Frey, “The Physician and the Emergency Health Service System,” *Postgraduate Medicine* 55, no. 1 (January 1974): 198.

124. Robert Wood Johnson Foundation. *Special Report, Number 2: Neglected for Years, Emergency Medical Services Now Seem To Be Catching On in the U.S.* (Princeton, NJ: The Robert Wood Johnson Foundation, 1977), 12.

back-loading vehicles provided transportation to hospitals.<sup>125</sup> Dr. Edward B. Dalton, Sanitary Superintendent of the New York City Metropolitan Board of Health, established the first city ambulance system in conjunction with Bellevue Hospital in 1869.<sup>126</sup>

The concept of EMTs also emerged from the Vietnam War, where medical aid men had been trained to provide medical care at the line of combat. According to Dr. Peter Rosen, founder of one of the first emergency medicine residency programs in the country at the University Chicago, “much of the impetus for the development of ancillary medical personnel came from war experiences that demonstrated that military corpsmen would successfully master and practice sophisticated technical tasks.”<sup>127</sup> When the Vietnam War ended, military medics returned home and provided the country with a new work force that was well trained and experienced in emergency care.<sup>128</sup> Consistent with this trend, the American Academy of Orthopaedic Surgeons, the American Heart Association, and the ACS developed curricula and initiated physician-run programs for ambulance drivers.<sup>129</sup> In 1969 cardiologist Dr. Leonard Cobb worked with Gordon Vickery, Chief of the Seattle Fire Department, to develop one of the first paramedic training programs for firefighters. This effort came to be known as Medic

125. Mangold and Frey, “The Physician and the Emergency Health Service System,” 199.

126. Haller, “The Beginnings of Urban Ambulance Service in the United States and England,” 744.

127. Peter Rosen, “History of Emergency Medicine,” *Conference on the Role of Emergency Medicine in the Future of American Medical Care* (Williamsburg, VA: April 17-20, 1994), 6. Dr. Rosen is founding editor of the first major textbook in emergency medicine, *Rosen’s Emergency Medicine: Concepts and Clinical Practice*. He currently serves as a senior lecturer at Harvard Medical School and as Professor Emeritus of Clinical Medicine and Surgery at the University of California, San Diego School of Medicine.

128. Shah, “The Formation of the Emergency Medical Services System,” 417.

129. Mangold and Frey, “The Physician and the Emergency Health Service System,” 199.

One. In 1971 the National Registry of Emergency Medical Technicians was established with the aim of providing national criteria for EMT training. The following year, they worked with AMA and the American Association of Junior Colleges to publish guidelines for a two-year associate degree program for EMTs.<sup>130</sup>

Organized EMS systems started to develop across the country in the sixties. A 1965 study indicated that 200 of 900 cities had an ordinance regulating ambulance service. Of those with ordinances, 162 required an attendant in addition to the driver, and 174 required the equipment listed by the ACS Committee on Trauma.<sup>131</sup>

Government legislation further facilitated the development of regional EMS systems. The Federal Highway Safety Act of 1966 contained national standards for emergency medical services and provided for the allocation of a percentage of each state's highway funds to safety, which included emergency health services.<sup>132</sup> Many states used this funding to purchase ambulances that met national standards. The EMS Systems Act of 1973 promoted the development of comprehensive regional EMS systems by authorizing HEW to make categorical grants for that purpose and establishing the Interagency Committee on EMS. A total of \$300 million was allocated to set up EMS systems across the country from 1974 to 1981.<sup>133</sup>

As EMS systems evolved, there was increasing pressure to improve patient care in the emergency room because more and more patients survived the trip to the hospital. According to Dr. Karl Mangold, one of the first full-time emergency physicians,

130. Eisenberg, "The Resuscitation Greats," 5-9.

131. Oscar P. Hampton, "Present Status of Ambulance Service in the United States," *Bulletin of the American College of Surgeons*, July-August 1965, 177.

132. Mangold and Frey, "The Physician and the Emergency Health Service System," 199.

133. Paul Glastris, "An American Hero - Dr. David Boyd and Emergency Health Care - Life and Death in the Emergency Room, Part 2," *Washington Monthly*, February 1986.

“patients who were previously dead in the streets or in the bedrooms are now coming into the emergency department alive and sometimes salvageable.”<sup>134</sup> As physicians became increasingly invested in pre-hospital care, the emergency services at hospitals attracted greater attention among the medical community.

### **Triage and Trauma Systems**

As EMS systems became more advanced, hospitals simultaneously developed medical triage systems. Although the concept was similar to that of military medicine, the implementation of triage in the civilian world occurred on a hospital-by-hospital basis. Yale-New Haven Hospital was one of the first hospitals to develop a triage system. An article in *Medical News* praised the new medical triage system as a great success.<sup>135</sup> Another article in *Time* entitled “Curing the Emergency Room” discussed successful triage systems at Cook County Hospital in Chicago and Beekman Downtown Hospital in New York City.<sup>136</sup>

Dr. R. Adams Cowley helped solve the problem of coordinating efforts between EMS systems and receiving hospitals. As an army surgeon in France during World War II, he discovered that the time to treatment was critical for shock patients. This discovery spurred many of the improvements in transport, triage, and trauma care that occurred during the Korean and Vietnam wars. Cowley had a vision of “MASH-like trauma care” for the state of Maryland.<sup>137</sup> In 1961 he founded a two-room Clinical Shock Trauma

134. Alexander Walt, ed., “Panel: ‘Role of the Specialist in the Emergency Room,’” *Journal of Trauma* 19, no. 7 (July 1979): 484.

135. “‘Triage’ System Simplifies Emergency Room Problems,” *Medical News* 188 (10), 45.

136. “Medicine: Curing the Emergency Room,” *Time*, November 22, 1971.

137. Glastris, “Life and Death in the Emergency Room.”

Research Unit at the University of Maryland. Eight years later, with the financial support of the National Institute of Health, a new Shock Trauma Center was constructed. The trauma center provided immediate, comprehensive treatment of trauma patients that included resuscitation, stabilization, definitive care, and rehabilitation.<sup>138</sup> It was equipped with a blood bank, lab, operating room, and surgical and support staff. Helicopters funded by the Department of Transportation provided statewide patient transport. Similar progress took place in Illinois, where Dr. David Boyd and Dr. Bruce Flashner, former head of the Trauma and Emergency Service at Cook County Hospital, implemented a statewide system of emergency medical care.<sup>139</sup> By 1974 they had created a sophisticated EMS system that included paramedic training, a network of state-designated trauma centers, radio communication, ambulance and helicopter transportation, and a trauma registry for evaluating hospital performance.<sup>140</sup>

### **Research in Trauma and Coronary Care Continues**

The development of hospital-based trauma care systems was accompanied by further advancements in emergency medical research in the areas of resuscitation and cardiac care. Anesthesiologist Dr. Peter Safar and respiratory researcher Dr. James Elam advocated for mouth-to-mouth resuscitation in the fifties.<sup>141</sup> By 1966 Dr. Safar had started a one-year fellowship in resuscitology for intensive care units, recovery rooms,

138. Richard F. Edlich, "Three Giant Steps Toward the Development of a Modern Emergency Medical Service System," *Journal of Emergency Medicine* 9 (January-April 1991): 65.

139. Glasstris, "Life and Death in the Emergency Room."

140. Albert W. Snoke, *Hospitals, Health, and People* (New Haven: Yale University Press, 1987), 117.

141. Mickey S. Eisenberg, "History of the Science of Cardiopulmonary Resuscitation," chap. 1 in *Contemporary Cardiology: Cardiopulmonary Resuscitation* (Totowa, NJ: Humana Press Inc., 2005), 3.

and emergency rooms at the University of Pittsburgh.<sup>142</sup> Even earlier Dr. Rudolph Noer, Chairman of the Department of Surgery at the University of Louisville, articulated the new role of the emergency department as a place for resuscitation and stabilization prior to surgery.<sup>143</sup>

Mobile cardiac care units (CCUs) emerged in during the era of open-heart surgery, cardiac catheterization, organ transplant, renal dialysis, the heart-lung machine, the EKG machine, and mechanical ventilators.<sup>144</sup> Although mobile CCUs were not part of the ER, they highlighted the importance of emergent diagnosis and stabilization of heart patients. In 1966 Dr. Frank Pantridge and Dr. John Geddes of Belfast, Ireland, established the first mobile CCU, which consisted of an ambulance with specialized equipment and dedicated staff to provide pre-hospital cardiac care.<sup>145</sup> Dr. William Grace initiated the first mobile CCU in the US at St. Vincent's Hospital in Manhattan two years later.<sup>146</sup> Studies demonstrated a decrease in hospital mortality rates from 35 to 20 percent with the advent of CCUs.<sup>147</sup>

Because emergency rooms had previously been used to treat accident victims, they remained surgically oriented; this often made it difficult for patients with chest

142. Minutes of the 37th Meeting, Committee on Trauma, Division of Medical Sciences, National Academy of Sciences-National Research Council, 22-23 April 1966, Washington, DC.

143. Rudolf J. Noer, "Emergency Care of Critically Injured," *Journal of Trauma* 3, no. 4 (July 1963): 331.

144. Ludmerer, *Time To Heal*, 163.

145. J.F. Pantridge and J.S. Geddes, "A Mobile Intensive-Care Unit in the Management of Myocardial Infarction," *The Lancet* 2, no. 7510 (August 5, 1967): 271-73.

146. William J. Grace and John. A Chadbourn, "The Mobile Coronary Care Unit," *Diseases of the Chest* 55, no. 6 (June 1969): 452-55.

147. Wayne A. Wallace and Paul N. Yu, "Sudden Death and the Pre-Hospital Phase of Acute Myocardial Infarction," *Annual Review of Medicine* 26 (1975): 1.

pain to get treated quickly and efficiently.<sup>148</sup> Cardiologist Dr. William Likoff at Hahnemann Hospital published a 1972 article that highlighted ineffective emergency care as an obstacle to rapid treatment during a heart attack:

The delay to which a patient usually is subjected in...the emergency room of a hospital is a common cause for treatment failures in the pre-hospital care of the patient with an acute myocardial infarction. It often evolves from errors in judgment on the part of the triage officer as to who commands priority of attention. It may also result from inefficiency in mobilizing the proper personnel and equipment required to reach a diagnostic conclusion.<sup>149</sup>

The advances in coronary care provided the emergency room with a new medical purpose: the resuscitation and stabilization of cardiac patients. These developments increased pressure on hospitals to improve the efficiency of emergency services.

### **A NEW FIELD: EMERGENCY MEDICINE**

According to otologist Dr. George Shambaugh, “the idea of investigation...is fundamental in the conception of the real specialist” and the true specialist “must identify himself with scientific medicine and win his spurs by making some real contribution to medical science.”<sup>150</sup> Advances in pre-hospital, trauma, and cardiac care established a field of new clinical knowledge that pertained directly to emergency medicine. This knowledge also created a new role for the emergency room as an intermediate, critical link between EMS systems and CCUs. As a result of these

148. William J. Grace, “The Mobile Coronary Care Unit and The Intermediate Coronary Care Unit in The Total Systems Approach to Coronary Care,” *Diseases of the Chest* 58, no. 4 (October 1970): 366.

149. William Likoff, “Care of the Patient with Acute Myocardial Infarction: Prehospital Phase,” in *The Twenty-Third Hahnemann Symposium*, ed. Wilbur W. Oaks, Stanley Spitzer, and John H. Moyer, 19-25 (New York: Grune and Stratton, 1972), 21.

150. George E. Shambaugh, “The Specialist in Medicine,” *Journal of the American Medical Association* 59 (1912): 1088-89.

developments, it became increasingly important for emergency physicians to diagnose patients quickly and accurately and to effectively expand the role of the emergency room beyond that of the obsolete accident room.

## 5

### **Hospitals Restructure Emergency Services**

The transformation of the emergency room into a community health center and the advances in pre-hospital and trauma care put increasing pressure on hospitals to improve emergency services. In the 1960s hospitals encountered many obstacles that influenced their approaches to these issues. Many hospitals were left without adequate manpower, especially for emergency services, due to a nationwide house staff shortage. To complicate matters, house staff became increasingly resistant to working in the emergency room (ER). Physicians were also reluctant to work in the ER as they entered new specialty and subspecialty fields and as the variety and magnitude of medical problems in the ER expanded. Because of these challenges, hospital administrators developed new strategies to deal with the rising patient volumes and to improve the quality and efficiency of patient care. Urban academic centers made structural and administrative changes to their emergency departments while small community hospitals brought new, full-time leadership into their emergency departments. These changes led to nationwide reorganization of emergency medical care in the hospital.

#### **HOUSE STAFF RESIST WORKING IN THE EMERGENCY ROOM**

There was a severe house staff shortage in most hospitals across the country in the early sixties. This shortage occurred because hospitals, residency programs, and medical specialties expanded while medical school enrollment did not. In 1957 hospitals were looking for more than 12,000 interns annually, but American medical schools were graduating fewer than 7,000 students a year. By the 1960s surgery was the only field that

maintained a pyramidal structure for residency; other specialties in need of manpower permitted all physicians who were admitted to the program to complete residency. By the late sixties 20 percent of approved residency positions were unfilled even though 32 percent of interns and residents were graduates of foreign medical schools.<sup>151</sup> This shortage made it difficult for hospitals to staff medical services, especially emergency services, which relied on residents from other departments. To further exacerbate the house staff shortage, there was a temporary shortage of foreign physicians due to new educational requirements: the Educational Commission for Foreign Medical Graduates instituted an exam for foreign physicians in 1958. The number of foreign medical graduates in the US had increased from 2000 to 9000, or from 10 to 26 percent of house staff, in the fifties.<sup>152</sup> The shortage of house staff and foreign physicians in the sixties made it especially difficult for community hospitals, where residency positions were less desirable as compared to teaching hospitals, to staff the emergency department.

House officers were signing antiwar petitions, joining marches, and participating in demonstrations in the sixties. The spirit of these protests spread to the professional arena: they started to protest resident salaries, the lack of ancillary personnel, and the poor working conditions. Residents made the first step towards unionization by establishing the Committee of Interns and Residents in New York City in 1958. By 1972 house staff associations had developed at 70 percent of hospitals with graduate training programs and 81 percent of hospitals run by local and state governments. Hospitals felt

151. "Directory of Approved Internships and Residencies, 1964," *Journal of the American Medical Association* 190, no. 7 (November 14, 1964). Refer to Figure 1 and Table 1 in Appendix 1.

152. Ludmerer, *Time To Heal*, 185; Starr, *The Social Transformation of American Medicine*, 360.

increasing pressure to improve the conditions for house staff because of the stiff competition for resident manpower.<sup>153</sup>

One of the house staff's major complaints was working in the ER. As other specialist residents left the ER, the general medicine and surgery residents increasingly resisted working there. According to Rosen, "the residents in other specialties didn't want to do emergency medicine...they resented that they had to take care of these ever-increasing numbers of patients without supervision."<sup>154</sup> Many surgical residents were spending up to eighteen months of their surgical residency running the emergency department. In the early seventies, the surgical residents at the University of Chicago rebelled: they refused to go back to the ER for second tours. This left the hospital without sufficient manpower to run the ER.<sup>155</sup>

### **PHYSICIANS RESIST WORKING IN THE EMERGENCY ROOM**

Due to increasing specialization, physicians resisted working in the emergency department. Many specialists, including pathologists, radiologists, dermatologists, and psychiatrists, had almost no clinical experience beyond medical school; as soon as some specialists were excused from mandatory emergency room duty, other specialists felt they had a right to be excused.<sup>156</sup> Furthermore, as the composition of emergency room visits shifted from injuries to medical cases, it became increasingly important for

153. Ludmerer, *Time To Heal*, 245-46.

154. Peter Rosen, MD, telephone interview by author, December 23, 2008.

155. *Ibid.*

156. Rosen, "History of Emergency Medicine," 9.

physicians in the emergency room to differentiate quickly and efficiently the acutely ill patients from those with non-emergent problems.

At the same time that physicians' resistance to working in the ER increased, many physicians who had served in the military returned to the US with a new belief that emergency care should be provided by experts. Of students admitted to medical school during the war, 55 percent were under contract to the army, 25 percent to the navy, and 20 percent for civilian service.<sup>157</sup> Wartime advances in emergency care contributed to a perception that emergency care should be provided by well-trained, experienced physicians. Dr. Phelan, a surgeon at the University of Wisconsin, believed that "the experiences gained during World War II and the Korean campaign...indicate the value of an experienced physician who is primarily concerned in directing the management of injured and acutely ill patients. The similarity of practice under wartime and disaster conditions is comparable to many present-day emergency room services."<sup>158</sup> The landmark article *Accidental Death and Disability: The Neglected Disease of Modern Society* declared that there was a need for emergency care training "of a caliber commensurate with that attained by only a few individuals in active military field units caring for combat casualties."<sup>159</sup> The military experiences of many doctors contributed to the growing perception that a new clinical niche was forming: emergency medicine.

157. Ludmerer, *Time To Heal*, 127.

158. John T. Phelan, "Some Responsibilities of the Physician in the Care of the Emergency Room Patient," *The Journal - Lancet* 78, no. 12 (December 1958): 509.

159. Committee on Trauma et al., *Accidental Death and Disability*, 19.

## A NEW IDEA: PHYSICIAN GROUPS STAFF THE EMERGENCY ROOM

Confronted with patient complaints, staffing difficulties, rising patient volumes, and continuing advances in pre-hospital and coronary care, hospitals were forced to devise solutions to the ER problem. Prior to these changes in emergency room management, leadership in the ER varied across the country. Many community hospitals staffed the ER with nurses who performed triage and contacted physicians as needed. Other hospitals staffed the emergency room with no one at all, aging or impaired physicians, or foreign graduates.<sup>160</sup> Some hospitals staffed the ER with physicians who volunteered on a rotating basis. Frederick Memorial Hospital set up a rotating call system in which three surgeons rotated through ER call for one month as early as the 1930s.<sup>161</sup> Physicians who rotated on a weekly basis staffed the emergency room at MacNeal Memorial Hospital in Illinois.<sup>162</sup> At St. Luke's Hospital in Wisconsin, twenty-nine physicians volunteered to be on call one out of twenty-nine days.<sup>163</sup> Academic hospitals typically staffed the ER with medical students and residents in surgery, medicine, and pediatrics; attending physicians only came down to the ER as needed.<sup>164</sup>

In order to address the problem of increased patient load, hospital administrators considered several options. A new concept – that attending physicians should supervise

160. Rosen, "History of Emergency Medicine," 3.

161. Charles H. Conley, "Emergency Room Committee," *Maryland State Medical Journal* 4, no. 11 (November 1955): 726-7.

162. John L. Grout et al., "20 Years' Experience in Emergency Room Management," *Bulletin of the American College of Surgeons* 40, no. 4 (July-August 1955): 210.

163. "Outgrown Central Supply Now Smooth-Functioning Emergency Room," *Hospitals* 31, no. 6 (March 16, 1957): 48.

164. Brian J. Zink, *Anyone, Anything, Anytime: A History of Emergency Medicine* (Philadelphia: Mosby-Elsevier, 2006), 14.

the ER on a full-time basis, even in the presence of house staff – emerged in the literature. As early as 1958, Phelan had the foresight to note that due to increased use of the ER, it would have to be staffed by full-time physicians in order to ensure adequate care and management of patients.<sup>165</sup> With regard to the qualifications of these physicians, Phelan recommended that they be “experienced” and “primarily concerned in directing the management of injured and acutely ill patients.”<sup>166</sup> Dr. James Cross, a physician at Community Memorial General Hospital in La Grange, Illinois, recommended selecting staff members interested in emergency care and rotating them through the ER for one-week periods in hospitals with house staff or for 24-hour periods in hospitals without house staff.<sup>167</sup> He insisted that a physician be available at all times in the ER and that house staff contact the attending physician before initiating definitive therapy.<sup>168</sup> Frances Ginsberg, a nurse at Boston’s New England Center Hospital, emphasized that it was important for senior staff physicians to supervise interns and residents appropriately.<sup>169</sup> In 1968 the American Society of Anesthesiologists recommended that a physician be assigned to the emergency room at all times and that every patient entering the ER be seen by a physician within fifteen minutes; they also required that ER physicians be “experienced in acute medicine” and fill a new

165. John T. Phelan, “Some Responsibilities of the Physician in the Care of the Emergency Room Patient,” *The Journal – Lancet* 78, no. 12 (December 1958): 509.

166. *Ibid.*

167. James H. Cross, “Medical Economics: The Hospital Emergency Room,” *Illinois Medical Journal* 118 (October 1960): 248.

168. *Ibid.*

169. Frances Ginsberg, “Effective Emergency Room Needs Adequate Staff, Patient Screening,” *Modern Hospital* 104 (May 1965): 150.

occupational niche by supervising intensive care and resuscitation programs in hospitals and within the community.<sup>170</sup>

New staffing models that provided full-time attending coverage in the ER served as the impetus for the development of a new medical specialty and ultimately became the gold standard for ER management in hospitals across the country. Each hospital developed its own approach to improve emergency services based on the needs of the community and the goals of the hospital administration. Community hospitals were the first to implement new staffing methods that relied on full-time emergency physicians. In Alexandria Hospital, full-time emergency physicians became the primary emergency care providers and replaced nurses, house staff, and other physicians in managing the ER. These physicians filled a new clinical niche. Although many had been general practitioners in their communities, they relinquished their private practices to work in the hospital on a full-time basis. Unlike most full-time medical faculty, however, they did not engage in clinical research or associate with a particular hospital-based specialty. As Zink portrays them in *Anyone, Anytime, Anything: A History of Emergency Medicine*, they were individuals who enjoyed working in the emergency room and who were committed to improving the quality of emergency medical care in their communities.<sup>171</sup> These physicians later emerged as leaders in emergency medicine and played a pivotal role in fighting to gain recognition as specialists. Their national presence reinforced the growing sentiment within the medical community that experts in emergency care were needed.

170. Committee on Acute Medicine of the American Society of Anesthesiologists, "Community-wide Emergency Medical Services," *Journal of the American Medical Association* 204, no. 7 (May 13, 1968): 602.

171. Zink, *Anyone, Anything, Anytime*, 30-53.

In spite of the growing concerns about inadequate resident supervision, academic hospitals did not change their staffing methods significantly in the sixties. These hospitals instituted triage systems and established ambulatory care facilities in order to accommodate an increasing patient load, and they continued to use house staff to run the ER. Such changes temporarily enabled teaching hospitals to function adequately without relying on full-time emergency physicians. This delayed the entry of emergency physicians into academic medicine, and ultimately delayed the development of emergency medicine as a specialty. In later years academic hospitals adopted the staffing methods of smaller hospitals and began providing full-time supervision of residents in the ER.

### **THE BEGINNING OF A NEW MEDICAL SPECIALTY**

At a national level emergency medicine was at the brink of evolution. The emergency room was fast becoming a community health center and a critical link in the chain of urgent medical services. Advances in pre-hospital and coronary care raised the standards for emergency care and stimulated further research. Hospital administrators restructured their emergency services in response to the growing needs and expectations of the public. In spite of these advances, emergency medicine was a long way from meeting the standards of a medical specialty.

A formalized process for approving specialties first developed in the thirties as a response to the proliferation of medical specialties. This process required that a medical board obtain approval from the AMA Council on Medical Education and the Advisory

Board for Medical Specialties in order to achieve specialty status.<sup>172</sup> These two organizational bodies established detailed requirements to regulate specialty formation. According to the American Board of Medical Specialties (ABMS), which replaced the Advisory Board in 1970, these requirements included (1) differentiation of a new specialty based on major new concepts in medical science (2) representation of a distinct, well-defined field of medical practice (3) the ability of physicians to demonstrate special knowledge and capability in the field (4) establishment of a plan for developing a training program in graduate medical education and (5) satisfactory evidence that the proposal has broad professional support.<sup>173</sup> Once a medical board had attained specialty status, specialists were required to complete three years of training after internship and then to obtain certification by a recognized board.<sup>174</sup> The specialty certification process drove a new trend: the replacement of part-time specialists with full-time specialists. Because of the extensive training requirements for board certification, it became less practical to work as a part-time specialist. As more doctors became board certified, the number of part-time specialists decreased. The majority of specialists practiced part-time in the 1920s, but by 1945 there was only a small portion of part-time specialists.<sup>175</sup>

172. The Advisory Board of Medical Specialties, formed in 1934, included several medical organizations that had a vested interest in overseeing the establishment of medical specialties: the four founding medical boards (ophthalmology, otolaryngology, obstetrics and gynecology, and dermatology), the American Hospital Association, the Association of American Medical Colleges, the Federation of State Medical Boards, and the National Board of Medical Examiners. See Zink, *Anyone, Anything, Anytime*, 158; Weisz, *Divide and Conquer*, 141.

173. Paul Friedmann, "The Development of New Medical Specialties," *Current Surgery* 60, vol. 1 (January-February 2003): 100-1.

174. Because medical schools were not interested in offering graduate medical education, hospital residency programs expanded in order to provide specialty training. See Weisz, *Divide and Conquer*, 143.

175. *Ibid.*, 144.

Emergency medicine started to fulfill the ABMS requirements in the sixties. Although a specific area of medical knowledge had not yet been delineated, emergency medicine started to differentiate based on new concepts of pre-hospital, trauma, and coronary care. And although emergency physicians had not yet formed a medical board, they started to practice on a full-time basis. This was a major achievement: by establishing the role of the full-time emergency physician before gaining specialty status, emergency physicians entered the house of medicine through the back door. They did not complete the process of specialty recognition in the traditional fashion, by first forming a specialty board and then establishing graduate education programs that would expand the professional base of the specialty. Instead, they first established a broad base of support then developed graduate education programs, and lastly fought the political battles to gain the specialty status and to establish accredited residency training programs at academic institutions.<sup>176</sup> The development of the specialty started at the local level. Alexandria, Hartford, and Yale-New Haven hospitals provide useful case studies to better understand this developmental process, since each hospital's approach to emergency medicine influenced the specialty in a different way.

176. The first residency program was established in 1970, nine years before the American Board of Emergency Medicine was recognized as a conjoint board and nineteen years before it was recognized as a primary board.

## 6

### **Emergency Medicine Begins in a Small Community Hospital**

#### **ALEXANDRIA HOSPITAL**

Alexandria Hospital in Alexandria, Virginia, was the first hospital in the country to institute a formalized system of emergency room staffing with a group of full-time physicians. Dr. James Mills, President of the Medical Staff at Alexandria Hospital, created this staffing method in response to rising patient volumes and mounting criticism of emergency services. The Alexandria Plan (as it came to be known) won national attention as a great success. After its institution in 1961, community hospitals across the country developed similar models for their emergency departments. By facilitating the emergence of full-time emergency physicians, this staffing method directly contributed to the development of emergency medicine as a specialty.

Alexandria, a town located just outside of Washington, D.C., had a population of approximately 91,000 in 1960.<sup>177</sup> The Alexandria Hospital had 190 beds and 10,500 admissions.<sup>178</sup> There were 18,000 annual visits to the emergency room.<sup>179</sup> According to nurse Jane Pinson, who started working at Alexandria Hospital in the early sixties, the emergency room only had three beds: two stretchers in one room and an ob-gyn bed

177. U.S. Bureau of the Census, *Census of Population and Housing, 1790-1980* (Washington, DC: Bureau of the Census), <http://www.census.gov/prod/www/abs/decennial/index.htm> (accessed December 22, 2008).

178. Zink, *Anyone, Anything, Anytime*, 30.

179. James D. Mills, "A Method of Staffing a Community Hospital Emergency Department," *Virginia Medical Monthly* 90 (October 1963): 518.

across the hall. It was located in the basement of the hospital.<sup>180</sup> The hospital cared for a considerable number of trauma cases because of its proximity to US Route 1 and a dangerous area of downtown Alexandria. According to Pinson, it was not uncommon “for a stabbing or a gunshot wound to stumble through the door...we saw a lot of that...we had a lot of accidents, a lot of pedestrians being hit off the US Route 1...a lot of trauma...a lot of medicine.”<sup>181</sup>

Before the institution of the Alexandria Plan, nurses managed the ER on a twenty-four-hour basis. They performed triage by scheduling outpatient appointments and calling house staff or physicians as necessary.<sup>182</sup> The physicians, who volunteered to cover the ER for a day, took call from their offices. Nurses often had difficulty getting hold of them. Many physicians waited until they had seen all of their office patients before returning a nurse’s call in the ER. According to Cutler, nurses generally “urged patients to wait until their family physician could take care of the emergency.”<sup>183</sup> Additionally, the EMS system in Alexandria was not well organized at this time; transportation consisted of old Cadillac hearses that were used as ambulances, and the fire department ran the rescue squad.<sup>184</sup>

180. Jane Pinson, telephone interview by author, December 29, 2008. Jane Pinson started working at Alexandria Hospital as a nursing student in 1961. She worked in the emergency department at Alexandria Hospital for thirty-eight years, from 1964 to 2002, and currently works in endoscopy at Inova Alexandria Hospital.

181. *Ibid.*

182. James D. Mills, “The Alexandria Plan,” in *Emergency Department: A Handbook for the Medical Staff* (Chicago: American Medical Association, Department of Hospitals and Medical Facilities, 1966), 17.

183. Ann Cutler, “Lives Imperiled By Ambulance Services,” chap. 7 in *Four Minutes To Life* (New York: Cowles Book Co., 1970), 108.

184. Mills, “A Method of Staffing a Community Hospital Emergency Department,” 518.

### **Patient Use of the Emergency Room Increases**

Emergency visits at Alexandria Hospital increased due to two factors: population growth and the expansion of health insurance coverage for federal employees.

Alexandria experienced strong population growth in the sixties.<sup>185</sup> From 1950 to 1970, Alexandria's population increased by 80 percent.<sup>186</sup> With the expansion of the federal government in 1961, the number of federal employees increased and many new government workers moved to Alexandria. Executive branch civilian employment increased from 1.8 million to 1.9 million from 1960 to 1962. By the end of the decade the number of federal government employees had increased to 2.3 million, the highest number since the end of World War II.<sup>187</sup>

Population migration to the suburbs further increased Alexandria's population. In the town district where Alexandria Hospital was located, the population grew by 506 percent in the sixties.<sup>188</sup> Neighboring districts experienced similar population growth of 89, 195, and 896 percent. The other districts in Alexandria had less significant population changes, ranging from -27 to +35 percent.<sup>189</sup> The proximity of the hospital may have

185. Refer to Figure 4 and Table 3 in Appendix 1.

186. U.S. Bureau of the Census, *Historical National Population Estimates: July 1, 1900 to July 1, 1999*, prepared by the Population Division (Washington, DC: Bureau of the Census, 11 April 2000), <http://www.census.gov/popest/archives/1990s/popclockest.txt> (accessed December 22, 2008).

187. U.S. Bureau of the Census, "No. HS-50 Federal Government - Employment: 1901 to 2002," in *Statistical Abstract of the United States: 2003* (Washington, DC: Bureau of the Census, 2003), [www.census.gov/statab/hist/HS-50.pdf](http://www.census.gov/statab/hist/HS-50.pdf) (accessed December 28, 2008).

188. The population increased from 2,719 in 1960 to 16,483 in 1970. See Department of Planning and Regional Affairs, *1970 Population Highlights and Analysis*, 4.

189. *Ibid.*

encouraged patients in these surrounding districts to use the ER rather than a private physician, particularly for non-urgent visits.

The middle-class population in Alexandria was directly affected by the expansion of health insurance. The median family income in Alexandria was \$7000, well above the national and state levels of \$5000, in 1960. Furthermore, Alexandria's population increase from 1950 to 1962 can be primarily attributed to an increase in employed persons: unemployed persons remained close to 1000, while employed persons increased from 24,000 to 37,000.<sup>190</sup> The Federal Employees Health Benefits Program established on 1 July 1960 provided hospital and major health insurance coverage for federal employees. It offered twenty-eight plans, with fifteen available in the Washington, D.C., area; twenty-one health maintenance organizations, as well as Blue Cross and Blue Shield, established plans in the program.<sup>191</sup> By 1964 the total program enrollment was 2.1 million.<sup>192</sup> These health plans provided many government workers in Alexandria with health insurance coverage for ER visits.

The growth of the medically insured population in Alexandria contributed to increased use of the ER. Emergency visits increased by 3 percent annually in the sixties.<sup>193</sup> Although this can be partly attributed to a population increase, it was also due to an increase in non-urgent emergency visits. According to Mills the primary reason for

190. *Annual Report: Alexandria, A Dynamic City* (Alexandria, VA: Planning and Urban Renewal Department, 1963), Alexandria Library Local History/Special Collections, Alexandria, VA, 8.

191. Karl Polzer, "The Federal Employees Health Benefits Program: What Lessons Can It Offer Policymakers?" *Issue Brief National Health Policy Forum* 12, no. 715 (12 March 1998): 2.

192. Andrew E. Ruddock, "Federal Employees Health Benefits Program I. History and Future of the Federal Program - 1964," *American Journal of Public Health Nations Health* 56, no. 1 (January 1966): 51.

193. Mills, "A Method of Staffing a Community Hospital Emergency Department," 518.

this increase was that patients had begun to use the emergency department as a “community medical center...at any hour of the day or night.”<sup>194</sup>

### **Hospital Pressured to Improve Emergency Services**

A house staff shortage and mounting patient criticism exacerbated the problems of patient overload in the ER. In the late 1950s the hospital experienced a staffing shortage, primarily due to the increasing demands on foreign physicians. Additionally, because the hospital was not affiliated with an academic institution, it had particular difficulty attracting house staff to its training programs. In 1958 the hospital had nine residents and no interns to fill twenty positions in the emergency room.<sup>195</sup>

The local population also stimulated change. Patients complained about long wait times and about being turned away when their complaints were not serious enough. They also complained about the difficulties in communicating with foreign house staff.<sup>196</sup> According to Cutler, “Patients had to wait in a corridor and complained bitterly about long delays in obtaining treatment or of being brusquely dismissed if their illnesses or injuries didn’t appear serious enough to merit treatment.”<sup>197</sup> As a result, the medical staff and hospital directors became “increasingly concerned about the hospital’s public image.”<sup>198</sup> Simultaneously, local competition for patients was tightening: Fairfax was constructing a new hospital scheduled to open in 1961.

194. Edlich, “Development of a Modern Emergency Medical Service System,” 62.

195. Stanly Ferber, “Practice Limited to the Emergency Room,” *Medical Economics*, July 15, 1963, 78.

196. Mills, “The Alexandria Plan,” 17.

197. Cutler, “Lives Imperiled By Ambulance Services,” 108.

198. Mills, “The Alexandria Plan,” 17.

### **Mills Devises a Solution to Improve Emergency Services**

As a result of staffing difficulties, increasing patient volumes, and mounting criticism, administrators decided to improve emergency services at the hospital. Emergency room committees conducted studies and experimented with several options.<sup>199</sup> The hospital first assigned attending physicians to mandatory ER duty, but they were “unable to sustain the commitment.”<sup>200</sup> Although specialty physicians were willing to participate in emergency care as consultants, they were not willing to provide comprehensive emergency care in the ER. Hospital administrators considered using GPs on a rotating basis to staff the ER but were ultimately “reluctant” to impose such a burden on these physicians who composed only a small percentage of the medical staff.<sup>201</sup> Hospital administrator Charles Goff considered staffing the ER with senior medical students or licensed Public Health Service personnel, but they ultimately decided these solutions were “legally or ethically suspect. It looked as though we might have to close down the emergency room entirely.”<sup>202</sup>

On 26 June 1961 Dr. James D. Mills Jr., a local practitioner and the President of the Medical Staff at Alexandria Hospital since 1960, came up with a new idea. According to Pinson, “one night he went home, and it had just been hellacious, and just thought that there had to be a better way, and he just started...writing out plans.”<sup>203</sup> He recruited

199. *Ibid.*

200. Ferber, “Practice Limited to the Emergency Room,” 78.

201. Mills, “The Alexandria Plan,” 17.

202. Ferber, “Practice Limited to the Emergency Room,” 78.

203. Pinson, interview.

three other general practitioners in the area, John P. McDade, William J. Weaver, and Chalmers A. Loughridge, to join him as full-time emergency physicians. All four physicians relinquished their practices and entered into a five-year independent contract with Alexandria Hospital in order to provide twenty-four-hour coverage of the ER. The physicians charged a fee for service based on Blue Shield and community fees, and the hospital charged an additional fee for service.<sup>204</sup> The minimum charge per patient was a \$5 physician fee and a \$5 hospital fee.<sup>205</sup> Private patients paid a fee for service, and a municipal appropriate paid for the care of medically indigent patients.<sup>206</sup> The doctors worked twelve-hour shifts for five days, followed by five days off.<sup>207</sup> One doctor was in the ER and one doctor was on call at all times; part-time military physicians from Fort Belvoir were hired part-time to moonlight in the ER as needed during peak loads.<sup>208</sup>

### **The Success of the Alexandria Plan**

The Alexandria Plan, which represented an innovation in ER management, was an extraordinary success. There were several factors which contributed to this success: Mills' careful choice of colleagues; the physicians' establishment of positive relationships with local practitioners, hospital staff, and patients; the town's financial support for medically indigent patients; and the availability experienced military physicians to provide additional staffing support. The lasting success of the plan can primarily be attributed to the long-term, full-time commitment of the emergency physicians to the

204. Mills, "A Method of Staffing a Community Hospital Emergency Department," 519.

205. Ferber, "Practice Limited to the Emergency Room," 82.

206. Mills, "A Method of Staffing a Community Hospital Emergency Department," 519.

207. Pinson, interview.

208. Mills, "The Alexandria Plan," 21.

Alexandria ER. Over the course of their careers, they improved the reputation of emergency medicine within the hospital and the community and established new standards for emergency care.

The first factor that led to the success of the Alexandria Plan was Mills' careful choice of emergency physicians. They were all close friends who had been general practitioners in Alexandria for three to twelve years. They all agreed to relinquish their practices in order to work full-time in the ER. This may have encouraged patients, left without a private physician, to go to the ER where they would encounter a familiar face. According to Pinson, "with being in private practice, all four...knew everybody...it wasn't like somebody was taking over that nobody knew."<sup>209</sup> Furthermore, the physicians were well respected within the community and the hospital. Mills, as President of the Medical Staff, was a prominent figure in the hospital. All four physicians were willing to make a long-term commitment to emergency medicine. In 1961, even though the Alexandria Plan represented a new, radical approach to ER management, these four physicians took the risk of establishing a five-year contract with the hospital. They continued to work in the ER at Alexandria for the remainder of their professional careers.<sup>210</sup>

The success of the plan also hinged on the support of patients, local practitioners, and medical staff. The emergency physicians met with initial resistance from local practitioners and hospital staff and worked hard to gain their support. According to McDade, "when we started out, we had a lot of enemies. People were certain that we were going to take over the medical practice in the hospital. We had a lot of people

209. Pinson, interview.

210. Zink, "Reflections on the Past 25 Years in Emergency Medicine: Learning From Our History," *Journal of Emergency Medicine* 35, no. 1 (July 2008): 2.

suspicious of us. So suspicious. Mostly the surgeons that were involved with the emergency department.”<sup>211</sup> Some of the local practitioners were concerned that the emergency physicians would compete for patients. The support of local practitioners was critical for two reasons: (1) patients often relied on their physicians’ advice when deciding to go to the ER and (2) these physicians could often provide valuable information about their patients.

In order to win the support of local practitioners, Mills and his colleagues set strict limitations on patient care in the ER in order to preserve the autonomy of local physicians. The Alexandria Plan included a stipulation that patients with private physicians “will be treated only at the request of the patient’s doctor” and that “no continuing course of therapy will be undertaken.”<sup>212</sup> The plan did not permit ER physicians to engage in private practice. When patients were admitted to the ER, the physicians made a special effort to contact local practitioners by phone in order to include them in the decision-making process. The private physician could give orders over the phone or in writing; alternatively, he could refer his patient to the ER physician or another staff member for medical care.<sup>213</sup> The emergency physicians adhered strictly to these stipulations. All four physicians terminated their relationships with former patients. According to Mills, “we follow the same routine in the emergency room with our former patients as we do with strangers.”<sup>214</sup> They kept private physicians informed about their patients’ ER visits and referred all patients to their private physicians for

211. Zink, *Anyone, Anything, Anytime*, 35.

212. Mills, “A Method of Staffing a Community Hospital Emergency Department,” 519.

213. Mills, “The Alexandria Plan,” 18.

214. Ferber, “Practice Limited to the Emergency Room,” 80.

follow-up care. Patients without a long-term provider were given the choice of three physicians within the community based on geographical location.<sup>215</sup>

Mills and his colleagues also worked to establish positive relationships with the hospital staff, especially the surgeons and nurses. In response to surgeons' concerns that some of their clientele would be treated in the ER, Mills and his colleagues agreed not to perform surgery.<sup>216</sup> Two local GPs performed minor surgeries such as appendectomies in the ER while surgeons took the more serious cases.<sup>217</sup> The physicians also established positive working relationships with the nurses. According to Pinson, "It was wonderful...you worked side by side with them, and they really trusted you...they taught you a lot, they wanted you to be an extra hand for them, and it was such a small group of nurses at that time, it was very family-oriented."<sup>218</sup>

Another key component that led to success of the Alexandria Plan was the town's financial support for non-insured patients. A six-month trial period was required in order for the Alexandria Plan to obtain approval by the medical staff, the board of directors, and the city council.<sup>219</sup> After the plan was approved, the City Council provided a stipend to cover the costs of medical care for the uninsured.<sup>220</sup> This mitigated the financial burden of the emergency room. Although the ER was still not a financial success for the hospital, which collected only 50 percent of fees, it was a financial success for the physicians. Their income was higher than it had been in private practice. They

215. Mills, "The Alexandria Plan," 18.

216. Zink, "Reflections on the Past 25 Years in Emergency Medicine," 2.

217. Pinson, interview.

218. *Ibid.*

219. Mills, "The Alexandria Plan," 19.

220. Pinson, interview.

averaged a forty-two-hour to fifty-six-hour workweek, as compared to the sixty-hour workweek in private practice.<sup>221</sup> The improved hours and compensation provided incentives to continue working in the ER rather than returning to private practice and made their careers sustainable over the long-term.

The broad availability of military physicians provided a valuable resource for Mills and his colleagues. In other regions of the country, it might have been more difficult to find additional qualified physicians who were interested in working in the ER on a part-time basis. As compared to other specialists or GPs, many of these physicians had experienced the triage and trauma systems in the military and could apply their medical knowledge directly to civilian medical care in the ER.

As a result of all of these factors, the Alexandria Plan was a great success. This success was accompanied by expansion of the ER and the EMS system: the ER moved from the basement to an entire wing on the first floor of the hospital and a third Fire Department ambulance was put in operation “to further improve emergency service” in 1964.<sup>222</sup> The Alexandria Plan was well received by local practitioners, hospital administrators, and patients. A few months after its initiation, the majority of local practitioners responded favorably to a questionnaire about emergency services. One physician noted “the system is run ethically, with constant consideration for patients and for other physicians.”<sup>223</sup> According to another, “I never fail to receive a call when one of my patients shows up at the emergency room...later, I can get a copy of the

221. Ferber, “Practice Limited to the Emergency Room,” 84.

222. Mills, “A Method of Staffing a Community Hospital Emergency Department,” 518; *Annual Report: City of Alexandria 1963-1964* (Alexandria, VA: Planning and Urban Renewal Department, 1964), Alexandria Library Local History/Special Collections, 8.

223. Ferber, “Practice Limited to the Emergency Room,” 84.

records and lab reports from the hospital. It's a most helpful and workable procedure."<sup>224</sup> According to Mills, the emergency physicians had established "cordial relations" with the local physicians and had received the support of the hospital staff by 1964.<sup>225</sup> Most importantly, patient satisfaction remained high and patients continued to use the ER. The patient load doubled in the first year and increased 14 percent from 1962 to 1963.<sup>226</sup> According to Mills, "the public is pleased with our service...whatever the reasons, we know the complaints have decreased and that the hospital board and the administrator are both satisfied and cooperative."<sup>227</sup>

The four physicians' lifelong commitment to the ER contributed to the long-term success of the Alexandria Plan. At a time when physicians and residents were becoming increasingly resistant to working in the ER, the Alexandria Plan provided the hospital with a group of committed physicians who enjoyed working in the ER and were invested in its development. Over the course of their careers, these physicians developed trusting relationships with patients and local practitioners. According to Pinson, "a lot of doctors came and saw their own patients...as [Mills' and his colleagues'] reputation grew, it was very seldom that they would come to see their own patients."<sup>228</sup> As local practitioners started to trust the emergency physicians, they became less involved in emergency room care. In later years Mills and his colleagues only made phone calls to local practitioners "if there was a problem or if an admission had to happen."<sup>229</sup> The

224. *Ibid.*

225. Mills, "A Method of Staffing a Community Hospital Emergency Department," 519.

226. *Ibid.*, 518; Mills, "The Alexandria Plan," 20.

227. Mills, "The Alexandria Plan," 20.

228. Pinson, interview.

229. *Ibid.*

physicians' long-term commitment also facilitated the development of consistent standards for emergency room care. Pinson recalls when McDade first decided that every patient's vital signs needed to be recorded. This was such a novel and unheard of idea in the sixties that she and the other nurses were surprised at first. According to Pinson, "each year, each month...we got our first monitor...things improved."<sup>230</sup> By establishing patient care guidelines and purchasing new equipment, these four physicians established an ER infrastructure that would last longer than their careers.

### **The Alexandria Plan Spreads To Other Communities**

The news of the success of the Alexandria Plan spread to other communities. Many physicians visited Alexandria Hospital in order to learn about the new staffing method and ultimately model it at their own hospitals.<sup>231</sup> Local community competition played a role in the spread of new staffing methods: nearby Fairfax Hospital hired full-time emergency physicians after the Alexandria Plan had been implemented.<sup>232</sup> Former army officer Dr. Reinald Leidelmeyer became a part-time emergency physician there in the same month that the Alexandria Plan started.<sup>233</sup>

The American Medical Association (AMA) increased national awareness of the Alexandria Plan. Under the leadership of Richard Manegold, the AMA published a booklet entitled *Emergency Department: A Handbook for Medical Staff* in 1966. It provided physicians with the essential elements of the Alexandria Plan, included sample contracts

230. *Ibid.*

231. Zink, "Reflections on the Past 25 Years in Emergency Medicine," 2.

232. John Wiegenstein, "What, Another Milestone? The First Steps in the Founding of a Specialty," *Annals of Emergency Medicine* 30, no. 3 (September 1997): 330.

233. Zink, *Anyone, Anything, Anytime*, 40.

from full-time physician staffing plans, and emphasized the importance of the ER in patient care. It stated, "It is undeniable that the emergency service is at least as important as any other inpatient department in the hospital. For this reason, 'emergency department' seems the most apropos and is used throughout this handbook. The recognition of the emergency service as a 'department' of the hospital may be the first step in solving its problems."<sup>234</sup> The AMA booklet, although it did not directly promote the use of full-time emergency physicians over other staffing methods, did increase national awareness of the new staffing method and help to create a broad base of professional support for emergency physicians.<sup>235</sup>

As the Alexandria Plan spread beyond the local region, many physicians across the country closed their practices and started working full-time in the ER. According to Mills, "spontaneously, at local levels throughout the country, there developed new concepts in the hospital delivery of emergency health care. These plans were put into operation on local initiative to meet local conditions."<sup>236</sup> Like Alexandria, each community had a particular set of local factors that motivated hospitals to change their staff method. According to Dr. Robert H. Kennedy, "in each community some one or more persons have tried to adapt the existing emergency department to the local needs. I have surveyed many emergency facilities and have yet to come across two which are alike."<sup>237</sup> The various staffing methods had one commonality: the use of part-time or full-time salaried physicians to run the ER. Numerous case reports of staffing methods

234. American Medical Association, *Emergency Department: A Handbook for the Medical Staff* (Chicago: 1966, American Medical Association, Department of Hospitals and Medical Facilities).

235. Zink, *Anyone, Anything, Anytime*, 59-60.

236. Mills, "Emergency Medicine: A Developing Specialty," 114.

237. *Hospital Emergency Services*, 12 (see chap. 3, n. 39).

similar to the Alexandria Plan and of larger groups of contracting physicians appeared.<sup>238</sup> In 1964 Detroit's Harbor Hospital adopted a variation of the Alexandria Plan.<sup>239</sup> At Binghamton General, a group of five physicians commenced full-time practice in the ER in 1965.<sup>240</sup>

The staffing method continued to spread during the sixties. The ACS published an article in 1969 that discussed full-time coverage of ERs by physicians who had no other patients, office, or hospital privileges.<sup>241</sup> An ER staffing study of twenty-two hospitals demonstrated a trend toward "a greater degree of in-hospital physician coverage...utilizing physicians paid by the hospital."<sup>242</sup> A study of 221 hospitals in Illinois further supported these findings.<sup>243</sup> By the 1970s there were an estimated 425 to 450 full-time groups in ER practice. At approximately five physicians per group, these

238. For plans similar to the Alexandria Plan, refer to WE Beaven, "Medical Staffing of Emergency Rooms, A Trial of Group Practice," *Medical Annals of D.C.* 34, no. 4 (April 1965): 173-76; RF Tuveson, "Is Emergency Service Becoming a Specialty," *Modern Hospital* 102, no. 5 (May 1969): 112-13, 160; "Full-Time Practice in the E.R." *Hospital Progress* 47, no. 10 (February 1967): 77-80. For plans which involved larger groups of contracting physicians, refer to Vernon C. Abbott, "Attending Doctors Staff Emergency Room," *Modern Hospital* 98, (June 1962): 77-78; "30 M.D.'s Unite to Meet Hospital Emergencies," *Hospital Tribune*, April 22, 1966: 13; WR Payne, "Full-Time Physician Service in the Emergency Department," *Hospitals* 38, no. 9 (November 1, 1964): 57-58, 62; CE Johnson, "Three Physicians Provide Continuous Emergency Coverage," *Hospitals* 42, no. 11 (June 1, 1968): 93-94.

239. John J. Goldman, "New 'Family Doctor' Patients With Minor Ills Jam Emergency Rooms, Drive Up Hospital Costs," *Wall Street Journal*, August 10, 1964.

240. Cyril T.M. Cameron, Edward W. Gilmore, and Edward L. McNeil, "History of Emergency Medicine in New York State," *New York State Journal of Medicine*, July 1976, 1178.

241. Robert H. Kennedy, "Editorial: A Dilemma in Emergency Department Coverage," *Journal of Trauma* 9, no. 9 (September 1969): 821-822.

242. F.J. Redding, "Physician Coverage of Hospital Emergency Departments in San Diego County, California," (bachelor's thesis, The George Washington University, 1966).

243. HT Paxton, "How E.R. Staffing Methods Are Changing," *Hosp Physician* (October 1966): 6768, 80.

figures indicate that there were approximately 2,200 emergency physicians in groups.<sup>244</sup> These leadership changes revolutionized emergency medical care. According to Mangold in 1974, “the full-time emergency physician has been one of the most significant influences in revolutionizing emergency health services and the care of the acutely ill and injured.”<sup>245</sup> This new staffing method marked the beginning of a new specialty: emergency medicine.

### **Limitations of the Alexandria Plan**

Small community hospitals were the first to hire full-time emergency physicians. By the 1970s many hospitals with 100 to 300 beds had adopted staffing methods similar to the Alexandria Plan, while few larger hospitals had adopted it.<sup>246</sup> There were several reasons for this. First, smaller hospitals relied more heavily on the support of the community. They were threatened by local competition of nearby hospitals and were increasingly concerned about the threat of lawsuits.<sup>247</sup> According to Kennedy, “administrators...in an effort to avoid litigation involving the hospital...have jumped at the opportunity to staff their ERs around the clock with licensed physicians.”<sup>248</sup> With growing concerns about litigation, community hospitals recognized the importance of establishing positive relationships with the community. The ER played a critical role in hospital-public relations because it saw a large volume of patients who arrived at a time

244. Robert H. Kennedy, “Lecture: Emergency Department Physicians: Their Capabilities, Contributions, Education, and Future Status,” *Journal of Trauma* 14, no. 10 (October 1974): 897.

245. Mangold and Frey, “The Physician and the Emergency Health Service System,” 201.

246. Robert H. Kennedy, “Emergency Department Physicians,” 896.

247. The competition between Alexandria and Fairfax hospitals serves as an example of this phenomenon.

248. Robert H. Kennedy, “Emergency Department Physicians” 897.

of urgency. Consequently, patient complaints about emergency services had a significant impact on hospital policy at the local level. The staffing method became increasingly popular because it was successful in decreasing patient complaints at Alexandria Hospital and other community hospitals throughout the country.<sup>249</sup>

It was also easier for emergency physicians to succeed in communities where local practitioners supported the use of emergency services. At a time when physicians were organizing into group practices and becoming increasingly unavailable, many physicians referred their patients to the local ER for urgent problems. Physicians organized into group practices in the same regions where emergency physicians appeared: the regions with a large percentage of paying patients, primarily in the Midwest.<sup>250</sup> Furthermore, even in a particular region, private physicians referred patients to community hospitals more often than they referred patients to large county hospitals. A study conducted in Fresno supported this trend: 64 percent of ER patients at four community hospitals were physician-referred, while only 5 percent of ER patients at a large county hospital were physician-referred.<sup>251</sup> Physician support for community hospital ERs increased patient volumes and validated the belief that the ER was a suitable place for patients to go for medical problems.

From a financial standpoint, it was easier for hospitals in middle-class communities with insured patients to adopt these new staffing methods as compared to

249. Abbott, "Attending Doctors Staff Emergency Room," 77-78; "30 M.D.'s Unite to Meet Hospital Emergencies," 13; WR Payne, "Full-Time Physician Service in the Emergency Department," *Hospitals* 38, no. 9 (November 1, 1964): 57-58, 62; CE Johnson, "Three Physicians Provide Continuous Emergency Coverage," *Hospitals* 42, no. 11 (June 1, 1968): 93-94.

250. Larry Stepnick, *From Infancy to Rebirth: Celebrating 50+ Years of Medical Group Practices and Their Contributions to Medicine* (Alexandria, VA: American Medical Group Association, 2000).

251. One of the first emergency medicine residency programs was established at the Valley Medical Center in Fresno County in the early seventies. "Airborne Ambulances on the Rise," *Medical World News* 10, no. 16 (April 18, 1969).

hospitals in poor urban areas. Alexandria, for example, had a large medically insured population. The new staffing method was adopted in many community hospitals in the Midwest, where the population was largely covered by health insurance.<sup>252</sup> In Alexandria, even with a large percentage of paying patients, the ER suffered a financial loss. In spite of this, the hospital was able to provide adequate financial incentives for the emergency physicians, who worked less and earned more than they had in private practice. Mills devised his new staffing plan, in part, because he viewed it as a desirable career. He came up with the idea after coming home “at 1 A.M. from a working day that had started that morning at seven...I remember thinking that, as a chronically tired and overworked G.P., I wasn’t being fair to myself, my family or my patients. It came to me that in emergency service, with regular hours, I would be able to practice much better medicine.”<sup>253</sup> It would have been difficult for urban hospitals to offer competitive salaries and hours to emergency physicians for two reasons: (1) these hospitals served a large percentage of uninsured patients and (2) these hospitals would have required more emergency physicians due to the higher incidence of high-severity patients, increased trauma rates, and larger patient loads.

### **LONG JOURNEY AHEAD FOR NEW EMERGENCY PHYSICIANS**

Although the Alexandria Plan was a success, emergency physicians had a long way to go before attaining specialty status. They still encountered resistance from some local practitioners who considered the ER an economic threat to their own practices, especially for non-urgent problems. These physicians fought against the expansion of

252. Rosen, “History of Emergency Medicine,” 17; Robert H. Kennedy, “The Emergency Department Situation” (lecture, meeting of the Committee on Trauma, April 22, 1966), 2.

253. Maisel, “Emergency Service: Medicine’s Newest Specialty,” 100.

emergency services. According to Dr. James Leitzell, “some – particularly older general practitioners – view ERs as economic threats. Medical staffs unite in demanding that ER physicians neither steal patients nor usurp clinical turf.”<sup>254</sup> In a 1963 edition of *Virginia Medical Monthly*, an article entitled “Our Enemy: The Emergency Room” immediately followed an article which celebrated the success of the Alexandria Plan. Its author was a private-practice psychiatrist who occasionally served in the ER. He argued that the ER should not provide care for non-urgent health problems. “Hospitals shouldn’t be permitted, under the deception of maintaining an emergency room, to lie, cheat and falsify the truth to compete with private practitioners.” He goes so far as to say that physicians’ work in the ER is “contributing to our downfall” and declares, “it’s time we wage effective warfare against our enemy: the emergency room.”<sup>255</sup>

Even the physicians who accepted the idea of full-time emergency medicine did not consider emergency medicine a specialty. Many who earned the title of “emergency physician” had minimal training and were hired directly out of internship.<sup>256</sup> In Pontiac, Michigan, physicians from all specialties filled full-time ER positions: general practitioners, internists, surgeons, obstetricians, physical therapists, anesthesiologists, and pediatricians.<sup>257</sup> According to Rosen, this validated the belief “still prevalent, that anyone can practice Emergency Medicine with time and experience.”<sup>258</sup> Furthermore, all specialist physicians had spent time in the ER during their training; this further

254. James D. Leitzell and Leonard M. Riggs “Sounding Boards, Emergency Medicine: Two Points of View,” *The New England Journal of Medicine* 304, no. 8 (February 19, 1981): 478.

255. Roswell Porter, “Our Enemy: The Emergency Room,” *Medical Economics*, July 15, 1963, 71, 74-75.

256. Rosen, “History of Emergency Medicine,” 17.

257. Abbott, “Attending Doctors Staff Emergency Room,” 78.

258. Rosen, “History of Emergency Medicine,” 17.

validated the belief that any physician could practice emergency medicine. According to Rosen, because physicians were largely unsupervised in the ER during residency, “they had no awareness of how badly they practiced Emergency Medicine as house staff.” As senior residents returning to the ER for a second time, they felt more comfortable with their specialty and “were usually able to avoid patients who fell outside of that specialty.” Many physicians believed that any specialist could practice emergency medicine simply by learning about Advanced Trauma Life Support (ATLS) and by working in the ER on a regular basis.<sup>259</sup>

In spite of its limitations, the Alexandria Plan sparked the development of a new specialty. Because the new emergency physicians were committed to the ER full-time, they were able to develop a niche of clinical expertise and to standardize medical care in the emergency room. They started to fulfill the specialty requirements by demonstrating “special knowledge” in the field and by establishing a broad base of professional support.<sup>260</sup> There was one major condition that had not yet been satisfied: obtaining the support of academic institutions and medical organizations. Although emergency physicians had taken important steps to shape the field of emergency medicine, they were still a long way from gaining formal specialty recognition.

259. *Ibid.*, 18.

260. Paul Friedmann, “The Development of New Medical Specialties,” *Current Surgery* 60, vol. 1 (January-February 2003): 100-1.

## 7

### **The Urban Teaching Hospital Resists Emergency Medicine as a Specialty**

Hartford Hospital and Yale-New Haven Hospital are urban teaching hospitals that have had emergency services since the early 1900s. Yale-New Haven Hospital became an academic institution after affiliating with Yale University School of Medicine in 1965. These hospitals did not adopt staffing methods similar to the Alexandria Plan. Instead, they redistributed the load of non-urgent visits by instituting triage systems and expanding outpatient facilities. House staff ran the ER with minimal supervision. Because urban teaching hospitals did not hire full-time emergency physicians in the sixties, the development of emergency medicine as a specialty was delayed.

#### **HARTFORD HOSPITAL**

Hartford Hospital, an urban teaching hospital in Hartford, Connecticut, attempted to reduce the patient load in the ER by implementing a triage system and ambulatory services. Faced with a rising patient load and a house staff shortage, the hospital hired medical staff to run the ER in the late sixties. The hospital started to hire emergency physicians in the seventies. Hartford Hospital delayed ER staffing modifications primarily as a result of financial limitations and the growing resistance of medical staff to full-time emergency physicians.

## Early Years

In the early 1900s Hartford Hospital provided emergency care in an accident room. The first approximation of annual visits to the accident room was fifteen hundred in 1944.<sup>261</sup> In 1956 an emergency room service was developed and an Emergency Room Committee (ERC) was formed. The ERC met on a monthly basis in order to discuss ER management and organization. The Department of Surgery was ultimately responsible for the ER but patient responsibility was shared with Department of Medicine.<sup>262</sup>

## The Emergency Room in the 1960s

In 1960 Hartford's population of 162,000 was significantly larger than Alexandria's population.<sup>263</sup> The hospital was larger than Alexandria Hospital: it had 800 beds and saw 27,000 patients in the ER per year.<sup>264</sup> As in Alexandria, the EMS system was relatively underdeveloped: it was run by family-owned businesses, and there was no system of communication between the hospital and EMS personnel.<sup>265</sup>

The ER was divided into two sections, medical and surgical. The surgical side mainly took trauma cases; the medical side took patients with abdominal and chest symptoms. According to Dr. David Crombie, a general surgeon who practiced at

261. "Histories File" (Hartford, CT: Hartford Hospital Emergency Room), in Drawer 1, The Hamilton Archives at Hartford Hospital, Hartford CT.

262. The Chairman of the Department of Surgery was also the Chairman of the Emergency Room Committee.

263. Refer to Table 3 in Appendix 1.

264. Roswell K. Brown, "Hartford Hospital Emergency Department," 26 May 1965, in Box 22, folder labeled "ERC 1962-1966," Blake Papers. Refer to Table 4 in Appendix 1.

265. H. David Crombie, MD, interview by author, New Haven, CT, October 30, 2008. Dr. Crombie completed his internship and surgical residency at Hartford Hospital in the early 1960s and spent two years in the US Navy from 1967 to 1969. He served as Director of Surgery at Hartford Hospital from 1994 to 1997.

Hartford Hospital from 1969 to 2004, the division of patients between the medical and surgical sides of the emergency room was “only loosely adhered to.”<sup>266</sup> The junior resident saw patients and “made a presumptive diagnosis” based on a medical history, physical examination, and other studies. He then called a resident from the appropriate specialty service. Although the system was “frantic to some degree...it was also quite methodical.” Crombie thought it worked well overall.<sup>267</sup>

Two surgical interns and a second-year medicine resident provided regular coverage in the ER. A fourth-year surgical resident was ultimately responsible for patient care. Interns were encouraged to seek help if necessary, starting with the assistant surgical resident, followed by the senior surgical resident and the surgical attending staff.<sup>268</sup> According to a 1960 publication *Standard Operation Procedure for the Emergency Room*, interns were required to contact the senior surgical resident for “poor risk” or “critical” patients. The senior surgical resident was also required to see all non-surgical patients who were “critical” or “questionably critical” or who stayed overnight in the ER.<sup>269</sup> The specific definitions of these terms were left to the best clinical judgment of the house staff.

266. *Ibid.*

267. *Ibid.*

268. Memorandum, “Emergency Room Medical and Surgical Coverage,” Hartford Hospital Emergency Room Committee, 1 July 1955, in Box 22, folder labeled “Emergency Room Committee, minutes and correspondence, Nov. 18, 1955 – Sept. 21, 1962,” Marlene Blake Papers, The Hamilton Archives at Hartford Hospital, Hartford, CT.

269. Philip R. Partington, *Standard Operation Procedure for the Emergency Room*, Hartford Hospital Emergency Room Committee, 21 March 1960, in Box 22, folder labeled “Emergency Room Committee, minutes and correspondence, Nov. 18, 1955 – Sept. 21, 1962,” Marlene Blake Papers, The Hamilton Archives at Hartford Hospital, Hartford, CT (hereafter cited as Box 22, folder labeled “ERC 1955-1962,” Blake Papers).

As a surgical PGY-2, Crombie was in charge of the medical and surgical sides of the ER.<sup>270</sup> Unlike some of the other surgical residents, Crombie enjoyed working in the ER and even offered to switch rotations with a fellow resident in order to spend extra time there. Even those who enjoyed emergency care were often drawn to particular cases that pertained to their specialty. Crombie, for example, viewed his ER time as an opportunity to improve his clinical acumen with regard to abdominal pain. By seeing all of the abdominal cases that passed through the ER, he had the opportunity to increase his capabilities “in delineating the wheat from the chaff in serious abdominal problems.”<sup>271</sup>

Junior attending physicians in several fields, such as general surgery, gynecology, and internal medicine, covered the ER on a rotating basis. Specialist physicians were available for consultations in internal medicine, pediatrics, surgery, neurosurgery, orthopedics, and other medical and surgical divisions.<sup>272</sup> According to a 1959 pamphlet entitled *The Emergency Room Organization*, medical and surgical attending physicians were assigned to the emergency room on a rotating basis in order to provide “direct supervision of the care rendered any and all patients by members of the House Staff.”<sup>273</sup> This direct supervision did not occur regularly; physicians came to the ER only as needed by the house staff. As a resident, Crombie saw these physicians “a great

270. Prior to 1970, surgeons completed an internship year followed by a five-year residency program. Effective 1 July 1975, internship became the first year of an integrated residency program. Thus, a PGY-2 before 1970 would be the equivalent of a PGY-3 in today’s system.

271. Crombie, interview.

272. Minutes of the Emergency Room Committee, Hartford Hospital Emergency Room Committee, 21 December 1956, in Box 22, folder labeled “ERC 1955-1962,” Blake Papers (hereafter cited as Minutes, Hartford Hospital ERC).

273. *The Emergency Room Organization*, Hartford Hospital ERC, 1959, in Box 22, folder labeled “Emergency Room Committee, minutes and correspondence, Nov. 18, 1955 – Sept. 21, 1962,” Blake Papers.

deal...they would come down both for ambulatory surgical issues, like lancing a boil, evacuating a thrombosed hemorrhoid, putting in a few stitches...and they would also come down for things that had the potential of being admitted for an operation or for inpatient...care." He recalls, "If something needed an urgent intervention, we'd just holler to the next level up and get help down there, and you could always get help."<sup>274</sup> Although attending physicians did not provide full-time supervision, they were accessible.

### **Patient Use of the Emergency Room Increases**

Several factors contributed to increased patient volumes in the ER. First, as family physicians became less available, Hartford's emergency call system for doctors was not unsuccessful. The Hartford County Medical Society abandoned it 1964 and recommended that patients go to the ER of the nearest hospital if they needed immediate medical attention.<sup>275</sup> Consistent with the national trend, Hartford Hospital advocated for a patient's right to emergency medical care and accepted all patients who entered the ER. *Standard Operation Procedure for the Emergency Room* stated, "No patient requiring emergency treatment shall under any circumstances be transferred to another hospital before receiving such treatment."<sup>276</sup>

274. Crombie, interview.

275. Arthur C. Unsworth, *Statistics and Matters for Consideration of Emergency Room Committee*, 16 February 1966, in Box 22, folder labeled "Emergency Room Committee, minutes and correspondence, Oct. 19, 1962-Sept. 1, 1966," Blake Papers (hereafter cited as Box 22, folder labeled "ERC 1962-1966").

276. Philip R. Partington, *Standard Operation Procedure for the Emergency Room*.

ER visits increased in spite of a population decrease. Hartford's population decreased by 11 percent from 1950 to 1970 as people migrated from cities to suburbs.<sup>277</sup> In spite of this, emergency visits increased steadily from 3,000 to 18,000 in the years from 1944 to 1955. Emergency visits tripled in the decade up to 1963, when there were a total of 36,000 visits.<sup>278</sup> There was a substantial increase in non-urgent visits. According to ERC Chairman Dr. Robert Barry approximately 48 percent of visits to the ER were not "true" emergencies, and half of these could have been diverted elsewhere by appropriate triage.<sup>279</sup> A surgical house staff shortage in July 1962 exacerbated the problem of patient overload.

### **Hospital Pressured to Improve Emergency Services**

In 1961 physicians discussed the lack of supervision in the ER at several ERC meetings. They remarked on the growing number of medical cases in the ER, which posed a particular problem because there was not adequate medical coverage there. Many staffing methods were proposed. Some physicians argued that the house staff should continue to run the ER; others recommended that physicians staff the ER; still others argued for creating a separate ER staffed on a full-time basis by younger attending physicians from the surgical and medical departments.<sup>280</sup> There was a debate as to whether the ER should operate as a separate department or as a section of the

277. Refer to Figure 5 and Table 3 in Appendix 1.

278. Shortliffe, Hamilton, and Noroian, "The Emergency Room and the Changing Pattern of Medical Care," 21. Refer to Figure 6 and Figure 9 in Appendix 1.

279. Roswell K. Brown, "Hartford Hospital Emergency Department," 26 May 1965, in Box 22, folder labeled "ERC 1962-1966," Blake Papers.

280. Minutes, Hartford Hospital ERC, 15 December 1961, in Box 22, folder labeled "ERC 1955-1962," Blake Papers.

outpatient department. In 1962 the ERC was focused on the transition into a new, expanded facility. To complicate matters, the ER was operating at a deficit of approximately \$75,000 a year. Although the ERC discussed at length possible solutions to patient overload, they did not implement any significant changes. They did add an additional intern for night coverage, for a total of three interns, despite concerns that the use of interns to run the ER might “endanger...the hospital accreditation.”<sup>281</sup>

The ERC had still not resolved the problem of inadequate staffing by 1964. At a 1965 meeting it was brought to the committee’s attention that sixty patients had left the ER in October without having been seen by a doctor. The medical staff expressed growing concerns among medical staff that patient care was being compromised. Patients sent letters to Hartford Hospital complaining about the inadequate care and the long wait times in the ER.<sup>282</sup> In an annual report published in September 1966, the inadequacy of patient care in the ER was brought to the attention of the entire hospital. “This minor representation of the Staff in responsibility, administration, and participation has resulted in unsatisfactory handling of the Emergency Room patient, from the view point of the patient and the Staff and the Administration, and has resulted in repeated investigations and reports regarding the Emergency Room.”<sup>283</sup>

In 1965 Dr. Roswell Brown, the Associate Director of the Field Program of the Committee on Trauma of the ACS, evaluated the ER favorably in spite of staffing

281. Minutes, Hartford Hospital ERC, 20 July 1962, in Box 22, folder labeled “ERC 1955-1962,” Blake Papers.

282. Minutes, Hartford Hospital ERC, 17 December 1965, in Box 22, folder labeled “ERC 1962-1966,” Blake Papers.

283. Arthur C. Unsworth, *Annual Report of the Emergency Room Committee*, Hartford Hospital ERC, 1 September 1 1966, in Box 41, folder labeled “Emergency Room Committee Annual Reports, 1958-1966,” Blake Papers (hereafter cited as Box 41, folder labeled “ERC Reports 1958-1966”).

problems and patient complaints.<sup>284</sup> According to Brown, “This is by far the best emergency department that I have seen.”<sup>285</sup> By this time the Committee on Trauma of the ACS had surveyed several hundred hospital emergency departments.<sup>286</sup> Despite patient dissatisfaction and the lack of attending supervision, Hartford Hospital’s ER was better than many of the emergency departments across the country. This was primarily due to (1) the strength of its specialty services and their frequent participation in emergency consultations and (2) the support from interns and residents, who worked at only 20 percent of hospitals in the United States.<sup>287</sup>

### **Hartford Hospital Seeks to Improve Emergency Services**

In 1966 several changes in ER management occurred. Hartford Hospital removed the ER from the Department of Surgery and formed a new ERC with more authority “to promote policies and practices in operation of this facility to insure the most efficient operation obtainable.”<sup>288</sup> Dr. Arthur C. Unsworth, chairman of the ophthalmology department from 1946 to 1970, was appointed chairman of the new ERC. As the new chairman Unsworth visited several nearby hospitals in order to examine their ER staffing methods. His findings indicated that the Alexandria Plan had spread to small

284. Roswell K. Brown, “Hartford Hospital Emergency Department,” 26 May 1965, in Box 22, folder labeled “ERC 1962-1966,” Blake Papers.

285. *Ibid.*

286. Skudder, McCarroll, and Wade, “Hospital Emergency Facilities and Services,” 44-50.

287. Maisel, “Emergency Service: Medicine’s Newest Specialty,” 100.

288. The committee included the Directors of the Departments of Anesthesiology, Medicine, Neurosurgery, Obstetrics-Gynecology, Ophthalmology, Orthopedics, Otolaryngology, Pathology, Pediatrics, Psychiatry, Radiology, Surgery and Urology. See Arthur C. Unsworth, *Annual Report of the Emergency Room Committee*, Hartford Hospital Emergency Room Committee, 1 September 1966, in Box 41, folder labeled “ERC Reports 1958-1966,” Blake Papers.

community hospitals but not to urban teaching hospitals. At Grace-New Haven Hospital, Dr. E. Richard Weinerman had instituted a triage system; all of the house officers in the ER were above the intern level but there was no attending supervision.<sup>289</sup>

Two small towns in Connecticut adopted staffing methods similar to the Alexandria Plan. Norwalk Hospital in Norwalk, Connecticut, had recently employed five doctors on a fixed salary basis to run the ER. Danbury Hospital, a 220-bed hospital in Danbury, Connecticut, hired three full-time physicians who had relinquished their practices in order to manage the ER in 1966. The three original physicians, like those in Alexandria, had been in practice for twenty years. Like the Alexandria physicians, they were not able to admit patients or to continue in private practice. The doctors worked forty-four hours a week, with two doctors on during the day and one at night. House staff worked in the ER on a moonlighting basis.<sup>290</sup> Both Norwalk and Danbury hospitals adopted variations of the Alexandria Plan around the time when the AMA published *Emergency Department: A Handbook for Medical Staff* by the AMA.

After Unsworth presented his findings, the ERC initiated administrative and structural changes. The ER was combined with the Outpatient Department to form the Department of Ambulatory Services. A new Director of Ambulatory Services ran the department with his two assistant directors: one for surgical services (primarily the ER) and one for the medical services (primarily the outpatient facilities).<sup>291</sup> Seven physicians from the staff worked on an hourly basis to facilitate this transition. Dr. Philip Cornwell, Chairman of the Medical Advisory Board at Hartford Hospital, believed that the

289. Arthur C. Unsworth, *Report on Visits to Emergency Rooms in Other Hospitals*, 15 April 1966, in Box 22, folder labeled "ERC 1962-1966," Blake Papers.

290. *Ibid.*

291. *Ibid.*

integration of the ER and outpatient facilities was important because patients were increasingly using the ER for medical and non-urgent visits. The goal was to provide “administrative coordination” of these facilities in order to streamline efficiency in patient care.<sup>292</sup> The ambulatory services were also critical component of the solution to patient overload. With the opening of new ambulatory services in 1969 under the direction of Dr. Howard Wetstone, the hospital administrators hoped patients would use this facility rather than the ER for primary medical care.

Based on the model at Yale-New Haven Hospital, the ERC hired a triage officer to see patients and determine disposition in 1966. A committee vote favored the triage officer be an attending physician rather than a house officer.<sup>293</sup> There were several reasons for this, but the need for direct supervision of house staff was not one of them.<sup>294</sup> In spite of this, a surgical resident was appointed as the triage officer and as acting director of the ER. Former ERC chairman Dr. Robert Barry indicated that there were still only three house officers, two interns and a third year resident on duty to handle an average of 130 patients a day.<sup>295</sup> The primary goal of triage was to refer patients to ambulatory care facilities for non-urgent visits and thus to decrease the patient load in the ER.

292. *Ibid.*

293. Minutes, Hartford Hospital ERC, 3 June 1966, in Box 22, folder labeled “ERC 1962-1966,” Blake Papers.

294. The reasons included (1) the indoctrination of the house staff, nurses, and non-medical personnel (2) gathering of information which might be important in determining future policies (3) elimination of unnecessary waiting of non-urgent patients and (4) supervision of all ER functions, with recommendation of changes or problems of personnel to a body with sufficient authority to get things done. See Minutes, Hartford Hospital ERC, 3 June 1966, in Box 22, folder labeled “ERC 1962-1966,” Blake Papers.

295. Minutes, Hartford Hospital ERC, 14 February 1966, in Box 22, folder labeled “ERC 1962-1966,” Blake Papers.

By establishing a triage system, expanding the power of the ERC, and providing additional intern coverage, Hartford Hospital attempted to improve the quality and efficiency of emergency services. In spite of these efforts, ER visits continued to increase at a relatively constant rate through 1973.<sup>296</sup> Although the ER was considered one of the best in the country, it lacked clearly documented standards for patient care. The two formal publications of the ERC, *The Emergency Room Organization* and *Standard Operation Procedure for the Emergency Room*, established vague standards at best and left most of the important decisions up to the clinical judgment of inexperienced and overwhelmed house staff. The large amount of patients who left the ER without being seen by a physician clearly indicates these standards were not well enforced or simply were not realistic given the daily patient load.

### **Emergency Medicine: On the Brink of Acceptance at Hartford Hospital**

In 1968 residents' resistance to work in the ER exacerbated the severe house staff shortage. According to Crombie, residents in the other services, including surgery, orthopedics, pediatrics, internal medicine, and obstetrics and gynecology, did not have sufficient manpower to provide adequate ER coverage.<sup>297</sup> Dr. Painter, an attending physician at Hartford Hospital and a member of the ERC, felt that "the ER problem has reached the point where we can no longer depend on the surgical interns and residents or the medical interns and residents to take the entire load. It had reached the point where each service has got to take care of its own problems, and if it can't be done with

296. Refer to Figure 6 in Appendix 1.

297. Crombie, interview.

available house staff, then it must be done with the attending staff.”<sup>298</sup> The medical staff developed a roster so that members contributed their services to cover the ER for seventy-two hours a week. For the first time, the medical staff assumed direct care of patients in the ER.

Attending physicians became increasingly visible in the ER in the seventies. An Emergency Room Corporation was formed in 1970 in order to hire qualified physicians to run the ER. In the seventies Crombie worked as a general surgeon in Hartford and as a part-time ER physician. According to Crombie, attending physicians started to participate more frequently in patient care in the seventies. They performed surgical repairs of lacerations and primarily cared for private-paying patients.

I would go to the emergency room and sit there, and when patients came in that were paying patients, I would...introduce myself and say, ‘Hartford Hospital has asked me to be here to cover the emergency room.’ This was different than the old days, where...my predecessors were called by the house staff...you could see that as a shift, or the ratcheting up of the competency of the individuals doing the emergency care.<sup>299</sup>

Hartford Hospital started hiring emergency physicians in the seventies in order to provide supervision of house staff in the ER.<sup>300</sup> In spite of this, according to Wetstone, “one must note that the general feeling of the Medical Staff has, to date, been against full-time Emergency Room physicians.”<sup>301</sup> This was primarily due to the inefficiency of emergency physicians who intercepted patient care and often delayed patient evaluation; it was also due to the transient nature of the emergency physician. Surgeons

298. Minutes, Hartford Hospital ERC, 14 February 1966, in Box 22, folder labeled “ERC 1962-1966,” Blake Papers.

299. Crombie, interview.

300. *Ibid.*

301. Howard J. Wetstone, *A Proposal for Dealing with the Primary Care Medical Problem in the Emergency Room*, 1974, in Box 2, folder labeled “Medicine,” Ralph F. Reinfrank Papers, The Hamilton Archives at Hartford Hospital, Hartford, CT.

became frustrated with emergency physicians because they often took longer than the surgeons to diagnose surgical conditions. This ultimately caused delays and inconveniences for the surgeons. This frustrated Crombie and his surgical colleagues on several occasions.

The emergency medicine doctors were not going to serve as simply a gateway to a specialist, without putting their intellect and challenging themselves to figure out what was wrong. We all objected to that...if I got a call at 6:15P.M. from an emergency doctor in the emergency room, saying that he had a patient down there with appendicitis, and I learned that the patient came in at 1:15PM, this was now five hours earlier that the patient had been evaluated, and now I was going to call my kids and my wife and say instead of taking out an appendix at 2:30 or 3:00P.M. I'm going to be here until 9 doing this...I was infuriated. But the way the emergency room doctors felt was, if you just want someone to...triage, then you can do that with any kind of mid-level practitioner...so that was a source of conflict between the specialists and the emergency medicine doctor. And that difficulty hasn't gone away.<sup>302</sup>

Many surgeons would have preferred to use their own house staff in order to "accomplish all of those studies under our own egress and then pick the timing of when an operation would be right and so on."<sup>303</sup>

The transient nature of the emergency physician made it difficult for local physicians to establish long-term, trusting relationships with them. According to Crombie, "There would be situations where...those of us in practice would get accustomed to a particular emergency room doc and we would have a nice rapport on the telephone and so on...and that individual would understand where we're coming from - and then that individual would move on."<sup>304</sup> The transient nature of the emergency physician resulted in severed relationships with local practitioners. Unlike Alexandria Hospital, Hartford Hospital did not have a core group of emergency

302. *Ibid.*

303. *Ibid.*

304. Crombie, interview.

physicians who worked to develop long-term relationships in the community. It was even more difficult for emergency physicians to establish relationships because the hospital and the patient population in Hartford were significantly larger than in Alexandria. Although local surgeons were frustrated with emergency physicians, they were not as concerned about patient stealing as the surgeons had been in Alexandria. The emergency doctors at Hartford Hospital did not perform surgery. Their greatest frustrations were a result of delays in communication and the transient nature of the emergency physician.

The resistance among the medical faculty to the idea of emergency physicians was common at academic hospitals across the country. Mills recognized that this resistance would be an obstacle to gaining specialty recognition. "Although we were well respected in our own backyards, we became painfully aware of the pigeons on our status among the organizations of medicine...Very senior surgeons debated us on basic considerations: 'Doesn't the emergency department just do triage? Aren't you just talking about emergency department directors? You don't mean you'd work 11PM to 7AM? You don't mean a full-time job, do you?' And so on."<sup>305</sup>

The staffing changes at Hartford Hospital contributed to the development of emergency medicine as a specialty. Attending staff started supervising the ER in the late sixties, and emergency physicians started working in the ER in the early seventies. The idea of using attending physicians to staff the ER was important: it marked the beginning of support for emergency medicine in an academic setting. In spite of this progress, medical faculty and local physicians still demonstrated strong resistance to

305. Mills, "Emergency Medicine, 1947-1987," 85.

emergency physicians. Emergency physicians still had a long way to go before gaining acceptance at academic institutions.

## **YALE-NEW HAVEN HOSPITAL**

Yale-New Haven Hospital, an urban academic institution in New Haven, Connecticut, used similar approaches to those at Hartford Hospital to improve emergency services: it established a triage system and ambulatory care facilities. As a result, annual ER visits stabilized until 1967 when they started to increase more dramatically.<sup>306</sup> Unlike Hartford Hospital, Yale-New Haven Hospital did not hire emergency physicians in the early seventies. Instead, they relied on senior house staff to run the ER. Although this model did not persist, it was adequate for teaching hospitals in the sixties.<sup>307</sup> Academic institutions across the country used variations of this model and relied on the strength of their house staff and consultation services to deliver high quality care the ER.

### **Early Years**

The earliest information about the accident room at New Haven Hospital dates back to 1923 when 1,016 patients received treatment. In the thirties New Haven Hospital had 24-hour emergency services run by a reserve staff of fifty-five physicians who resided in the hospital on call. A hospital pamphlet discussed the importance of emergency services in an urban environment. It stated, "No one is immune from

306. Refer to Figure 6 and Table 4 in Appendix 1.

307. In the eighties, Yale-New Haven Hospital started to provide occasional supervision of house staff in the emergency department. During the seventies and eighties, many other academic universities started to provide attending supervision and establish residency programs.

accident, particularly in a city, where hazards are multiplied by congestion of population and the complexity of machinery necessary for transportation and for the maintenance of factories, shops, and homes. Nor can constant vigilance eliminate, though it may lessen, the possibility in any large city of epidemics, fires, and other catastrophes in which many lives are endangered."<sup>308</sup> It emphasized the importance of an "alert, efficient emergency service with modern equipment for treatment and diagnosis."<sup>309</sup>

### **The Emergency Room in the 1960s**

Yale-New Haven Hospital had 717 beds and ran the largest outpatient and emergency services in Connecticut. On 22 March 1965, the hospital established a new affiliation with Yale University School of Medicine and changed its name to Yale-New Haven Hospital (YNHH). It cared for approximately 15 percent of welfare patients hospitalized in the state and provided 75 percent of emergency and outpatient care for the greater New Haven region.<sup>310</sup> The ER was located on the ground floor of the hospital and had full-time medical, nursing, clerical, and maintenance staff.<sup>311</sup> There were three emergency rooms: medical, surgical, and pediatric.

Unlike Hartford Hospital, ER residents were above the intern level. Three assistant residents were on duty from surgery, medicine, and pediatrics.<sup>312</sup> Other

308. *Emergency Service: Number ten in a series of leaflets about the New Haven Hospital*, New Haven Hospital, 1932, Yale-New Haven Hospital Archives, New Haven, CT (hereafter cited as YNHH Archives).

309. *Ibid.*

310. *Grace-New Haven Community Hospital Annual Report 1961-1962*, 1962, YNHH Archives.

311. Weirnerman, "Changing Patterns in Medical Care," 5.

312. Unsworth, *Report on Visits to Emergency Rooms in Other Hospitals* (see chap. 3, n. 340).

physicians were available as needed: on-call residents from specialty services, supervising senior staff members, and a panel of community and faculty physicians who provided follow-up care for private patients.<sup>313</sup> Based on a nurse's initial triage, patients were evaluated by the admitting house officer in medicine, surgery, or pediatrics.<sup>314</sup> As with Hartford Hospital, chief residents and attending physicians came down to the ER as needed.

According to Dr. Louis G. Weld, Chairman of the Department of Medicine, it was beneficial to use senior house staff in the ER because they had more clinical experience than junior house staff and were better able to recognize the truly sick patients who might need to be admitted.<sup>315</sup> Dr. Richard Weinerman, the Director of Ambulatory Services at Yale-New Haven Hospital from 1962 to 1968, argues that interns are not qualified to provide ER coverage.

Interns and nurses just finishing their training had no essential role in the emergency service without direct and considerable supervision. This I think was of some surprise to many, but there was a strong feeling that emergency services are too complex, too fast moving, too difficult for the very young trainees without very careful supervision. The backing of the intern by the resident staff must be immediate and scheduled. The ultimate responsibility never leaves the hospital medical staff for supervision, direction and standards. A formalized and immediately available on-call system to back up the resident and interns is necessary.<sup>316</sup>

The idea that interns were not qualified to provide emergency care was a "surprise" to medical faculty who believed that emergency care was straightforward enough to be

313. Weinerman, "Changing Patterns in Medical Care," 5.

314. Jules V. Coleman and Paul Errera, "The General Hospital Emergency Room and Its Psychiatric Problems," *American Journal of Public Health* 53, no. 8 (August 1963): 1296.

315. *Yale-New Haven Hospital Annual Report 1972*, Office of Information and Development, February 1973, YNHH Archives, 7.

316. *Hospital Emergency Services*, 63.

handled by residents at the beginning of their training. This belief predominated at many academic institutions in the sixties.

Dr. Richard Stahl, who completed his surgical residency at Yale in the late seventies, mentioned one of the critical elements of success in the ER: collaboration with nurses and fellow house staff. He says, “you would be...desperate together...consulting on each other” and there was a strong “atmosphere of camaraderie...you had to count on each other.”<sup>317</sup> Although patient care in the ER could be challenging and overwhelming, residents succeeded because they had support of other residents, nurses, attending physicians, and specialty services.

Many residents had also benefited from experiences in military medicine that prepared them well for emergent patient care. Because the physician draft lasted until 1972, many senior house staff members served in the military during residency. Dr. Richard Lee, an internist who was responsible for the medical outpatient department, clinics, and ER in the early seventies, noted that the clinical knowledge residents gained during military service helped them diagnose and treat emergency patients. He says, “a lot of the senior residents between first and second years had been in the [military] service, so the senior house staff were older and...had a lot more experience under their belt.”<sup>318</sup>

317. Richard Stahl, MD, interview by author, New Haven, CT, November 11, 2008. Dr. Stahl, a plastic surgeon, completed his general surgery residency at Yale-New Haven Hospital in the late seventies and returned as an assistant professor at the Yale University School of Medicine in 1983. He served as assistant medical director of the ER in surgery for nine years and currently serves as associate chief of surgery at Yale-New Haven Hospital.

318. Richard Lee, MD, telephone interview by author, November 12, 2008. Dr. Lee completed his residency in internal medicine in the mid-sixties at Yale-New Haven Hospital and currently practices in Buffalo, New York.

## Patient Use of the Emergency Department Increases

Patient use of the emergency department increased at Yale-New Haven Hospital as a result of the changing nature of the physician-patient relationship and population shifts. The higher patient loads on weekends, consistent with national trends, indicated patients used emergency services for non-urgent conditions when private physicians were unavailable.<sup>319</sup> Approximately one-third of patients arrived on Saturday and Sunday. The distributions were highest in the summer months when physicians tended to take vacation and were lowest in the winter months.<sup>320</sup> There was an increasing trend from night to morning ER visits from 1959 to 1964. These data may indicate an increase in elective visits for non-urgent problems.<sup>321</sup> Weinerman also found that the majority of patient visits (56 percent) were non-urgent, while only 6 percent of visits were emergent and 36 percent were urgent.<sup>322</sup>

Population mobility also led to increased patient visits. In a 1964 study Weinerman found that 47 percent of ER patients had been at their current address for less than two years and that the proportion of non-urgent cases declined as the years of

319. Skudder, McCarroll, and Wade, "Hospital Emergency Facilities and Services," 44-50.

320. Refer to Figure 8 in Appendix 1. As a result of improved transportation by the Connecticut Turnpike, population increases were expected around Milford and the Guilford-Madison area in the sixties, but this had a minimal impact on patient load because 90 percent of ER patients were from New Haven. See *Greater New Haven Regional Hospital Council*, 28 November 1962, in Box 1, Series 1, Folder 10 labeled "New Haven Area Hospital Planning," Snoke Papers, 2; Weinerman, "Changing Patterns in Medical Care," 8.

321. Weinerman, "Changing Patterns in Medical Care," 7.

322. S.K. Kwass, "Social Class Difference in Emergency Room Attendance," (bachelor's thesis, Yale University, 1958); MD Lebowitz et al., "Socioeconomic Analysis of the Alameda County Health Department Jurisdiction," *American Journal of Public Health* 54, no. 11 (1964): 1876.

residential tenure increased.<sup>323</sup> This indicates that people typically used the ER after relocating. Population migration also contributed to increased ER visits. The population in New Haven decreased in the sixties.<sup>324</sup> Because many physicians migrated to the suburbs, the urban poor were left without physicians.<sup>325</sup> According to Weinerman, urban populations consisted primarily of “economically dependent, socially isolated, minority population groups – often recent arrivals in the old communities, with remote connections to the ‘usual’ pattern of private medical care.”<sup>326</sup> In New Haven, 85 to 90 percent of ER patients were in the lowest socioeconomic groups.<sup>327</sup> The population using the ER was primarily composed of young, male, non-married, central urban, and relatively poor individuals.<sup>328</sup>

As a result of population shifts and the changing nature of the physician-patient relationship, Yale-New Haven Hospital experienced dramatic increases in ER visits. From 1953 to 1963, hospital visits increased by 27 percent and clinic visits increased by 29 percent – but ER visits increased by 76 percent.<sup>329</sup> The number of ER visits doubled from forty thousand to eighty thousand in the 1960s.<sup>330</sup>

323. E. Richard Weinerman et al., “Yale Studies in Ambulatory Medical Care: V. Determinants of Use of Hospital Emergency Services,” *American Journal of Public Health* 56, no. 7 (July 1966): 1043, 1047.

324. Refer to Figure 7 and Table 3 in Appendix 1.

325. Jules V. Coleman, “Psychiatric Studies of Patient Needs in Emergency Services of General Hospitals,” *Medical Care* 5, no. 4 (July-August 1967): 255.

326. Weinerman, “Changing Patterns in Medical Care,” 3.

327. Coleman, “Patient Needs in Emergency Services,” 255.

328. E. Richard Weinerman and Herbert R. Edwards, “Yale Studies in Ambulatory Medical Care: ‘Triage’ System Shows Promise in Management of Emergency Department Load,” *Hospitals* 38, (November 16, 1964): 55-62.

329. *Ibid.*

330. Refer to Figure 6, Figure 9, and Table 4 in Appendix 1.

Based on Weinerman's studies, the poor population did not use the ER more frequently for non-urgent conditions than the non-poor. Even in the highest of income groups (above \$10,000 per year), 59 percent of patients were non-urgent.<sup>331</sup> This was likely due to increasing reluctance of patients to contact their regular physicians for health problems. Only 41 percent of patients who claimed to have a regular physician sought his help initially.<sup>332</sup> In 1962 one-third of patients claimed to use the emergency service for all medical care needs, one-third were entirely self-referred, 7 percent were referred by the hospital, and 20 percent arrived under "classical emergency auspices." Unlike Alexandria, where many local practitioners referred their patients to the community ER, only one-tenth of YNHHS ER patients were physician-referred.<sup>333</sup>

### **Advancements in Pre-Hospital and Coronary Care**

Yale-New Haven Hospital lagged behind other institutions in pre-hospital care. The Connecticut Ambulance Association and Yale-New Haven Hospital jointly sponsored a twelve-week ambulance driver course in 1967. A citywide disaster drill was completed in 1968 in order to test the coordinated efforts of police, fire, civilian defense, and the emergency facilities of Yale-New Haven Hospital, the Hospital of St. Raphael, and the Veterans Administration Hospital in West Haven. Yale-New Haven Hospital

331. Weinerman et al., "Yale Studies in Ambulatory Medical Care: V. Determinants of Use of Hospital Emergency Services," 1047.

332. *Ibid.*, 1045.

333. Weinerman, "Changing Patterns in Medical Care," 8.

joined twenty other Connecticut hospitals in direct line radio network for communicating disaster and administrative information in 1968.<sup>334</sup>

There were developments in coronary care. The Coronary Care Unit was established in 1966. Up to 1 October 1967, there were 189 admissions to the unit, with 49 deaths, representing an overall mortality rate of 25.9 percent. The mortality rate for these patients in acute general hospitals without coronary care units was higher, approximately 30 percent.<sup>335</sup>

### **Growing Concerns About the Non-Urgent Patients**

The information disbursed within the hospital about the ER was laudatory. An annual report in 1967 highlighted the excellence of Yale New Haven Hospital's emergency medical care.

The quality of emergency treatment was dramatically illustrated one foggy, tragic night last December when three Yale students were admitted, all near death from multiple injuries received when their car collided with a truck. Despite the fact that the emergency suite was already crowded with victims of an earlier accident and with other patients seeking attention, two surgical teams were assembled within a very short time to perform delicate neurosurgical operations on the students. Unfortunately, one young man was too badly injured to be saved, but the other two survived – and only because this Hospital had the facilities and the personnel trained to cope with the situation. The student who did not survive has made a place in history as the donor of the first kidney transplant to take place in Connecticut.<sup>336</sup>

This event was handled well because the surgical residents recognized the critical nature of the situation and adequately prepared for the accident victims. Although this was

334. "Highlights of the Year from October 1, 1967," in *Yale-New Haven Hospital Annual Report 1968* (New Haven, CT: Whitney Curtis Inc, 1967), YNH Archives, 17.

335. Courtney C. Bishop, "Report of the Chief of Staff," in *Yale-New Haven Hospital Annual Report 1967* (New Haven, CT: Whitney Curtis Inc, 1967), YNH Archives, 12.

336. Charles H. Costello, "Report of the President," in *Yale-New Haven Hospital Annual Report 1967* (New Haven, CT: Whitney Curtis Inc, 1967), YNH Archives.

clearly not a direct result of excellent emergency services, it reflected the prowess of the surgical teams who administered patient care.

In spite of this success story, the medical staff recognized the problem of increasing use of the ER for non-urgent medical visits. Dr. Sherwin B. Nuland, a surgeon at Yale-New Haven Hospital, drew a distinction between the emergency patient, who was treated well in the ER, and the non-urgent emergency *room* patient, who was not adequately cared for in the ER.

The kind of skill we can bring to the emergency *patient* in this institution is an extraordinary phenomenon. Anyone who has been present when five or six badly injured persons are brought in from an automobile accident, has seen highly skilled house officers seemingly come out of the walls and begin to help those patients, will never go away saying that the emergency *patient* in the hospital is not well taken care of. It's the emergency *room* patient that worries me because he's often the fellow who shouldn't really be there in the first place. How this problem will ever be solved, I don't know. Obviously many people are working on it. But there has to be some way to differentiate between the *emergency* patient and the emergency *room* patient. I'd like to be able to agree with Dr. Bishop that we give a consistently high level of care to all of the people coming in, but I don't think we do.<sup>337</sup>

Dr. Nuland attributed this, in part, to the residents' enthusiasm in treating the emergency patient, as opposed to the emergency room patient.

One reason is that our house staff in that service is attuned to the *emergency* patient. In the course of their training, this is the only sustained contact they're likely to have with true emergencies. It's exciting. They're young. There are all kinds of other psychological reasons for their being oriented in this manner. And they really go into action for the emergency patient. On the other hand, when they're faced with a patient who has come to the emergency room for attention because he doesn't have any other place to go, the house officers on duty are much less interested. They're not as concerned with the psycho-social problems of chronic illness at that time of their life, although they may become so later on in their careers. But as things stand now, we have to face the fact that the emergency *patient* will get absolutely supreme care in this institution, and the emergency *room* patient will not.<sup>338</sup>

337. *Yale-New Haven Hospital Annual Report 1970*, Office of Information and Development, February 1971, YNHH Archives, 7.

338. *Yale-New Haven Hospital Annual Report 1970*, Office of Information and Development, February 1971, YNHH Archives, 7.

This distinction was an important one, and it may have been one of the major factors that permitted Yale-New Haven Hospital to continue to run its ER with a focus on the urgent rather than the non-urgent patient. In most cases, the house staff was effective in differentiating urgent from non-urgent patients and seeking assistance for those who needed immediate care.

### **Financial Troubles Limit Capacity for Change**

The financial problems of the ER were mentioned in several of Yale-New Haven Hospital's records in the early 1960s. In 1959 emergency room operating deficits totaled \$107,000.<sup>339</sup> A 1961 report indicated the city had not paid the hospital for emergency or outpatient services since March 1958.<sup>340</sup> The costs in excess of collections for care of 'medically indigent' patients included \$291,000 for admitted patients, \$431,000 for outpatient clinics, and \$878,000 for the emergency room in 1962.<sup>341</sup>

The expenses of the Hospital of St. Raphael and the Yale-New Haven Hospital exceeded their income by \$7.4 million from 1957 to 1967. The net losses in the outpatient and emergency departments for the two hospitals combined increased from \$814,000 to \$1.3 million from 1962 to 1966. Due to financial losses, the hospital was forced to use its supplemental income from endowments and divert \$6.1 million from depreciation

339. *Ibid.*, 3.

340. *The Financial Problems of the Hospital*, 23 February 1961, in Box 1, Series 1, Folder 4 labeled "Hospital Financing, Cost, and Reimbursement," Snoke Papers, 5.

341. Albert W. Snoke, *A Report to the Community on the Hospital Care of the Indigent*, Grace-New Haven Hospital, 25 September 1963, in Box 1, Series 1, Folder 4 labeled "Hospital Financing, Cost, and Reimbursement," Snoke Papers, 2.

reserves in order to finance operating deficits alone.<sup>342</sup> The uninsured population in outpatient clinics and the ER were cited as the “major cause of the hospital’s deficits.”<sup>343</sup> Because the ER was a financial drain, the hospital had no incentive to finance improvements in emergency facilities, equipment, or patient care. The Connecticut Medicaid program that began in 1966 helped ease the financial burden on the hospital, but the program maintained a low-income limit of \$3800 for a family of four; 90,500 families in the state were eligible for the program.<sup>344</sup> Medicaid did not cover a large portion of young workers who exceeded the income limit. Consequently, the emergency room continued to operate at a financial loss.

### **Dr. Snoke Seeks to Improve Emergency Services**

Dr. Albert Snoke, the CEO of the hospital from 1946 to 1967, recognized the need for improvements in emergency care. He realized that the emergency service was “just as bad and traditional in the 1960’s as...in the 1930’s when I was a medical student. I became more and more aware of the deficiencies in patient care, organization, and in finances.”<sup>345</sup> Snoke made several attempts to fix the problem. He hired a full-time surgeon to run the ER in the early sixties, but the surgeon “wasn’t satisfied with administering and missed surgery.”<sup>346</sup> Snoke then hired retired physician Dr. Herbert

342. *Ibid.*, 3.

343. Albert W. Snoke, *A Report to the Community on the Hospital Care of the Indigent and the Medically Indigent*, Yale-New Haven Hospital, 20 April 1967, in Box 1, Series 1, Folder 4 labeled “Hospital Financing, Cost, and Reimbursement,” Snoke Papers, 4.

344. Robert Stevens and Rosemary Stevens, *Welfare Medicine in America: A Case Study of Medicaid* (Somerset, NJ: Transaction Publishers, 2003), 100.

345. Albert Snoke to Roderick Hegg, 23 September 1965, in Box 2, folder labeled “Ambulatory Services,” Snoke Papers.

346. Snoke, *Hospitals, Health, and People*, 117.

Edwards and nurse Carolina Falls to run the ER.<sup>347</sup> This was “quite successful” because Edwards and Falls communicated well with patients and explained reasons for delays in their care.<sup>348</sup> This ultimately led to increased patient satisfaction.

Snoke finally decided to create a new position: Director of Ambulatory Services. He hired Dr. E. Richard Weinerman to fill this position on 1 July 1962. Weinerman had joint responsibilities to the medical school and hospital and provided a single administrative head for the hospital’s outpatient and emergency services, the medical school’s private ambulatory services, and the medical school’s office of professional services.<sup>349</sup> Snoke appointed local pediatrician Dr. Jerome S. Beloff as director of the emergency services on 1 March 1965, replacing Edwards.<sup>350</sup> Beloff served as the director of the ER, personnel health, and the outpatient department, which consisted of sixty-six clinics. At this time, the Emergency Room Committee advised on ER policy. It included the chiefs of surgical, medical, pediatric, and psychiatric clinics; ambulatory nursing services; and personnel health service, in addition to the assistant administrator of hospital and a representative of private surgeons.<sup>351</sup>

347. Memorandum by Albert Snoke, in Box 2, folder labeled “Ambulatory Services,” Snoke Papers.

348. Snoke, *Hospitals, Health, and People*, 117.

349. *Grace-New Haven Community Hospital Annual Report 1962-1963*, 1963, YNH Archives, 5.

350. Memorandum by Richard E. Weinerman, “Information Memorandum #3: Recent Developments in Ambulatory Service,” 14 June 1965, in Box 2, folder labeled “Ambulatory Services,” Snoke Papers, 2.

351. Unsworth, *Report on Visits to Emergency Rooms in Other Hospitals* (see chap. 3, n. 340).

### **A New Solution: The Medical Triage System and Ambulatory Care Facilities**

Weinerman considered several approaches to stabilize the patient load and improve efficiency of emergency care: expanding the emergency facilities; restricting emergency care to those with acute injuries; developing alternative resources in the community, such as medical society on-call panels, industrial medical centers, and special treatment clinics; and instituting medical triage that would “define and limit the role of the emergency station...protect the system of prompt service to those with urgent need...avoid the development of a large, undifferentiated, one-quick-visit-only dispensary for those seeking regular medical care...assist all patients in obtaining the kind of service appropriate to their particular needs and...make optimum use of all resources in the rest of the community.”<sup>352</sup> Weinerman ultimately decided to establish a medical triage system and ambulatory care facilities.

Weinerman instituted the medical triage system on 1 July 1963. The purpose of the triage system, which was adapted from military triage systems, was threefold: to provide an “immediate, brief medical evaluation,” to determine the nature of the medical problem, and to make an initial referral to the appropriate service. The ultimate goal was to “avoid unnecessary congestion in the emergency treatment areas, to enhance the flow of patient care, and to assist those with non-urgent problems to obtain the kind of care best suited to their needs.”<sup>353</sup> The job of the triage officer was to assign patients to one of five categories: immediate emergency attention, a short wait for less urgent care, referral for immediate or subsequent care to an outpatient clinic or private office, referral

352. Weinerman, “Changing Patterns in Medical Care,” 4.

353. *Ibid.*, 6.

to another community agency, or direct discharge.<sup>354</sup> The triage officers were residents from medicine, surgery, and pediatrics who supervised the ER during the hours from 10A.M. to 10P.M.<sup>355</sup> According to Weinerman, the surgical staff and residents were initially “resistant and doubtful” about medical triage because it was a new, unfamiliar system. This resistance disappeared over time. A ‘before and after’ survey of residents indicated there was general acceptance of the program as necessary and effective.<sup>356</sup>

According to Weinerman, the system was a great success because it improved the quality and convenience of emergency services and improved hospital-community relationships. Most importantly, it reduced the number of patients in the ER by discharging non-urgent patients (which comprised 18 percent of the patient population) or referring them to outpatient facilities. The percentage of patients sent out for referral or discharge decreased from 24 percent to 13 percent from 1963 to 1965 because patients started to use the ER less frequently for non-urgent problems.<sup>357</sup> The success of the triage system was demonstrated by a subtle downward trend in patient load. As compared to Hartford Hospital, the increase in emergency room visits was less pronounced at Yale-New Haven Hospital from 1963 to 1969.<sup>358</sup> According to an annual report in 1965, the triage system “still seems to be the best answer to the proper care of the large number of patients that are not truly emergent but do require a physician’s attention on entrance.”<sup>359</sup> Weinerman declared that the triage system has “added a new dimension of

354. *Ibid.*

355. Unsworth, *Report on Visits to Emergency Rooms in Other Hospitals* (see chap. 3, n. 340).

356. Weinerman, “Changing Patterns in Medical Care,” 11-12.

357. *Ibid.*

358. Refer to Figure 6, Figure 9, and Table 4 in Appendix 1.

359. *Yale-New Haven Hospital Annual Report 1964-1965*, 1965, YNH Archives, 9.

hospital service to the community – that of professional evaluation and appropriate referral of patients with non-urgent medical problems who come to the only door of the hospital that is always open: that of the Emergency Service.”<sup>360</sup>

In spite of its success, Weinerman viewed triage as a temporary solution to the patient overload. He admitted that “even the most comprehensive of services” would not be able to “meet the profound community needs that are reflected in the changing pattern of the once-modest ‘accident room.’” He viewed the “ultimate solution” as the development of an integrated system of community medical care. When this was accomplished, he believed that “the emergency service will again be appropriately named, and triage will no longer be necessary.”<sup>361</sup>

ER visits remained at manageable levels because ambulatory care facilities provided an alternative location for non-urgent patients. Several ambulatory care facilities were established in New Haven: Hill Health Center in 1968, the Community Health Care Center in October 1971, the Yale Health Plan in July 1971, and the Yale Primary Care Center in 1974.<sup>362</sup> The goal of the Primary Care Center was to “provide continuity of care rather than episodic care for those patients who were repeated users of the multiple services of the Emergency Service and the clinics. The Center will also relieve the Emergency Service of those patients who have sought non-emergency care through that source, thus making it possible for more concentrated attention to be

360. Weinerman, “Changing Patterns in Medical Care,” 13.

361. *Ibid.*, 13-14.

362. *Yale-New Haven Hospital Annual Report 1971*, Office of Information and Development, February 1972, YNHH Archives, 3.

placed on true emergencies."<sup>363</sup> This aim of establishing comprehensive health services, similar to those championed by the Johnson administration, was to increase access to health care within the community and to provide patients with an alternative to ER care.

The new triage system was the most significant development at Yale-New Haven Hospital. Residents continued to run the ER. According to Dr. Albert Weihl, an attending physician in the ER in the late eighties, minimal supervision of residents continued through the eighties. A surgeon provided occasional resident supervision and teaching but only for fifteen to twenty hours a week.<sup>364</sup>

Dr. David Podell, an internal medicine resident in the eighties, said of his time in the ER, "we were all loose by ourselves, we were called the lone rangers."<sup>365</sup> According to Dr. John Schriver, an emergency physician who started his internal medicine residency at Oregon Health Sciences University in 1968, "they put a very senior resident in surgery down there, they had to have someone who knew what...they were doing, because the surgical issues were too important...most of the residents didn't care for the rotation very much...your buddies expected you not to admit anybody."<sup>366</sup> As a resident in the sixties, Schriver recalls, "what you liked, and I think the majority felt this way, is

363. *Yale-New Haven Hospital Annual Report 1974*, Office of Information and Development, February 1975, YNH Archives, 22.

364. Albert Weihl, MD, telephone interview by author, November 5, 2008. Dr. Weihl completed an internal medicine residency at Yale-New Haven Hospital in the early seventies and served as an attending physician in the Yale-New Haven Hospital ER from 1987 to 2006. He started the emergency medicine residency program there in 1996.

365. David Podell, MD, telephone interview by author, November 7, 2008. Dr. Podell completed his internal medicine residency at Yale-New Haven Hospital and currently practices as a rheumatologist at Waterbury Hospital.

366. John Schriver, MD, telephone interview by author, November 7, 2008. Dr. Schriver served as the Chief of Emergency Medicine at Oregon Health Sciences University from 1976 to 1990 and as Chief of Emergency Services at Yale-New Haven Hospital from 1991 to 2004. He currently serves as the Chief of Emergency Services at Rochester General Hospital.

that you were own your own, you had a tremendous amount of responsibility, and I think that many, if not most, wanted to do a good job...I think that those that didn't like it...found it pretty challenging...you had to make decisions on limited information...and one of the great difficulties was that most house staff were hard to admit to...and so there were political issues in working down there as well..."<sup>367</sup>

According to Dr. Richard Stahl, referring to the YNH ER in the eighties, "it was trial by fire." There was one incident when a man collapsed in the waiting room from a ruptured spleen and "just bled out" and died.<sup>368</sup> In 1982 the ER moved from the basement of a nearby medical building into the first floor of the hospital. It was not until the late 1980s that Wehl got funding from the hospital to hire physicians, usually fellows in medicine department, to supervise house staff in the ER.

### **The Changes in the 1960s Served as Temporary Solutions**

Triage systems and ambulatory services provided temporary solutions to ER management. The problems faced at Yale-New Haven Hospital were similar to those faced in other academic institutions across the country. According to Rosen, an emergency physician at the University of Chicago, errors in patient care happened in emergency departments at academic institutions across the country in the early seventies. "Catastrophic errors were occurring because these were the sickest patients in the city and there was nobody there to help take care of them."<sup>369</sup> Because of the military experience and the senior status of the ER house staff, Yale-New Haven Hospital was

<sup>367</sup>. *Ibid.*

<sup>368</sup>. Stahl, interview.

<sup>369</sup>. Rosen, interview.

more effective than Hartford Hospital in stabilizing the patient load without amassing patient complaints or committing gross medical errors. They did not hire attending physicians to supervise in the ER in the sixties. At academic institutions, emergency physicians' entry into academic medicine was delayed, especially in the Northeast.

## 8

**Conclusion****URBAN TEACHING HOSPITALS DEVELOP TRIAGE SYSTEMS AND  
AMBULATORY CARE FACILITIES**

Urban teaching hospitals encountered many of the same problems as small community hospitals. Alexandria, Yale-New Haven, and Hartford hospitals reinforced the belief that patients had a right to emergency medical care: all three hospitals provided twenty-four-hour emergency services for all patients, regardless of ability to pay. ER staffing methods changed more drastically at small community hospitals. This was not due to a lack of information: all three hospitals considered several options to restructure emergency services. Many hospitals became aware of the Alexandria Plan through the AMA's publication of *Emergency Department: A Handbook for Medical Staff*. Small community hospitals such as Fairfax Hospital, Norwalk Hospital, and Danbury Hospital chose to adopt the new staffing method. Hartford and Yale-New Haven hospitals considered this staffing method but ultimately decided to develop triage systems and ambulatory care facilities instead.

There were several reasons that urban teaching hospitals resisted hiring attending physicians to staff their emergency departments. First, patients' dissatisfaction with emergency services had less impact at these hospitals. Unlike Alexandria Hospital, Hartford and Yale-New Haven hospitals served poor urban populations and were not as

threatened by the local competition.<sup>370</sup> Although patients did not stimulate change, administrators did. Problems in the Hartford Hospital ER were brought to the attention of the entire medical faculty in 1964 due to “repeated investigations and reports.”<sup>371</sup> In contrast, Yale-New Haven Hospital’s response to a tragic event in 1967 reflected favorably on the ER – this worked to the advantage of the ER and secured its reputation within the hospital.

Financial factors made it difficult for the urban teaching hospitals to institute changes. The ER was a financial drain for many academic hospitals.<sup>372</sup> Even after the institution of Medicare and Medicaid, emergency departments continued to lose money because the programs did not provide health insurance coverage to many young workers. In contrast, the middle-class population in Alexandria had private health insurance by the early sixties, and the city helped alleviate the costs of care for the medically indigent. As a result, the emergency room did not suffer such enormous financial losses, and the hospital was able to offer excellent compensation for emergency physicians. Because urban teaching hospitals had significantly larger patients loads, they would have required more physicians than smaller hospitals; this would have been even more difficult financially. The use of full-time emergency physicians would also have been difficult from an administrative standpoint. Due to the tension between the academic medical faculty and community physicians, emergency physicians would have

370. In contrast with Alexandria, the medical faculty at Yale-New Haven Hospital and Hartford Hospital did not express growing concerns about patient complaints. The medically indigent population that used the ER in these hospitals may not have lodged as many complaints or their complaints may have been disregarded.

371. Arthur C. Unsworth, *Annual Report of the Emergency Room Committee*, Hartford Hospital Emergency Room Committee, 1 September 1966, in Box 41, folder labeled “ERC Reports 1958-1966,” Blake Papers.

372. Ludmerer, *Time To Heal*, 235-36.

had difficulty obtaining admitting privileges and gaining respect in the hospital.<sup>373</sup> In community hospitals, there was less resistance from medical staff. Furthermore, emergency physicians who were committed to working in their communities for a long-time, such as those in Alexandria, were better able to establish long-term relationships within the community and to build the reputation of their practice.

Academic hospitals tried to manage the patient overload in the ER by developing ambulatory care facilities and triage systems. The development of ambulatory care facilities was consistent with President Johnson's desire to establish comprehensive community health centers where patients could go for non-urgent care. The idea of triage was adapted from war, where sorting patients by severity had led to great improvements in survival rates. Unlike the military triage systems that required extensive communication between physicians and medics, these triage systems relied heavily on the clinical acumen of a house officer. The aim of civilian triage systems – to decrease non-urgent patient visits – differed from the aim of military triage – to minimize time to definitive surgical treatment. The civilian triage systems and ambulatory care facilities, developed to divert non-urgent patients away from the ER, were somewhat successful in moderating ER visits.

The EMS systems in all three locations were relatively weak. Although EMS developed during the late sixties and early seventies in Illinois, Maryland, and Seattle, it spread sporadically and inconsistently across the country. In these case studies, the development of EMS systems did not put pressure on the hospitals to improve their emergency services, although the reverse may have been true: the Alexandria Fire Department added a third ambulance to its supply after the first year of the Alexandria

373. *Ibid.*

Plan. There were also very few changes that influenced the ER's status within the hospital. Yale-New Haven and Hartford hospitals had emergency room committees but their power was limited; neither granted the emergency room departmental status in the sixties. The minimal administrative developments at Hartford and Yale-New Haven hospitals were relatively consistent across the country. By 1969 few emergency services had departmental status, only 58 percent had a functioning emergency department committee, and two-thirds had a director but most were part-time.<sup>374</sup>

In spite of its flaws, the academic hospital's approach to emergency medicine in the sixties was at least passable. Academic hospitals had access to more resources, including specialty services and senior residents, than community hospitals. Although this was helpful, excellent emergency medical care required more: thorough evaluation, efficient diagnosis, and appropriate consultation – as quickly as possible. As the variety of medical illnesses mushroomed and the patient population grew, emergency medicine became even more challenging. A broad selection of specialists and intelligent but inexperienced house staff were not a substitute for these skills. Furthermore, the surgeons were fast becoming out of place in an environment with increasing numbers of non-urgent, medical, and pediatric cases. This was often overlooked because many of complicated, life-threatening conditions were of a surgical nature. The surgical successes overshadowed the inadequate care of non-urgent patients.<sup>375</sup>

When emergency physicians began working at Hartford Hospital, the medical staff still harbored strong feelings against them. These problems were not as prevalent in Alexandria, where four emergency physicians worked at Alexandria Hospital for their

374. Webb, "The Emergency Medical Care System, in a Metropolitan Area" 91.

375. *Yale-New Haven Hospital Annual Report 1970*, Office of Information and Development, February 1971, YNH Archives, 7.

entire careers and developed strong relationships within the community. Although Hartford Hospital used physicians in the ER, Yale-New Haven Hospital did not because (1) it was likely not affected by the house staff shortage because its affiliation with Yale School of Medicine made it more attractive to residents (2) it used senior house staff rather than interns in the ER and (3) the triage system at Yale-New Haven Hospital was more effective than at Hartford Hospital in moderating the patient load in the sixties.

In terms of specialty recognition, emergency physicians had made very little progress in the academic hospitals. Coronary care units and triage systems were still relatively new and underdeveloped, and the academic hospitals had developed a growing resistance to the idea of full-time emergency physicians.

## **A COLLABORATION BETWEEN COMMUNITY AND TEACHING HOSPITALS**

There was a unique collaboration that illustrated the growing acceptance of full-time emergency physicians. In 1968 Dr. James Dineen and Dr. Steven Goldfinger, internists at Harvard Medical School, developed a two-week postgraduate course to educate three physicians who had relinquished their practices and were pursuing emergency care full-time at Lynn Hospital in Massachusetts.<sup>376</sup> The course included time in the CCU and the ER and lectures on cardiac care and other acute medical illnesses. House staff and medical faculty taught the course. The program emphasized the knowledge gap between academic house staff and community physicians and substantiated the idea that an academic ER could serve as a “classroom” for training

376. Mangold and Frey, “The Physician and the Emergency Health Service System,” 200.

community physicians.<sup>377</sup> According to Goldfinger, “it was a very enriching experience...it allowed them to recognize their limitations.”<sup>378</sup> When the two-week course came to an end, “they felt ill-prepared and wondered whether they could have some teaching back on their base.”<sup>379</sup>

In 1970 Harvard developed a one-year fellowship for continuing education for resident graduates who were interested in working in emergency medicine full-time. This program became formalized over the next decade. The program illustrated an ultimate paradox: the academic ER that served as a teaching ground for community physicians had many of its own supervision problems. According to Goldfinger, “I did see emergency medicine as a...treacherous wasteland” where residents were giving emergency care “with minimal supervision by staff.” Goldfinger became aware of “the need for a new specialty: the first thirty minutes of anything.”<sup>380</sup> Although the program signified a new collaboration between the academic hospital and community-based emergency physicians, it did not lead directly to attending supervision in the academic hospital. Instead it reinforced the idea that residents could teach community physicians how to provide excellent emergency care.

This program helped fulfill three requirements for specialty recognition: the differentiation of emergency medicine based on new medical concepts, the

377. Stephen E. Goldfinger and Daniel D. Federman, “Postgraduate Education of Community Physicians: Emergency Care Training in the Emergency Ward,” *Journal of the American Medical Association* 206, no. 13 (December 23-30, 1968): 2883-4.

378. Stephen Goldfinger, MD, telephone interview by author, December 16, 2008. Dr. Goldfinger currently serves as a professor of medicine at Harvard Medical School and as a gastroenterologist at Massachusetts General Hospital. He served as Harvard Medical School’s Faculty Dean for Continuing Education from 1973 to 2000.

379. *Ibid.*

380. *Ibid.*

representation of a well-defined field of medical knowledge, and the beginning of education development within the field of emergency medicine. With regard to the fourth requirement, gaining broad professional support, this new program had a paradoxical effect. It facilitated the development of positive, collegial relationships between medical faculty and community emergency physicians, but it also established the role of the academic hospital as a teaching facility for community physicians.

### **THE RISE OF EMERGENCY MEDICINE**

The 1960s marked the beginning of the development of a new medical specialty. Medical historian George Weisz argues that there are two distinct logics of specialty development: (1) elite, hospital-based academic specialties that developed based on theoretical knowledge and (2) specialties that developed from private medical practice based on a large volume of patients or incidence of particular health problems.<sup>381</sup> Emergency medicine represented a combination of these. The nature of the specialty was similar to that of private medical practice specialties because (1) many of the first emergency physicians were GPs who applied their clinical skills in emergency situations (2) like pediatrics and family medicine, the specialty was broad-based in clinical scope – it involved the treatment of a large volume of patients with a variety of illnesses (3) as the emergency room became a substitute for the private physician’s office, a significant portion of patients had non-urgent problems. However, emergency medicine also developed as a hospital-based medical specialty because it was defined exclusively by its location: the hospital emergency room. Because emergency medicine was confined to the hospital, it needed to gain acceptance in elite academic institutions in order to

381. Weisz, *Divide and Conquer*, 193.

achieve specialty recognition. The problem was that the specialty was quite unlike most hospital-based specialties: it did not emerge based on a narrow field of medical research or technical procedures. Unlike other hospital specialists, emergency physicians did not typically participate in clinical research. Because emergency medicine did not fit into either of the traditional specialty structures, it developed in a unique way. Full-time specialists in emergency care emerged two decades before emergency medicine achieved formal specialty recognition.

Weisz also argues that specialization depends on a variety of social, scientific, technological, and economic factors.<sup>382</sup> The specialty of emergency medicine started to develop in a decade of economic prosperity and social activism when the government, the media, physician leaders, and the American public demonstrated a growing interest in improving the quality of emergency services. The financing of government programs and private health insurance companies further facilitated these changes by increasing access of emergency services to all Americans. The specialty first developed at community hospitals where emergency departments served paying patient populations and were more profitable. Medical advances in pre-hospital and trauma care further advanced the specialty by establishing emergency medicine as a distinct clinical field and encouraging further research.

Physician leaders played a critical role in the development of emergency medicine: they recognized and publicized the inadequacies of emergency care, built on military concepts to develop organized pre-hospital and trauma systems, contributed to research in trauma and coronary care, promoted patients' use of the emergency

382. *Ibid.*, 228.

department, and became the primary providers of emergency care in the hospital.<sup>383</sup> The first full-time emergency physicians helped to establish broad professional support for the specialty and ultimately organized at a national level in order to fight for specialty recognition. Physician leaders in emergency medicine first organized at a national level in 1968 when they established the American College of Emergency Physicians (ACEP). The earliest members of ACEP included several of the early full-time emergency physicians: Dr. Ronald Leidelmeyer, Dr. James Mills, and Dr. John Wiegenstein at St. Lawrence Hospital. The primary goals of ACEP were to promote the specialty of emergency medicine and to provide educational forums for physicians interested in emergency medicine.<sup>384</sup>

The concept of staffing the emergency room with full-time emergency physicians, first formally implemented at Alexandria Hospital, eventually became the standard at community and academic hospitals across the country. The triage systems and ambulatory care facilities that developed at larger institutions provided an infrastructure for emergency care and ambulatory care. Medical advances spurred by the military further distinguished the field and created a new role for the emergency room as a critical, intermediate link in the chain of urgent medical services. In the sixties, a decade of economic prosperity and social activism, the field of emergency medicine established itself in a nontraditional way as a response to public demand. With the overarching support of the government, the media, the medical community, and the

383. Mangold and Frey, "The Physician and the Emergency Health Service System," 198.

384. In the early seventies ACEP started to fight for specialty recognition by expanding its membership base, holding national conferences on emergency medicine, developing an examination for practicing emergency physicians, creating the Emergency Medicine Foundation to promote research and education projects, and publishing an academic journal, *Journal of the American College of Emergency Physicians*. ACEP formally created the American Board of Emergency Medicine in 1976. See Mills, "Emergency Medicine, 1947-1987," 82; Zink, *Anyone, Anything, Anytime* 81-103, 157, 163.

American public, emergency medicine burgeoned in small communities across the country. By the end of the decade the first vital steps had been taken on the long journey towards specialty recognition.

# Illustrations

## FIGURES

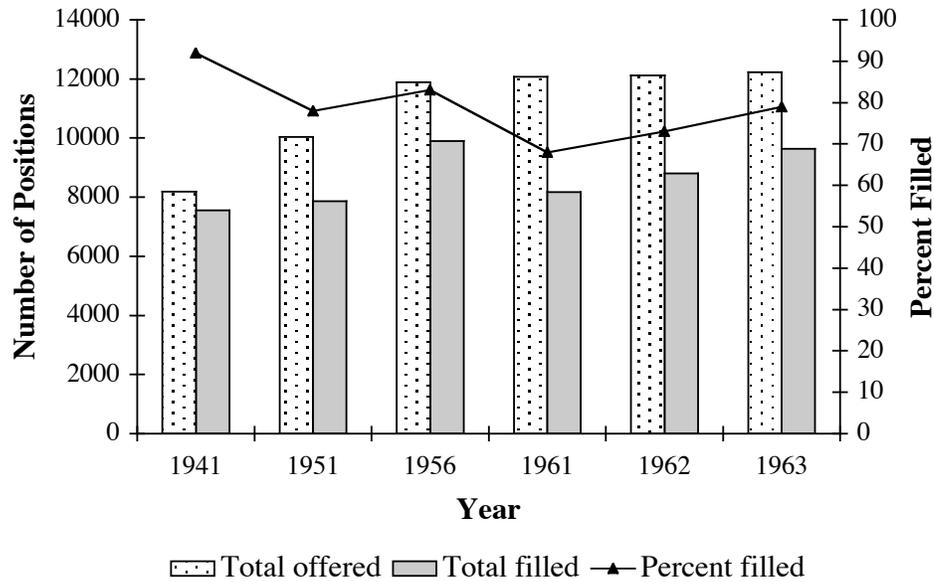


Figure 1. Hospital internships in selected years from 1941-1963 (Data from “Directory of Approved Internships and Residencies, 1964,” *Journal of the American Medical Association* 190, no. 7, November 14, 1964)

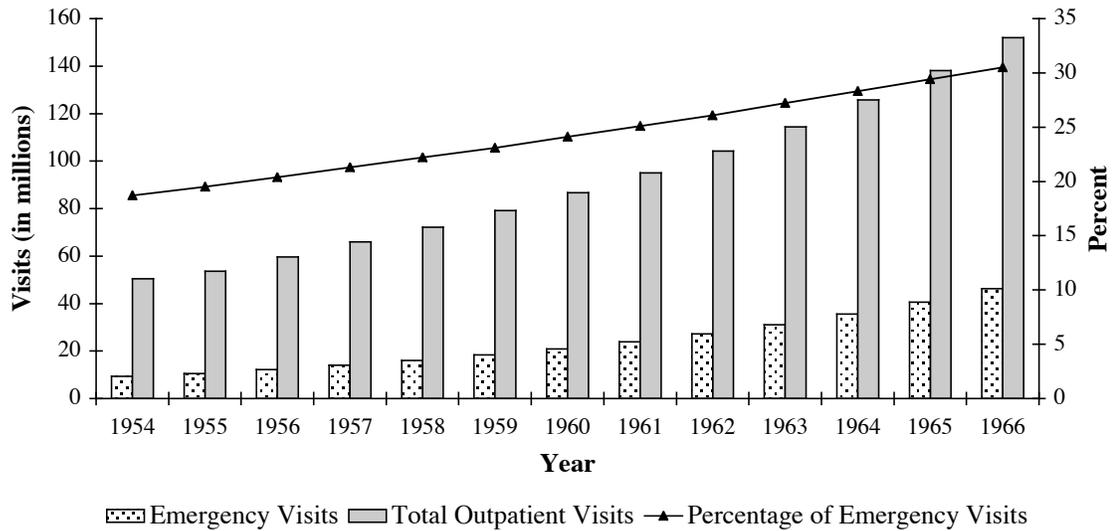


Figure 2. Percentage of emergency visits to short-term, general, and other special hospitals that were classified as emergency visits, 1954-1966 (Data from *Hospital Emergency Services: A Report on a Conference at Hartford Hospital*, in Box 17, folder labeled “Emergency Services,” Thomas Stewart Hamilton Papers, The Hamilton Archives at Hartford Hospital, Hartford, CT, 95)

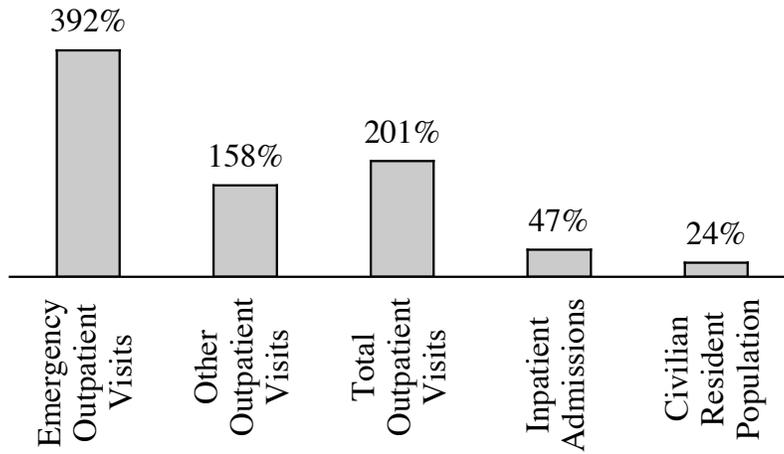


Figure 3. Percentage increase of outpatient visits and inpatient admissions to short-term, general, and other special hospitals, 1954-1966 (Data from 1955-62 Guide Issues, *JAHA*, projected by 14.2% annually for emergency visits, by 8.2% annually for other outpatient visits for 1958-1966, and by 711,914 for inpatient admissions for 1962-66; population figures from U.S. Census Bureau Estimates for years 1954-1963, Series P-25, No. 264, projected by 1.8% annually for years 1964-66, as cited in *Hospital Emergency Services: A Report on a Conference at Hartford Hospital*, in Box 17, folder labeled “Emergency Services,” Thomas Stewart Hamilton Papers, The Hamilton Archives at Hartford Hospital, Hartford, CT)

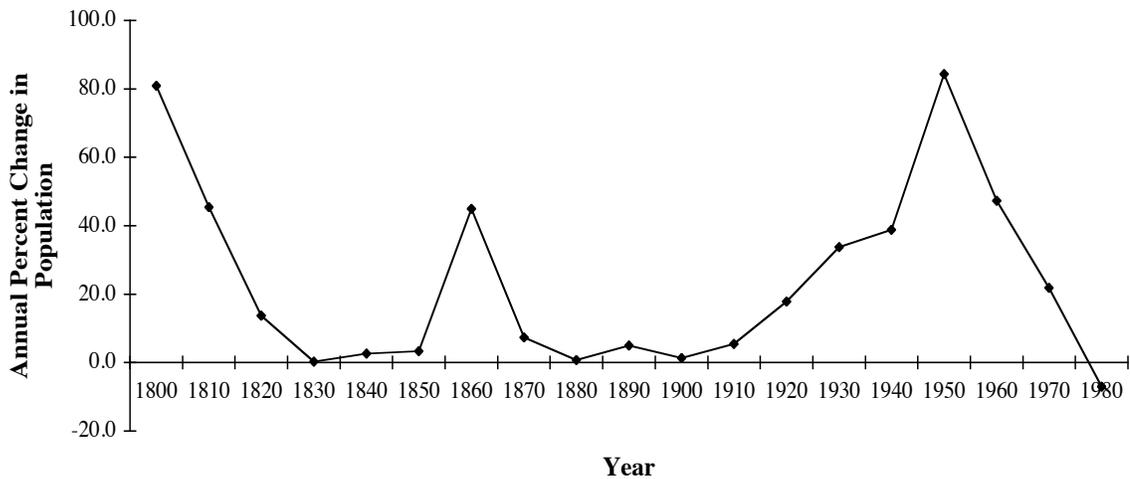


Figure 4. Annual percentage change in population of Alexandria, Virginia, 1800-1980 (Data from U.S. Bureau of the Census, *Census of Population and Housing, 1790-1980*)

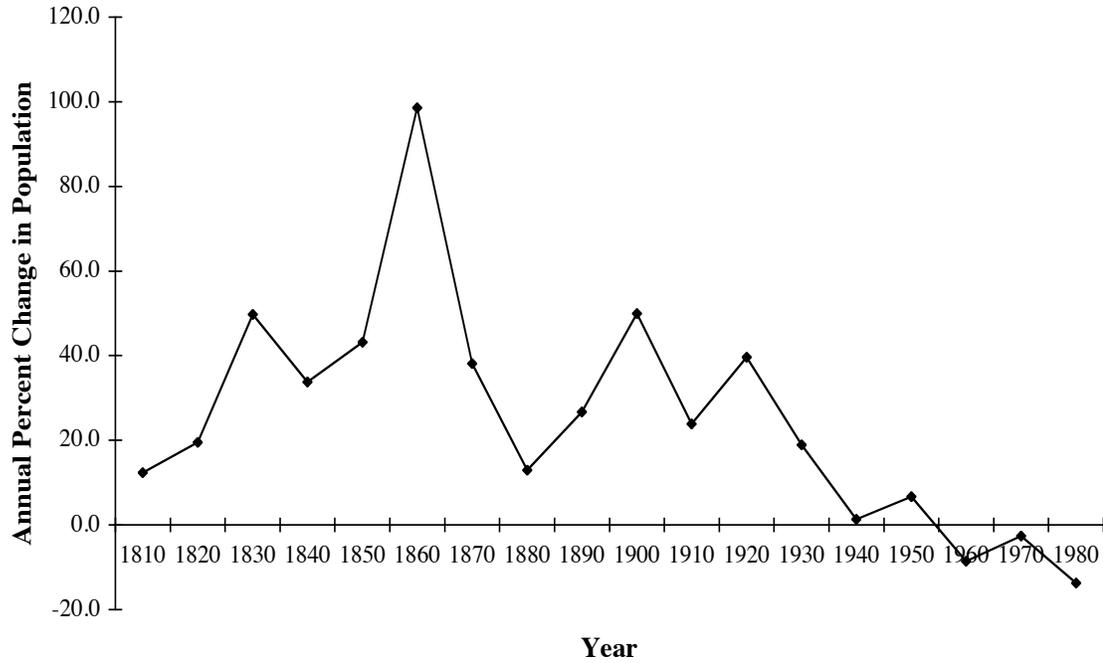


Figure 5. Annual percentage change in population of Hartford, Connecticut, 1810-1980 (Data from U.S. Bureau of the Census, *Census of Population and Housing, 1800-1980*)

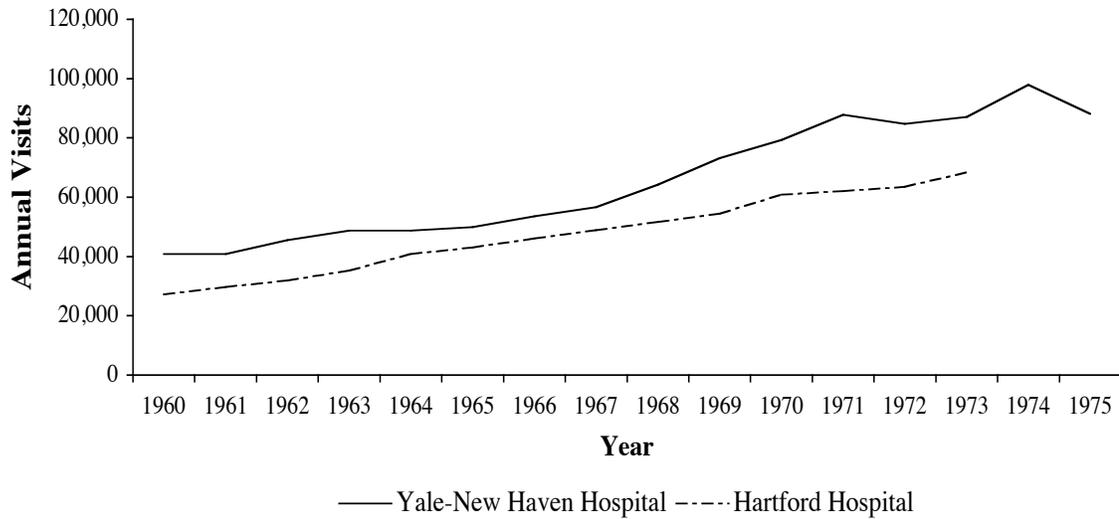


Figure 6. Emergency service visits at Hartford and Yale-New Haven Hospitals, 1960-1975 (Data for Hartford Hospital from *Hospital Emergency Services: A Report on a Conference at Hartford Hospital*, in Box 17, folder labeled “Emergency Services,” Thomas Stewart Hamilton Papers, The Hamilton Archives at Hartford Hospital, Hartford, CT; data for Yale-New Haven Hospital from *Annual Reports*, 1961-1970, Yale-New Haven Hospital Archives, New Haven, CT)

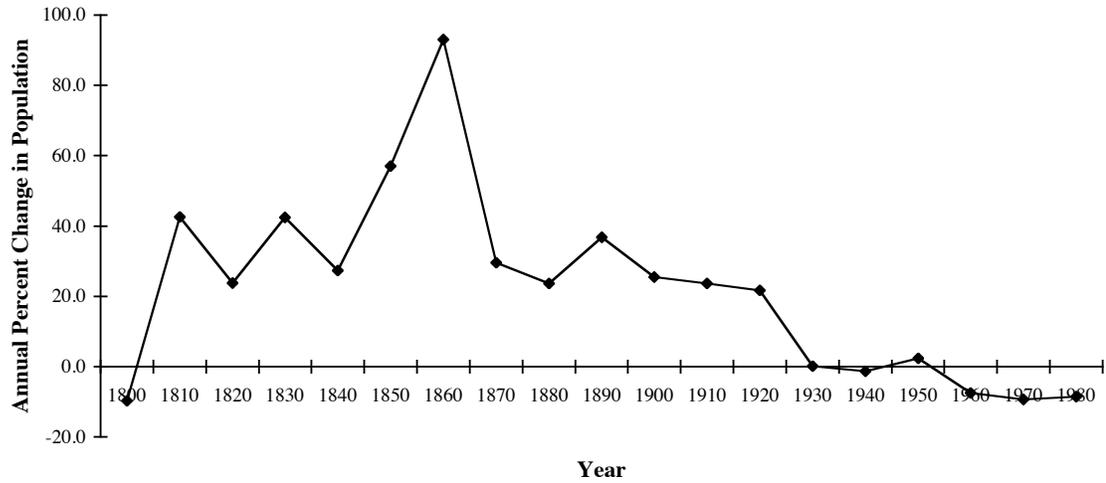


Figure 7. Annual percentage change in population of New Haven, Connecticut, 1800-1980 (Data from U.S. Bureau of the Census, *Census of Population and Housing, 1790-1980*)

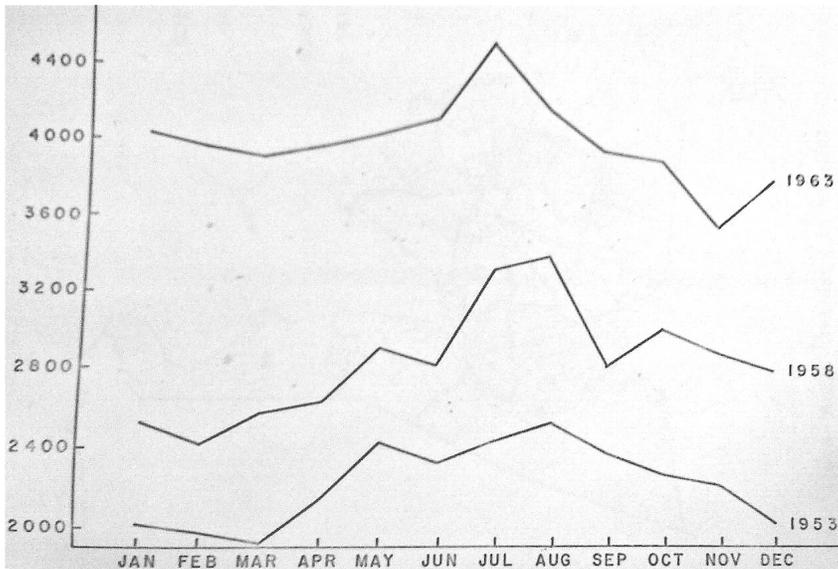
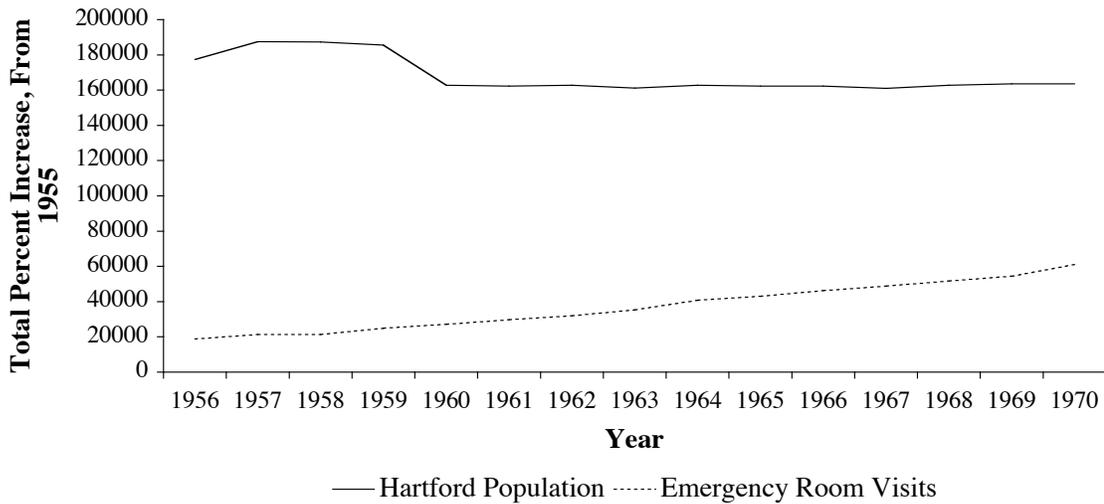
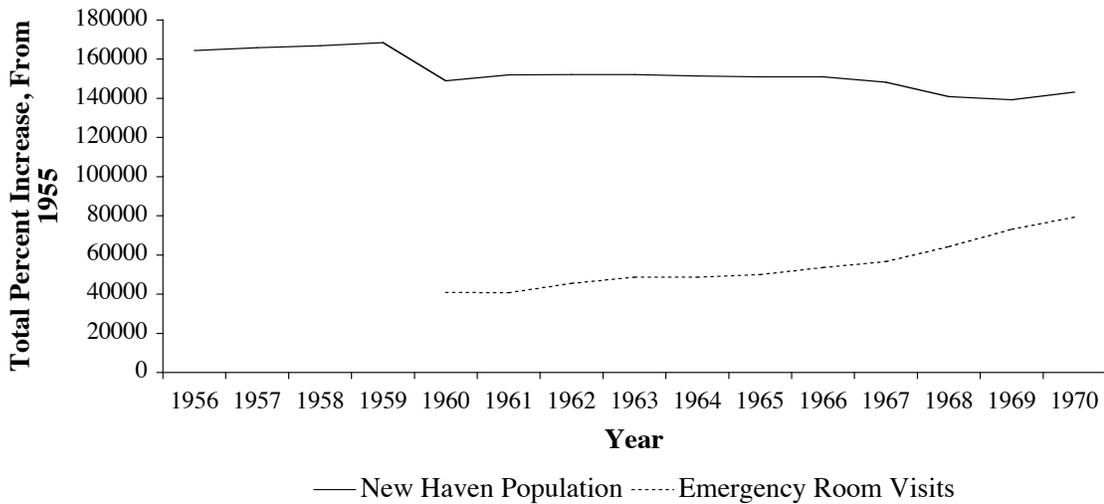


Figure 8. Emergency service visits by month at Yale-New Haven Hospital in 1953, 1958, and 1963 (Data from “Changing Patterns in Hospital Emergency Service, 1964,” in Box 58, folder 22, Edwin Richard Weinerman Papers, Manuscripts and Archives, Yale University Library, New Haven, CT)



A. Hartford Hospital



B. Yale-New Haven Hospital

Figure 9. Net percentage increase in population and emergency room visits at Hartford and Yale-New Haven hospitals, 1956-1970 (Population data from Secretary of the State, *State of Connecticut Register and Manual*, 1956-1970; data for Yale-New Haven Hospital from *Annual Reports*, 1961-1970, Yale-New Haven Hospital Archives, New Haven, CT; data for Hartford Hospital from *Hospital Emergency Services: A Report on a Conference at Hartford Hospital*, in Box 17, folder labeled “Emergency Services,” Thomas Stewart Hamilton Papers, The Hamilton Archives at Hartford Hospital, Hartford, CT)

## TABLES

Table 1. Hospital Internships and Residencies

Year	Internship Positions			Residency Positions		
	Offered	Filled	Filled (%)	Offered	Filled	Filled (%)
1941	8182	7553	92	5256	4100	78
1951	10044	7866	78	29645	15851	77
1956	11895	9893	83	28528	23012	81
1961	12074	8173	68	35403	29637	84
1962	12124	8805	73	36502	29239	80
1963	12229	9636	79	37357	29485	79

Source: "Directory of Approved Internships and Residencies, 1964," *Journal of the American Medical Association* 190, no. 7 (November 14, 1964).

Table 2. Percentage of Emergency Visits to Short-Term, General, and Other Special Hospitals

Year	Emergency Visits (millions)	Total Out-patient Visits (millions)	Emergency Visits (%)
1954	9.4	50.4	18.7
1955	10.5	53.6	19.5
1956	12.2	59.7	20.4
1957	14	66	21.3
1958	16	72.2	22.2
1959	18.3	79.1	23.1
1960	20.9	86.7	24.1
1961	23.9	95	25.1
1962	27.2	104.3	26.1
1963	31.1	114.4	27.2
1964	35.5	125.7	28.3
1965	40.6	138.1	29.4
1966	46.3	151.9	30.5

Source: "Percentage of total outpatient visits to short-term, general, and other special hospitals which were classified as emergency visits," *Hospital Emergency Services: A Report on a Conference at Hartford Hospital*, in Box 17, folder labeled "Emergency Services," Thomas Stewart Hamilton Papers, The Hamilton Archives at Hartford Hospital, Hartford, CT, 95.

Table 3. Historical Populations, 1800-1980

Year	Alexandria, VA		Hartford, CT		New Haven, CT	
	Population	Annual Percent Change	Population	Annual Percent Change	Population	Annual Percent Change
1800	4971	80.9	3523	–	4049	-9.8
1810	7227	45.4	3955	12.3	5772	42.6
1820	8218	13.7	4726	19.5	7147	23.8
1830	8241	0.3	7074	49.7	10180	42.4
1840	8459	2.6	9468	33.8	12960	27.3
1850	8734	3.3	13555	43.2	20345	57
1860	12652	44.9	26917	98.6	39267	93
1870	13570	7.3	37180	38.1	50840	29.5
1880	13659	0.7	42015	13	62882	23.7
1890	14339	5	53230	26.7	86045	36.8
1900	14528	1.3	79850	50	108027	25.5
1910	15329	5.5	98915	23.9	133605	23.7
1920	18060	17.8	138036	39.6	162537	21.7
1930	24149	33.7	164072	18.9	162655	0.1
1940	33523	38.8	166267	1.3	160605	-1.3
1950	61787	84.3	177397	6.7	164443	2.4
1960	91023	47.3	162178	-8.6	152048	-7.5
1970	110927	21.9	158017	-2.6	137707	-9.4
1980	103217	-7	136392	-13.7	126021	-8.5

Source: U.S. Bureau of the Census, *Census of Population and Housing, 1790-1980*

Table 4. Comparison of Population to Emergency Room Visits at Hartford and Yale-New Haven Hospitals

Year	Population (in thousands)		Annual Emergency Room Visits		Net Change (%) <sup>a</sup>			
	Hartford	New Haven	Hartford Hospital	Yale-New Haven Hospital	Hartford Hospital		Yale-New Haven Hospital	
					Population	Visits	Population	Visits
1955	177.4	164.4	17,641	–	–	–	–	–
1956	177.4	164.4	18,770	–	0	6.4	0	–
1957	187.4	165.8	21,272	–	0.1	21	0	–
1958	187.3	166.9	21,424	–	0.1	21	0	–
1959	185.6	168.5	24,834	–	0	41	0	–
1960	162.8	148.9	27,196	40,872	-0.1	54	-0.1	–
1961	162.2	152	29,657	40,804	-0.1	68	-0.1	-0.2
1962	162.7	152.1	31,890	45,463	-0.1	81	-0.1	11.2
1963	161.2	152.1	35,275	48,697	-0.1	100	-0.1	19.1
1964	162.8	151.4	40,834	48,674	-0.1	132	-0.1	19.1
1965	162.3	150.9	43,068	49,955	-0.1	144	-0.1	22.2
1966	162.2	151	46,148	53,566	-0.1	162	-0.1	31.1
1967	161	148.2	48,862	56,666	-0.1	177	-0.1	38.6
1968	162.8	140.9	51,613	64,290	-0.1	193	-0.1	57.3
1969	163.5	139.3	54,486	73,143	-0.1	209	-0.2	79
1970	163.6	143.1	60,927	79,313	-0.1	245	-0.1	94.1
1971	158	137.7	62,042	87,760	-0.1	252	-0.2	114.7
1972	157.6	135.4	63,570	84,788	-0.1	260	-0.2	107.4
1973	156.6	136.2	68,346	87,105	-0.1	287	-0.2	113.1
1974	155.3	133.9	–	97,924	-0.1	–	-0.2	139.6
1975	156.5	132.5	–	88,123	-0.1	–	-0.2	115.6

*Source:* Population data from Secretary of the State, *State of Connecticut Register and Manual*, 1955-1975; data for Yale-New Haven Hospital from *Annual Reports*, 1961-1970, Yale-New Haven Hospital Archives, New Haven, CT; data for Hartford Hospital from *Hospital Emergency Services: A Report on a Conference at Hartford Hospital*, in Box 17, folder labeled “Emergency Services,” Thomas Stewart Hamilton Papers, The Hamilton Archives at Hartford Hospital, Hartford, CT.

<sup>a</sup>Net percentage change of population is calculated from 1955, of Hartford Hospital emergency room visits is calculated from 1955, and of Yale-New Haven Hospital emergency room visits is calculated from 1960.

## Selected Bibliography

I include here the sources that have been particularly useful in writing this manuscript. This is not a complete record of all the works that I have consulted during my research, but it does indicate the range of readings that guided my ideas. It also serves as a collection for those interested in further reading about the development of emergency medicine.

"30 M.D.'s Unite to Meet Hospital Emergencies." *Hospital Tribune*, April 22, 1986: 13.

Abbott, Vernon C. "Attending Doctors Staff Emergency Room." *Modern Hospital* 98 (June 1962): 77-78.

"Airborne Ambulances on the Rise." *Medical World News*, April 18, 1969.

American College of Surgeons, Committee on Trauma. "Standards for Emergency Ambulance Services." *Bulletin of the American College of Surgeons* (1967) 52: 131-32.

American Medical Group Association. "American Medical Group Association History." American Medical Group Association. [http://www.amga.org/AboutAMGA/history\\_aboutAMGA.asp](http://www.amga.org/AboutAMGA/history_aboutAMGA.asp) (accessed December 21, 2008).

*Annual Report: Alexandria, A Dynamic City*. Alexandria, VA: Planning and Urban Renewal Department, 1963. Alexandria Library Local History/Special Collections, Alexandria, VA.

*Annual Report: City of Alexandria 1963-1964*. Alexandria, VA: Planning and Urban Renewal Department, 1964. Alexandria Library Local History/Special Collections.

Beaven, W.E. "Medical Staffing of Emergency Rooms, A Trial of Group Practice." *Medical Annals of D.C.* 34, no. 4 (April 1965): 173-76.

Blake, Marlene, Papers. The Hamilton Archives at Hartford Hospital, Hartford, CT.

Bowen, Ted. "Need Determines Use of Emergency-Outpatient Department." *Hospitals* 31, no. 6 (March 16, 1957): 60-62.

Cullen, Stuart C. and E.G. Gross. *Manual of Medical Emergencies*. Chicago: The Year Book Publishers, Inc., 1949.

Bradham, Gilbert B. "An Analysis of 2,418 Emergency Room Admissions." *The Journal of the South Carolina Medical Association* 61, no. 5 (May 1965): 127-30.

Butcher, Thomas P. "Emergency Room Care." *The Journal of the Kansas Medical Society* 57, no. 6: 338-40.

- Cameron, Cyril T.M., Edward W. Gilmore, and Edward L. McNeil. "History of Emergency Medicine in New York State." *New York State Journal of Medicine*, July 1976, 1176-78.
- Cassebaum, William H. "Editorial: Does the Injured Patient Receive Optimal Care?" *Journal of Trauma* 1, no. 4 (July 1961) 442-43.
- Clough, William P. "Problems Common to Emergency Departments." *Bulletin of the American College of Surgeons* 51, no 3 (may-June 1966): 125-28, 144.
- Coleman, Jules V. "Psychiatric Studies of Patient Needs in Emergency Services of General Hospitals." *Medical Care* 5, no. 4 (July-August 1967): 255-59.
- Coleman, Jules V. and Paul Errera. "The General Hospital Emergency Room and Its Psychiatric Problems." *American Journal of Public Health* 53, no. 8 (August 1963): 1294-1301.
- Committee on Acute Medicine of the American Society of Anesthesiologists. "Community-wide Emergency Medical Services." *Journal of the American Medical Association* 204, no. 7 (May 13, 1968): 595-602.
- Committee on Trauma. "Standards for Emergency Department in Hospitals." *Bulletin of the American College of Surgeons*, May-June 1963, 112, 125.
- Committee on Trauma, Committee on Shock, Division of Medical Sciences, National Academy of Sciences, and National Research Council. *Accidental Death and Disability: The Neglected Disease of Modern Society*. Washington, D.C.: National Academy of Sciences, 1966.
- Conley, Charles H. "Emergency Room Committee." *Maryland State Medical Journal* 4, no. 11 (November 1955): 726-27.
- "Connecticut Group Outlines Emergency Room Rules." *Bulletin of the American College of Surgeons* 38, no. 4 (1954): 157-58.
- Crombie, H. David, MD. Interview with author, New Haven, CT. October 30, 2008.
- Cross, James H. "Medical Economics: The Hospital Emergency Room." *Illinois Medical Journal* 118 (October 1960): 247-49.
- Curran, William J. "Legal History of Emergency Medicine From Medieval Common Law to the AIDS Epidemic." *American Journal of Emergency Medicine* 15, no. 7 (November 1997): 658-70.
- Cutler, Ann. *Four Minutes To Life*. New York: Cowles Book Co., 1970.

- Department of Planning and Regional Affairs. *1970 Population Highlights and Analysis*. Alexandria, VA: Washington Center for Metropolitan Studies, April 1972. In "Populations File." Alexandria Library Local History/Special Collections, Alexandria, VA.
- Dowling, Harry F. *City Hospitals: The Undercare of the Underprivileged*. Cambridge: Harvard University Press, 1982.
- Edlich, Richard F. "Three Giant Steps Toward the Development of a Modern Emergency Medical Service System." *Journal of Emergency Medicine* 9 (January-April 1991): 61-66.
- Eiseman, B. "Combat Casualty Management in Vietnam." *Journal of Trauma* 7, no. 1 (1967): 53-63.
- Eisenberg, Mickey S. "History of the Science of Cardiopulmonary Resuscitation," chap. 1 in *Contemporary Cardiology: Cardiopulmonary Resuscitation* (Totowa, NJ: Humana Press Inc., 2005), 1-10.
- \_\_\_\_\_. "The Resuscitation Greats: Leonard Cobb and Medic One." *Resuscitation* 54, no. 1 (July 2002): 5-9.
- Emergency Service: Number ten in a series of leaflets about the New Haven Hospital*, New Haven Hospital, 1932, Yale-New Haven Hospital Archives, New Haven, CT.
- Engleman, Rose C. and Robert J.T. Joy. *200 Years of Military Medicine*. Fort Detrick, Maryland: The Historical Unit of the US Army Medical Department, 1975.
- Ferber, Stanly. "Practice Limited to the Emergency Room." *Medical Economics*, July 15, 1963, 76-85.
- Final Report of the Advisory Committee on Recognizing New and Emerging Disciplines in Internal Medicine*. Philadelphia: American Board of Internal Medicine, 1993.
- Freilich, Herbert. "Variations in Census of Emergency-Room Patients." *Hospital Topics* 43 (May 1965): 45-47.
- Friedmann, Paul. "The Development of New Medical Specialties." *Current Surgery* 60, no. 1 (January-February 2003): 100-1.
- "Full-Time Practice in the E.R." *Hospital Progress* 47, no. 10 (February 1967): 77-80.
- Gabriel, Richard A. and Karen S. Metz. *A History of Military Medicine, Volume II: From the Renaissance Through Modern Times*. Westport, CT: Greenwood Press, 1992.
- Gibson, Geoffrey. "EMS: A Facet of Ambulatory Care." *Hospitals* 47 (May 16, 1973): 59-66.

- Ginsberg, Frances. "Effective Emergency Room Needs Adequate Staff, Patient Screening." *Modern Hospital* 104 (May 1965): 150.
- Gitchell, D. "Mutual Convenience Visits - What Are the Trends." Master's thesis, University of Michigan, 1966.
- Glastris, Paul. "An American Hero - Dr. David Boyd and Emergency Health Care - Life and Death in the Emergency Room, Part 2." *Washington Monthly*, February 1986.
- Goldfinger, Steven, MD. Telephone interview by author. December 16, 2008.
- Goldfinger, Stephen E. and Daniel D. Federman. "Postgraduate Education of Community Physicians: Emergency Care Training in the Emergency Ward." *Journal of the American Medical Association* 206, no. 13 (December 23-30, 1968): 2883-84.
- Goldman, John J. "New 'Family Doctor' Patients With Minor Ills Jam Emergency Rooms, Drive Up Hospital Costs." *Wall Street Journal*, August 10, 1964.
- Gollance, Harvey and A. Albert Wax. "Seasonal Needs Influenced This Hospital's Emergency Area Design." *Hospitals* 31, no. 6 (March 16, 1957): 55.
- Grace, William J. "The Mobile Coronary Care Unit and The Intermediate Coronary Care Unit in The Total Systems Approach to Coronary Care." *Diseases of the Chest* 58, no. 4 (October 1970): 363-68.
- Grace, William J. and John. A Chadbourn. "The Mobile Coronary Care Unit." *Diseases of the Chest* 55, no. 6 (June 1969): 452-55.
- Greenwood, John T. and F. Clifton Berry Jr. *Medics at War: Military Medicine from Colonial Times to the 21<sup>st</sup> Century*. Annapolis, MD: Naval Institute Press, 2005.
- Grout, John L. and Louis A. Holub. "20 Years' Experience in Emergency Room Management." *Bulletin of the American College of Surgeons* 40, no. 4 (July-August 1955): 210-12.
- "Growing Crisis in Health Care: Interview With Dr. John A. D. Cooper, President, Association of American Medical Colleges." *U.S. News and World Report*, November 3, 1969: 70-73.
- Guly, Henry. *A History of Accident and Emergency Medicine, 1948-2004*. Basingstoke, England: Palgrave Macmillan, 2005.
- Haeck, William T. "An EMS System That Works." *Hospitals* 47 (May 16, 1973): 139-42.
- Haller, John S. "The Beginnings of Urban Ambulance Service in the United States and England." *Journal of Emergency Medicine* 8 (1990): 734-55.
- Hamilton, Thomas Stewart, Papers. The Hamilton Archives at Hartford Hospital, Hartford, CT.

- Hampton, Oscar P. "Present Status of Ambulance Service in the United States." *Bulletin of the American College of Surgeons*, July-August 1965, 177-78.
- Hardaway, Robert M. "Contributions of Army Medicine to Civilian Medicine." *Military Medicine* 138, no. 7 (July 1973): 409-12.
- Hartley, Selwyn T. "The Newest Specialty: Emergency Medicine." *Journal of the Medical Association of Georgia* 64, no. 4 (April 1975): 105-6.
- Heaton, Leonard D., Carl W. Hughes, Harold Rosegay, George W. Fisher, and Robert E. Feighny. "Military Surgical Practices of the United States Army in Viet Nam." *Current Problems in Surgery*, November 1966: 1-59.
- Heisterkamp, Charles, ed. and comp. "Activities of the US Army Surgical Team WRAIR - Vietnam." Technical report, for the period 17 June 1967 to 20 January 1968, prepared for the US Army Medical Research and Development Command, Washington, D.C., 1970.
- Hess, J.R. and M.J.G. Thomas. "Blood Use in War and Disaster: Lessons from the Past Century." *Transfusion* 43, no. 11 (November 2003): 1622-33.
- Hilzinger, Frank. "26-Bed Montana Hospital Separates Emergency and Outpatient Areas." *Hospitals* 31, no. 6 (March 16, 1957): 56-59.
- "Histories File." Hartford Hospital Emergency Room, in Drawer 1. The Hamilton Archives at Hartford Hospital, Hartford CT.
- Hochbaum, Solomon R. "The Evolution of a Medical Specialty." *Michigan Hospitals*, January 1988, 7-12.
- Holdren, June. "The Emergency Room." *The American Journal of Nursing* 59, no. 8 (August 1959): 1108-9.
- Horowitz, Jacob. "What It Takes To Provide Good Emergency Room Care." *Modern Hospital* 97 (September 1961): 89-93.
- Horty, John F. "When Hospital Has an Emergency Room It May Be Required To Give Treatment." *Modern Hospital* 96, no. 3 (March 1961): 103-5.
- "Hospital Lists Services for Emergencies." *Chicago Tribune*, January 17, 1965.
- "Hospitals: Boom in Emergency Rooms." *Time*, August 16, 1963.
- "How Good Is Your Emergency Room?" *Modern Hospital* 83, no. 6 (1954): 61, 166.
- Howell, James T. and Robin C. Buerki. "The Emergency Unit in the Modern Hospital." *Hospitals* 31, no. 6 (March 16, 1957): 37-39.
- Jacobs, Lenworth, MD. Interview by author, Hartford, CT. September 22, 2008.

- Jauhar, Sandeep. "House Calls." *New England Journal of Medicine* 351, no. 21 (November 18, 2004): 2149-51.
- Johnson, C.E. "Three Physicians Provide Continuous Emergency Coverage." *Hospitals* 42, no. 11 (June 1, 1968): 93-94.
- Kaplan, H., and B. Levinstone. "An Appraisal of the Emergency Room of the Newark Beth Israel Hospital," *Journal of Newark Beth Israel Hospital* 10 (July 1959): 113-121.
- Keiserman, Joseph. "Staffing the Emergency Room." In *The Twenty-Third Hahnemann Symposium*, edited by Wilbur W. Oaks, Stanley Spitzer, and John H. Moyer, 18-28. New York: Grune and Stratton, 1972.
- Kennedy, Katharyn, Richard V. Aghababian, Lucille Gans, and C. Phuli Lewis. "Triage: Techniques and Applications in Decisionmaking." *Annals of Emergency Medicine* 28, vol. 2 (August 1996): 136-44.
- Kennedy, Robert H. "Community Responsibility in the Care of Emergency Patients." *Journal of Oral Surgery* 27, no. 7 (July 1969): 533-37.
- \_\_\_\_\_. "Editorial: A Dilemma in Emergency Department Coverage." *Journal of Trauma* 9, no. 9 (September 1969): 821-22.
- \_\_\_\_\_. "The Emergency Department Situation." Lecture, meeting of the Committee on Trauma, April 22, 1966.
- \_\_\_\_\_. "Guest Editorial: Give the Emergency Room the Status It Deserves." *Hospitals* 31, no. 6 (March 16, 1957): 35-36.
- \_\_\_\_\_. "Lecture: Emergency Department Physicians: Their Capabilities, Contributions, Education, and Future Status." *Journal of Trauma* 14, no. 10 (October 1974): 894-901.
- Kiff, Aaron N. "The Architect Looks at the Emergency Room." *Hospitals* 31, no. 6 (March 16, 1957): 40-43.
- Kwass, S.K. "Social Class Difference in Emergency Room Attendance." Bachelor's thesis, Yale University, 1958.
- Lebowitz, M.D. and J.C. Malcolm. "Socioeconomic Analysis of the Alameda County Health Department Jurisdiction." *American Journal of Public Health* 54, no. 11 (1964): 1876.
- Lee, Richard, MD. Telephone interview by author. November 12, 2008.
- Lee, SS, JA Solon, and CG Sheps. "How New Patterns of Medical Care Effect the Emergency Unit." *Modern Hospital* 94 (May 1960): 97-101.

- Leitzell, James D. and Leonard M. Riggs. "Sounding Boards, Emergency Medicine: Two Points of View." *The New England Journal of Medicine* 304, no. 8 (February 19, 1981): 477-83.
- Likoff, William. "Care of the Patient with Acute Myocardial Infarction: Prehospital Phase." In *The Twenty-Third Hahnemann Symposium*, edited by Wilbur W. Oaks, Stanley Spitzer, and John H. Moyer, 19-25. New York: Grune and Stratton, 1972.
- Lindquist, Charles A. "Hospital Facilities Required for Emergency Care." *Bulletin of the American College of Surgeons* 38, no. 6 (November-December 1953): 378-80.
- Ludmerer, Kenneth. *Time To Heal: American Medical Education from the Turn of the Century to the Era of Managed Care*. New York: Oxford University Press, 1999.
- Maisel, Albert Q. "Emergency Service: Medicine's Newest Specialty," *Reader's Digest*, June 1965.
- Manegold, Richard F. and Michael H. Silver. "The Emergency Medical Care System." *Journal of the American Medical Association* 200, no. 4 (April 1967): 300-304.
- Mangold, Karl and Charles F. Frey. "The Physician and the Emergency Health Service System." *Postgraduate Medicine* 55, no. 1 (January 1974): 197-204.
- Marinakos, P.A. and W.E. Landgraf. "The Changing Pattern of Emergency Room Service." *Hospital Topics* 41 (December 1963): 40-43.
- McKenny, Ellen M. "History of the Motorized Ambulance Transport." *Military Medicine* 132 (October 1967): 819-22.
- "Medicine: Curing the Emergency Room." *Time*, November 22, 1971.
- Miller, James B. "A Brief Military History of Today's EMS." *Emergency Medical Services* 30, no. 5 (May 2001): 148.
- Miller, Veronica F. "Community Service: Philosophy of a Hospital Emergency Room." *Hospitals* 26, no. 11: 84-86.
- Mills, James D. "The Alexandria Plan." *Emergency Department: A Handbook for the Medical Staff*. Chicago: American Medical Association, Department of Hospitals and Medical Facilities, 1966.
- \_\_\_\_\_. "Emergency Medicine, 1947-1987: A PGM Retrospective." *Postgraduate Medicine* 81, no. 3 (February 15, 1987): 81-85, 88.
- \_\_\_\_\_. "Emergency Medicine: A Developing Specialty." *Journal of the American College of Emergency Physicians*, March-April 1973, 113-15.
- \_\_\_\_\_. "A Method of Staffing a Community Hospital Emergency Department." *Virginia Medical Monthly* 90 (October 1963): 518-19.

- Mulder, David S. "Specialization in Surgery – Implications For Trauma-Related Disciplines." *Bulletin of the American College of Surgeons* 73, no. 5 (May 1988): 15-25.
- Murphy, Stephen P. "Organization and Management of Emergency Care and Emergency Hospitals." *International Anesthesiology Clinics* 9, no. 1 (1971): 189-218.
- Nahum, L.H. "The 'Emergency Room.'" *Connecticut Medicine* 29, no. 11 (November 1965): 760-63.
- Neel, Spurgeon. *Medical Support of the U.S. Army in Vietnam 1965-1970*. Washington, D.C.: Department of the Army, 1973.
- Night, Aubrey L., Alan M. Adelman, and Jeffery Sobal. "House Call Practices Among Young Family Physicians." *Journal of Family Practice* 29, no. 6 (December 1989): 638-42.
- Noer, Rudolf J. "Emergency Care of Critically Injured." *Journal of Trauma* 3, no. 4 (July 1963): 331-39.
- "Outgrown Central Supply Now Smooth-Functioning Emergency Room." *Hospitals* 31 (March 16, 1957): 48-52.
- Pantridge, J.F. and J.S. Geddes. "A Mobile Intensive-Care Unit in the Management of Myocardial Infarction." *The Lancet* 2, no. 7510 (August 5, 1967): 271-73.
- Paxton, H.T. "How E.R. Staffing Methods Are Changing." *Hosp Physician* (October 1966): 67-68, 80.
- Payne, W.R. "Full-Time Physician Service in the Emergency Department." *Hospitals* 38, no. 9 (November 1, 1964): 57-58, 62.
- Perloff, Richard M. *Political Communication: Politics, Press, and Public in America*. Mahwah, NJ: Lawrence Erlbaum Associates, 1998).
- Peters, Joseph P. "Essentials of Hospital Emergency Service." *Hospitals* 31, no. 6 (March 16, 1957): 44-47.
- Phelan, John T. "Some Responsibilities of the Physician in the Care of the Emergency Room Patient." *The Journal – Lancet* 78, no. 12 (December 1958): 508-9.
- "Physicians Volunteer Emergency Services." *Los Angeles Times*, February 14, 1966.
- Pinson, Jane. Telephone interview by author. December 29, 2008.
- Podell, David, MD. Telephone interview by author. November 7, 2008.

Polzer, Karl. "The Federal Employees Health Benefits Program: What Lessons Can It Offer Policymakers?" *Issue Brief National Health Policy Forum* 12, no. 715 (12 March 1998): 1-6.

Porter, Roswell. "Our Enemy: The Emergency Room." *Medical Economics*, July 15, 1963, 71-75.

Powers, Leonard S. "Hospital Emergency Service and the Open Door." *The Michigan Law Review Association* 66, no. 7 (May 1968): 1455-86.

Redding, F.J. "Physician Coverage of Hospital Emergency Departments in San Diego County, California." Bachelor's thesis, The George Washington University, 1966.

Reiber, Norman H. "Survey of Emergency-Room Usage Gives Guidelines for Improvement." *Hospital Topics* 43, no. 12 (December 1965): 69-73.

Reifler, C.B. "The Grace-New Haven Community Hospital Emergency Room: A Descriptive Study of the Patient Population." Master's thesis, Yale University School of Medicine, Department of Public Health, 1957.

Reinfrank, Ralph F., Papers. The Hamilton Archives at Hartford Hospital, Hartford, CT.

Robert Wood Johnson Foundation. *Special Report, Number 2: Neglected for Years, Emergency Medical Services Now Seem To Be Catching On in the U.S.* Princeton, NJ: The Robert Wood Johnson Foundation, 1977.

Rosen, Peter, MD. Telephone interview by author. December 23, 2008.

Rosen, Peter. "History of Emergency Medicine." *Conference on the Role of Emergency Medicine in the Future of American Medical Care*. Williamsburg, VA: April 17-20, 1994.

Ruddock, Andrew E. "Federal Employees Health Benefits Program I. History and Future of the Federal Program - 1964." *American Journal of Public Health Nations Health* 56, no. 1 (January 1966): 50-53.

Sanborn, Earl B. "Emergency Room Experience in a Community Hospital." *American Journal of Surgery* 97 (May 1959): 663-66.

Schamban, Alexander. "Must a Physician Refer a Patient to a Specialist?" *Medical Times* 92, no. 10 (October 1964): 152a-53a, 156a.

Schneewind, John H. and Warren H. Cole. "Emergency-Room Service in Hospitals." *American Journal of Surgery* 98 (October 1959): 544-49.

Schrivver, John, MD. Telephone interview by author. November 7, 2008.

Schwab, Orrin. *A Clash of Cultures: Civil-Military Relations During the Vietnam War*. Westport, CT: Greenwood Publishing Group, 2006.

- Shah, Manish N. "The Formation of the Emergency Medical Services System." *American Journal of Public Health* 96, no. 3 (March 2006): 414-23.
- Shambaugh, George E. "The Specialist in Medicine." *Journal of the American Medical Association* 59 (1912): 1088-89.
- Shortliffe, Ernest C., T. Stewart Hamilton, and Edward H. Noroian. "The Emergency Room and the Changing Pattern of Medical Care." *The New England Journal of Medicine* 258, no. 1 (January 2, 1958): 20-25.
- Skudder, Paul A., and Preston A. Wade. "The Organization of Emergency Medical Facilities and Services." *Journal of Trauma* 4, no. 3 (May 1964): 358-72.
- Skudder, P.A., J.R. McCarroll, and P.A. Wade. "Hospital Emergency Facilities and Services, A Survey," *Bulletin of the American College of Surgeons* 46 (March-April 1961): 44-50.
- Snoke, Albert W. *Hospitals, Health, and People*. New Haven: Yale University Press, 1987.
- Snoke, Albert W., Papers. Yale-New Haven Hospital Records 1904-1977. Manuscripts and Archives, Yale University Library, New Haven, CT.
- Springall, W. Herbert. "The Hospital Emergency Room." *Arizona Medicine* 21 (September 1964): 661-62.
- Stahl, Richard, MD. Interview by author, New Haven, CT. November 11, 2008.
- Starr, Paul. *The Social Transformation of American Medicine: The Rise of a Sovereign Profession and the Making of a Vast Industry*. New York: Basic Books, 1983.
- Stepnick, Larry. *From Infancy to Rebirth: Celebrating 50+ Years of Medical Group Practices and Their Contributions to Medicine*. Alexandria, VA: American Medical Group Association, 2000.
- Stevens, Rosemary. *In Sickness and in Wealth: American Hospitals in the Twentieth Century*. New York: Basic Books, 1989.
- Stevens, Robert and Rosemary Stevens. *Welfare Medicine in America: A Case Study of Medicaid*. Somerset, NJ: Transaction Publishers, 2003.
- Torrens, Paul R. and Donna G. Yedvab. "Variations Among Emergency Room Populations: A Comparison of Four Hospitals in New York City." *Medical Care* 8, no. 1 (January-February 1970): 60-75.
- Tuveson, R.F. "Is Emergency Service Becoming a Specialty." *Modern Hospital* 102, no. 5 (May 1969): 112-13, 160.
- "Trauma Program Receives Grant from Hartford Foundation." *Bulletin of the American College of Surgeons*, September-October 1965, 250.

- Tyner, George S. "The Emergency Room." *Hospital Progress* 46 (January 1965): 127-28.
- U.S. Bureau of the Census. *Census of Population and Housing, 1790-1980*. Washington, DC: Bureau of the Census.  
<http://www.census.gov/prod/www/abs/decennial/index.htm> (accessed December 22, 2008).
- U.S. Bureau of the Census. *Historical National Population Estimates: July 1, 1900 to July 1, 1999*. Prepared by the Population Division. Washington, DC: Bureau of the Census, 11 April 2000.  
<http://www.census.gov/popest/archives/1990s/popclockest.txt>  
 (accessed December 22, 2008).
- U.S. Bureau of the Census. "No. HS-50 Federal Government - Employment: 1901 to 2002." In *Statistical Abstract of the United States: 2003*, Washington, DC: Bureau of the Census, 2003. [www.census.gov/statab/hist/HS-50.pdf](http://www.census.gov/statab/hist/HS-50.pdf) (accessed December 28, 2008).
- Wallace, Wayne A. and Paul N. Yu. "Sudden Death and the Pre-Hospital Phase of Acute Myocardial Infarction." *Annual Review of Medicine* 26 (1975): 1-7.
- Webb, M.L. "The Emergency Medical Care System in a Metropolitan Area." Master's thesis, The School of Hygiene and Public Health of The Johns Hopkins University, 1969.
- Weihl, Albert, MD. Telephone interview by author. November 5, 2008.
- Weinerman, E. Richard. "Changing Patterns in Medical Care: Their Implications for Ambulatory Services." *Hospitals* 39 (December 16, 1965): 8.
- Weinerman, E. Richard, Robert S. Ratner, Anthony Robbins, and Marvin A. Lavenhar. "Yale Studies in Ambulatory Medical Care: V. Determinants of Use of Hospital Emergency Services." *American Journal of Public Health* 56, no. 7 (July 1966): 1037-56.
- Weinerman, Richard E., and Herbert R. Edwards. "Yale Studies in Ambulatory Medical Care: 'Triage' System Shows Promise in Management of Emergency Department Load," *Hospitals* 38, (November 16, 1964): 55-62.
- Weisz, George. *Divide and Conquer: A Comparative History of Medical Specialization*. New York: Oxford University Press, 2006.
- White, Michael J., and Peter R. Mueser. *Changes in the Demographic Determinants of U.S. Population Mobility, 1940-1980*. Bethesda, MD: Urban Institute, November 1988.
- Wiegenstein, John. "What, Another Milestone? The First Steps in the Founding of a Specialty." *Annals of Emergency Medicine* 30, no. 3 (September 1997): 329-32.

- Wiegenstein, John G. "The Need For Training Physicians in Emergency Medicine." *Journal of Trauma* 12, no. 5 (May 1972): 375-84.
- Walt, Alexander J., ed. "Panel: 'Role of the Specialist in the Emergency Room.'" *Journal of Trauma* 19, no. 7 (July 1979): 481-91.
- Willis, Stephen. "Our Emergency Room Was a Mess." *Hospital Management* 92 (September 1961): 31, 51.
- Wilson, David B. "Emergency Department Linked With Small Nursing Unit." *Hospitals* 31, no. 6 (March 16, 1957): 53-54.
- Winchester, James H. "Medical Miracles in South Vietnam." *Popular Science*, July 1967.
- Yale-New Haven Hospital Annual Reports, 1961-1974. Yale-New Haven Hospital Archives, New Haven, CT.
- Zink, Brian J. *Anyone, Anything, Anytime: A History of Emergency Medicine*. Philadelphia: Mosby-Elsevier, 2006.
- \_\_\_\_\_. "Reflections on the Past 25 Years in Emergency Medicine: Learning From Our History." *Journal of Emergency Medicine* 35, no. 1 (July 2008): 1-3.