

MARSHALL W. RAFFEL

**The U.S.
Health
System**
Origins
and Functions

The U.S. Health System: Origins and Functions

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A WILEY MEDICAL PUBLICATION

JOHN WILEY & SONS

New York • Chichester • Brisbane • Toronto

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Library of Congress Cataloging in Publication Data:

Raffel, Marshall W.

The U.S. health system.

(A Wiley medical publication)

Includes index.

1. Medical care—United States. 2. Public health—United States. I. Title.

RA395.A3R33 362.1'0973 80-86

ISBN 0-471-04512-8

Printed in the United States of America

10 9 8 7 6 5 4 3 2 1

The U.S. Health System: Origins and Functions

To Norma
and
Robert, Dorothy, and Timothy

Preface

... [I]n reality, complete freedom from disease and from struggle is almost incompatible with the process of living.

Life is an adventure in a world where nothing is static; where unpredictable and ill-understood events constitute dangers that must be overcome, often blindly and at great cost; where man himself, like the sorcerer's apprentice, has set in motion forces that are potentially destructive and may some day escape his control. Every manifestation of existence is a response to stimuli and challenges, each of which constitutes a threat if not adequately dealt with. The very process of living is a continual interplay between the individual and his environment, often taking the form of a struggle resulting in injury or disease. The more creative the individual the less he can hope to avoid danger, for the stuff of creation is made up of responses to the forces that impinge on his body and soul. Complete and lasting freedom from disease is but a dream remembered from imaginings of a Garden of Eden designed for the welfare of man.

René Dubos
Mirage of Health

This process of living, with its inevitable spin-offs of injury and disease, has led to the establishment of one of society's largest industries: health. To prevent, to cure, to maintain to the greatest extent possible, have led the American people in 1978 to allocate \$192,400,000,000 to the health sector of the economy. This represents 9.1% of the Gross National Product—9.1% of the value of all goods and services produced in the United States that year. Quite a sum! Quite an industry!

It is an industry that is labor intensive at all levels, from the most highly trained professional to the unskilled, with an estimated 1 out of every 14 employed persons in the United States in a health related occupation. It is an

industry forever changing in response to new health problems, to new knowledge, which permits the treatment of old problems in new or more effective ways, and to new technology. It is an industry constantly striving to improve the quality of professional education and the quality of professional care. It is an industry pressured by more and more people needing care or demanding care, and it responds as positively as it can, although its responses are limited by the knowledge at its disposal and by the resources available to utilize the knowledge it has.

It is an industry beset by growth, increasing complexity, limited resources, and rising costs, which result, inevitably, in problems of citizen access to services, in problems of raising money to pay for services, and in the need for increased coordination of a complex system in terms of ongoing operations and development. These are essentially administrative and planning problems, and the industry is turning more and more to people trained in these areas.

As part of the effort to train health administrators and health planners, an increasing number of colleges and universities are offering introductory courses on the health system in order to provide students in health administration and health planning, as well as students in other allied health programs, with an opportunity to learn more about this enormous industry and to understand its development, its operations, its problems, and its trends. This text is designed to be a resource for those students.

Major portions of the text were critically reviewed by my colleague at Penn State, Stanley P. Mayers, Jr., and by Harold J. Cohen of Ithaca College. Their critiques were both thoughtful and helpful, and their efforts are much appreciated. Also at Penn State my colleagues Joel Lee and Andreas Muller were helpful, at various stages, as I sought to check interpretations and to verify facts. They are not responsible, however, for the interpretations or for any remaining errors; for these, I alone am responsible.

A special debt is owed to the baccalaureate students of HPA 101, from Cindy and Cheryl to the hundreds who followed. They may not know or fully appreciate it, but they were all the inspiration.

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1

History of Medical Practice and Medical Education in America

MEDICAL PRACTICE AND TRAINING IN COLONIAL AMERICA

The physician today is a person vastly different from the practitioner in seventeenth- and eighteenth-century America. Today's medical practitioner has pursued a vigorous course of study and clinical practice under the close supervision of faculty who are typically at the forefront of the health professions. Not only must today's medical practitioner pass courses in a premedical curriculum at a college or university and those offered by the medical school, but he or she must also pass the state licensing exam. Nearly all practitioners, moreover, now undertake at least three years of additional supervised specialty training in a nationally accredited residency training program on completion of medical school. The end result is a person licensed by the state government to practice medicine, a physician who, it can safely be assumed by the patient, is competent to diagnose and treat most illnesses and to know when to refer the patient for specialist care.

This is not to suggest that every physician is excellent, that all are competent, that all provide the best possible medical care, or that diagnostic and treatment errors are not made. It is to say, rather, that the physician who is consulted is probably a competent physician and that the patient has reasonable grounds for believing this.

Not so in colonial America. In that period, most "physicians" were trained under an apprenticeship system, and there was no organized method for testing the competence of those practitioners or their students, nor were there effective licensing bodies that could attest, by the granting of a license, to the physician's

competence. Packard quotes from William Smith's 1758 *History of New York* (1, p.284):

A few physicians among us are eminent for their skill. Quacks abound like locusts in Egypt, and too many have been recommended to a full practice and profitable subsistence; this is less to be wondered at, as the profession is under no kind of regulation. Loud as the call is, to our shame be it remembered, we have no law to protect the lives of the King's subjects from the malpractice of pretenders. Any man, at his pleasure, sets up for physician, apothecary, and chirurgeon. No candidates are either examined, licensed or sworn to fair practice.

Smith's reference to "physician, apothecary, and chirurgeon" reflects the then British categorization of practitioners. The physicians typically held university medical degrees and practiced what we would now call internal medicine. The apothecary was not a physician or university trained. He was trained as an apprentice and was concerned with the dispensing of drugs. Like today's pharmacist, people frequently sought medical advice from the apothecary, and the apothecary became, in Britain, the equivalent of a general practitioner. The chirurgeon, or surgeon, was also apprentice trained.

These distinctions became blurred in colonial America, for very few physicians came to the New World, and there were, at Smith's time, no medical schools in America to train them. Furthermore, at Smith's writing, there was only one hospital in all the colonies, the Philadelphia Hospital, and it had been open for only a few years.* The first medical school was established in 1756 at the College of Philadelphia (later, University of Pennsylvania). The second school was King's College (later, Columbia University), founded in 1768. By the time of the Revolutionary War, neither school had made significant medical manpower contributions to the total number of medical practitioners in the colonies; accurate figures are hard to obtain, but it would appear that the Philadelphia school graduated fewer than ten students a year from 1768 to 1773; the first class at King's College in 1769 consisted of two.

Shryock notes that on the eve of the Revolutionary War, "it has been

* Today, the physician and surgeon are both graduates of accredited medical schools and hold either the degree of Doctor of Medicine (M.D.) or Doctor of Osteopathy (D.O.). In American terms today, the physician is any M.D. or D.O., whereas in Britain the physician is still the equivalent of our specialist in internal medicine. The surgeon in America is thus a physician, with the added specialty qualifications in surgery. The apothecary has, in America, become the pharmacist and is the graduate of a university pharmacy program.

estimated that . . . there were about 3,500 established practitioners in the colonies and that not more than 400 of these had received any formal training. Of the latter, only about half—or barely more than 5 per cent of the total—held degrees” (2, p.9). Most of the 200 degree holders in medicine were from European, and mainly British, medical schools.

Some of the early nonmedical degree practitioners were simply learned men* — ministers, planters, lawyers, teachers—who could gather a smattering of knowledge from books they read and apply that knowledge because there were no alternatives. As Shryock puts it

A man who had graduated from an arts college, read in medicine, and acquired some experience was the nearest thing to a formally trained practitioner that the colonial environment produced before the 1760s. As late as about 1830, it may be added, the University of Virginia still provided instruction in medicine for all its undergraduate students (2, p.16)

Others who aspired to medical practice apprenticed themselves for a number of years to established physicians. Upon completion of the training period, during which time the apprentice would watch and assist his preceptor and read his books, the physician would give the apprentice a signed testimonial that would constitute the certificate of proficiency. The real competence of the “graduate” from apprentice training would be as good or as bad as the preceptor, as the books available, and as the conscientiousness of the apprentice.

Samuel Treat, for example, apprenticed to Dr. John Redman in Philadelphia and received his medical certificate in 1765 after nearly four years’ service. Treat was fortunate in being able to learn from more than just one teacher: the Pennsylvania Hospital opened in 1752, and Treat was afforded the opportunity to attend there during his apprentice period. He was also fortunate in being in Philadelphia where some learned physicians began to offer lectures in various subjects. Treat attended the anatomical lectures offered by Dr. William Shippen, Jr. Treat’s medical certificate was thus signed by many, as quoted in Packard (1, p.278):

*At this point, the use of the word *men* is appropriate, for medicine was a male domain. Female involvement in “medical” matters was confined to midwifery, and to the extent that some of them received formal training, it was frequently provided by medical practitioners. The first female medical-school graduate was from the Geneva Medical College around 1850. See Shryock, R.H.: “Women in American medicine,” *Journal of the American Medical Women’s Association* Vol. 5; No. 9 September 1950: (reprinted in Shryock, R.H.: *Medicine in America*. Baltimore, Johns Hopkins Press, 1966).

MEDICAL CERTIFICATE TO MR. SAMUEL TREAT, 1765. PHILADELPHIA.

This is to certify to all whom it may concern that Mr. Samuel Treat hath served as an Apprentice to me for nearly four years, during which he was constantly employed in the practice of Physic and Surgery under my care, not only in my private business, but in the Pennsylvania Hospital, in which character he always behaved with great Fidelity and Industry. In Testimony of which, I have thereunto set my hand this first day of September, One Thousand Seven hundred and Sixty-five.

(Signed) John Redman.

We whose names are under written do Certify that Mr. Samuel Treat hath diligently attended the practice of Physic and Surgery in the Pennsylvania Hospital for several years.

(Signed) Thos. Cadwalader,
Phineas Bond,
Th. Bond,
Wm. Shippen,
C. Evans.

This is to certify that Samuel Treat hath attended a course of Anatomical Lectures with the greatest diligence and assiduity.

(Signed) William Shippen, Jr

More commonly in the colonial period, the medical certificate was signed by only one physician. Still others, as Corner notes (3, p.3) “probably had no other qualifications beyond an interest in the sick and assurance enough to hang out a shingle.”

Apprenticeship to a single physician was the more common approach to training for a long period of time because there was, until 1752, in Philadelphia and 1791 in New York, no institution that could rightly be called a hospital.* With the opening of the Pennsylvania Hospital, however, a significant new pattern of training began to develop. Physicians not only began to take their apprentices with them to the hospital to assist (as Dr. John Redman did with

*The New York Hospital apparently served briefly during the Revolutionary War as an American Military hospital until the British occupied New York, at which time it became for seven years a barracks, and possibly also a military hospital, for British and Hessian soldiers. It was not until 1791 that the hospital admitted its first civilian patient. See *Hospital Care in the United States*, Commission on Hospital Care. New York, The Commonwealth Fund, 1947, p.439.

Samuel Treat) but also they began to allow other students to follow them as they examined and treated their hospital patients. So many students sought this privilege that the hospital resolved in 1763: It is the unanimous opinion of the Board that such of them at least who are not apprentices to the Physicians of the House, should pay a proper Gratuity for the Benefit of the Hospital for their privilege (1, p.323).

By 1773, the hospital decided to regularize this system so that an aspiring physician could pay a fee to the hospital and be formally apprenticed to the institution for five years, upon completion of which the institution would grant a certificate. With the establishment in 1765 of the medical department at the University of Pennsylvania, the hospital apprentices attended lectures there. Packard states that this practice continued until 1824, when the hospital required that future residents had to be regular graduates from the medical college before taking up their hospital appointment. (1, p.327). Packard also provides us with a sample Pennsylvania Hospital certificate (1, p.281):

This is to Certify that . . . , son of . . . , West Jersey, entered regularly as a pupil of the Pennsylvania Hospital, . . . , 1763, and continued his attendance with Diligence and Application, to . . . , 1764, during which time we hope and have reason to believe he has made considerable Progress in the Knowledge of Anatomy and the Practice of Physick and Surgery, therefore wishing Happiness and success we give from under our hands and the seal of the Corporation, this Testimonial of our Esteem and Approbation.

Lecture series on various medical subjects were sometimes provided by the better-trained physicians in the larger cities long before the founding of medical schools. The lecturers were mostly physicians trained abroad, some of whom were products of colonial apprentice training who went overseas subsequently for the additional training, chiefly to Scotland and England. Typically, fees were collected for their lectures, and even after the founding of medical schools, professors were paid by the students for the privilege of attending their lectures.

Many of these early practices continue today in a somewhat modified form. Aspiring physicians are now apprenticed not to individual physicians or to hospitals, but to an entire faculty, and the assisting process in the treatment of patients continues as an important part of clinical training in all medical schools. Students also pay today fees for lectures and for apprenticing, but instead of paying individuals, the preceptor, the lecturer, or the hospital, the fee is now given as tuition to the medical school.

NINETEENTH-CENTURY DEVELOPMENTS

The development of medical schools during the eighteenth century was slow. We have noted already the schools in Pennsylvania and New York. The only other schools to be developed were at Harvard (1783) and at Dartmouth (1797). We should not think of these schools as being like those today. Three or four faculty members were sometimes all that were available. But not always, for Corner tells us that Dartmouth “appointed the formidable Harvard graduate Nathan Smith to be a one-man medical faculty. For ten or twelve years he alone ably taught all the courses” (3, p.57). The science and art of medicine were extremely limited in what they could offer by way of cure, and one can appreciate, therefore, the great appeal in the nineteenth century of cultists and quacks. However weak as the first schools were, they marked an important forward step. Stevens notes that “the foundation of the medical school in Philadelphia . . . was a part of the movement by university-trained physicians to organize and rationalize medicine on a European model and to institute recognizable educational standards” (4, p.17). The early medical faculties at Pennsylvania, Harvard, and Columbia and even at Dartmouth were dominated by men with European medical training. Indeed, as the number of medical schools grew, and as more and more American medical graduates went abroad—to Edinburgh, London, Paris, and other cities of Europe—many returned and gravitated to the medical-school faculties, and they championed reform.

It is typical of most endeavors that those who are most expert seek to raise standards, to elevate the level of practice. So it was in medicine. It was evident in the founding of university medical schools, the early establishment of medical societies, and the initiation of medical journals—all designed to share knowledge, to communicate, to improve quality.

Medical licensure was rarely effective in the colonial and postcolonial periods in large measure because there was an insufficient number of well-trained practitioners. Early attempts at licensure included the establishment of state licensing boards, granting authority to the medical society, and recognition of the university M.D. degree both as entitlement to a license and as an alternative to licensure by the medical society or state licensing board. Georgia was the first state to restrict medical licenses to graduates of medical schools (1821). However, opposition to licensure was strong from the apprentice-trained physicians, to whom licensure loomed as a threat, from other kinds of quasi-health practitioners, whose practices were threatened, as well as from many segments of the lay population that resented medical elitism. Resentment against the profession is illustrated on the matter of vital-statistics registration: “In Georgia . . . the legislature ‘fairly hooted’ when a registration bill was

introduced in 1849, and the whole matter was viewed as just another 'trick of the doctors'." (5). By the middle of the nineteenth century, many licensure acts either had been repealed or so drastically altered that they were rendered ineffective. (4, pp. 26-28)

But the trend toward formalized medical education was firmly established. As the decades advanced in the nineteenth century, more and more medical practitioners came from medical schools; a decreasing percentage came from the apprenticeship system. In the absence of a strong licensing mechanism, the measure of a physician's competence came to rest on the standard of whether or not the physician had graduated from a medical school with an M.D. degree.

This encouraged development of a large number of new medical schools, some at universities that were ill-equipped to support and nourish them and a great many free-standing schools with no university ties.

The notion of university-based medical education, it should be remembered, came to this country primarily from Scotland; University of Edinburgh-trained physicians strongly influenced the structuring of the schools at Pennsylvania and Columbia. University-based medical education was also dictated by the absence of strong hospitals in colonial America that could provide the milieu for excellence. In England, however, there developed a number of medical schools around such long-established hospitals as St. Thomas' and Guy's, from which came the acceptable model of free-standing and hospital-based schools in nineteenth-century America. By then, hospitals were more common in the states than they were in the latter part of the eighteenth century, though not all of the new medical schools could claim meaningful hospital affiliation.

Some of the new non-university schools were good and had reputable faculties. Some of the schools were weak and were allegedly set up to make money since the professors in most all of the schools (good and bad) were mostly paid directly by each student for attendance at lectures. Stevens cites the first of the proprietary schools as one established by three local physicians in Castleton, Vermont, in 1818 (4, p.25). Whether it was an improvement over apprenticeship to a single physician we can only guess, but the school did survive until 1862. Norwood, moreover, tells us that for some time the school was, in form, the medical department of Middlebury College and that some of its faculty were people of considerable ability (6, pp.204-208). In Boston, among the better private schools, Packard cites the Tremont Street School, established in 1838 by four physicians, including Oliver Wendell Holmes, and the Boylston Medical School (1, pp.446-447).

The Tremont Street School flourished and offered, over time, lectures in embryology and anatomy, surgical pathology, chemistry, auscultation and percussion, and microscopic anatomy. The faculty was mostly moonlighting Harvard faculty, something we should not be surprised at, since rarely did a

faculty member in those days rely solely on medical-school income. The school thus had a close relationship with Harvard and eventually became Harvard's summer program.

The Boylston Street School opened in 1849. Despite opposition from Harvard, it got degree-granting authority in 1854. It had a good faculty, illustrated by the fact that soon after receiving degree-granting authority, Harvard recruited the best of them, and the school "faded out of existence" (1, p.447).

But even the quality of education at the "better" schools left much to be desired. Burrow tells us (7, p.9):

When Charles Eliot became president of Harvard in 1869 (the year that the institution provided its first microscope for medical students), his early effort to institute written examinations for medical degrees met opposition from the director of the medical school who asserted with little exaggeration that a majority of the students could hardly write.

Under such conditions, one can sympathize with those in the population who relied on quacks of various sorts or who cherished their apprentice-trained doctors as being as good as any coming out of a university medical school. Medical science was rather primitive or, at best, only beginning to emerge into the mainstream of medical education.

During the next decade, Harvard increased its length of training from two to three years, instituted written exams, and then required for admission a college degree or the passing of a qualifying exam. In 1892, the length of training was lengthened again, to four years.

It was noted previously that a great many of the early leaders in American medical education received training in Britain and France. In the latter part of the nineteenth century, the development of scientific medicine reached its height in Germany and Austria. Bonner has estimated that some 15,000 Americans undertook serious medical studies in German-speaking universities, 10,000 of these drawn to Vienna. Many others (over 10,000 more in Vienna), he estimates, familiarized themselves with the medical scene from short visits and vacation tours, and the medical faculties at Johns Hopkins, Harvard, Yale, and Michigan were dominated by professors who had spent time at German-speaking universities (8, pp.39,60-64,69). How many others received training during this period in France, Britain, and other centers of European excellence is not known. But the German influence at this stage was critical. Shryock states (9, p.30)

German-trained leaders in the better schools (Hopkins, Harvard, Michigan) found the continued mediocrity of medical education intolerable. Medical professors in this country still retained private practice, although incomes from apprentices vanished when this practice declined, after 1870, with the lengthening of the curriculum. Hence, professors were able to infiltrate the medical societies as practitioners, and appealed to the AMA (American Medical Association) to reform the schools. The latter [schools], because of their power to license, were primarily responsible for the low state of both training and practice; and the reformers—consciously or unconsciously—returned to an earlier program in appealing for control by medical societies. The latter, in turn, succeeding in persuading most states to re-establish the examining and licensing boards which had earlier been abandoned; and such bodies (1875 to 1900) were able to exert some pressure for better educational standards. By 1900, moreover, liberals in the AMA secured its reorganization, and in 1904 set up a Council on [Medical] Education which began to rate the various schools.

Although the AMA at its founding in 1847 had as a primary goal the reform of medical education, its efforts were diluted for many years because so many of its members had an interest of one sort or another in the continuance of the weaker schools. One can surmise that this vested interest was not only financial investment and return but also included a desire to buy time so that the improvements could be made, an emotional tie by some practitioners who did not want to see their schools put out of business, and a certain skepticism about what reform would accomplish, for the discoveries of Lister on antiseptic surgery and Pasteur on germs were not to come until the 1860s, and anesthetic was introduced into surgery only in 1846. One can also speculate a sometime resistance resulting from impolitic expressions from medical-school faculty whose words seemed arrogant and condescending to the more traditionally trained physician.

A similar problem arose in 1876 when 22 medical schools organized the Association of American Medical Colleges (AAMC) as part of the effort to improve the quality of medical education. Coggeshall notes that “the embryo organization soon foundered over an issue involving its principal concern for higher standards. The question was whether graduation requirements should be extended to three years rather than two” (9, p.49).

Both the AMA and the AAMC thus encountered the problem that besets all representative bodies: to continue to exist, the organization, like the elected politician, must retain the support of its constituency: get too far ahead and the