BOOK I

July 29, 2019

THE HISTORY OF GENERAL PRACTICE IN AMERICA, HOW THE GENERALIST BECAME A SPECIALIST

Dedicated to the memory of my father, John Alexios Zervanos The source of my inspiration And to my wife Diana for her incredible patience and support

INTRODUCTION INTRODUCTION to BOOK I

Founded in 1969, Penn Medicine Lancaster General Health's Family Practice Residency Program in Lancaster, Pennsylvania was among the first approved family medicine residency programs in the United States. I was its founding director, and retried from the directorship in 2002, but stayed on a part time basis in my emeritus status caring for my patients and participating as a preceptor, supervising our residents in our famiy practice center. In December, 2019, when I fully retire I will have been with our health system and our residency program for more than 50 years.

In my semi-retirement, I decided to write a book on the history of general practice and family medicine in America and explore why and how the generalist became a specialist. It started out as one book, but it turned into a trilogy. I wanted the story to include a history of our residency program, but would not be able to do this well, without describing the historical development of general medical practice in Lancaster County and what historical role Lancaster General Hospital played in medical education.

Book I gives an account of the evolution of general medical practice in America, and how medical science advanced to force America's medical education system to become one of the best in the western world. These changes promoted the development of the specialties which ultimately led to making the generalist a specialist.

Book II provides a backdrop of the evolution of general medical practice in Lancaster County, as well as a history of Lancaster General Hospital and its role in medical education, leading to the establishment of its family practice residency program in 1969.

Book III is the story of Lancaster General's family practice residency program, to include its many trials and tribulations. It highlights the leaders who made it happen, the importance of developing trust of the medical staff, and the need to be innovative with the development of both an urban and a rural model family practice unit, and building community connections through community outreach. It also describes the program's role in the creation of the Family Medicine Education Consortium and the development of a highly regarded national continuing medical education program for primary care providers.

This literary endeavor represents the product of 50 years of focused education of the family physician. Although family medicine became a specialty, the family physician remains a generalist.



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PART 1: THE DEVELOPMENT OF AMERICAN MEDICINE

CHAPTER I: MEDICAL CARE AMONG THE EARLY SETTLERS

The early settlers relied on Indian folklore and whatever medical knowledge they brought with them. Not unexpectedtly, Indian medicine found its way into the medical folklore of early America.¹ It was the woman of the house who was the first line in the care of those who succumbed to illness. She might rely on herbs, poultices, or some mineral; and if that failed, she would call on the elder neighborhood woman, relative or friend for advice. If literate, she might rely on self-help books that she would have brought with her from Europe.²

THE EARLY PHYSICIANS AND THE PROVIDERS

The first known educated physicians with medical degrees were Europeans, who arrived in the 17th century in places like Jamestown, Virginia and Plymouth, Massachusetts, but they were relatively few. In New England, there was also a notable group of physician-priests or minister physicians, including Deacon Dr. Samuel Fuller, who had both theological training and medical training in Leiden, The Netherlands. Dr. Fuller arrived on the Mayflower in 1620 and cared for the Plymouth community and those in Salem. He also went to Charleston to help care for Governor Winthrop's settlers. Another minister-physician was Reverend Thomas Thacher, who in 1635 was mentored by the brilliant Charles Chauncy, the second president of Harvard College. Chauncy, an ordained Cambridge trained clergyman, also studied medicine at Cambridge. He ordained Thacher and promoted his medical career. Chauncy ordained his six sons and mentored them to become physicians. Thacher's influence in New England was strongly felt, as he wrote a self-help guide to instruct people how to help themselves in managing such common, yet significant afflictions, of smallpox and

¹ John Duffy, *The Healers, A History of American Medicine*, (Chicago: University of Illinois Press, 1979), 4.

² William Buchan, *Domestic Medicine: On the Prevention and Cure of Diseases*, (Edinburgh: Balfour; Auld; Smellie, 1769).

measles. He promoted a moderate diet, ample fluids and wisely warned against excessive medications.

The Dutch Huguenot refugee, Dr. Johannes La Montagne, acquired his medical degree at Leiden. He developed an excellent reputation, which earned him a seat on New York's Governing Council. Among New York's most well-educated physicians was Samuel Megapolensis, born in Koedyck, Holland, in 1634 and died in 1700. He spent three years at Harvard, and in 1658 returned to Holland, where he studied both theology and medicine at the Universities of Utrecht and Leiden. Another notable 17th century New York physician was Dr. Adriaen van der Donck, who studied Indian folklore and adopted many of the medical practices of the native Americans. The rapid growth of New York and its cosmopolitan character contributed to attracting additional physicians from Scotland, Germany, England, and France.³

The best-educated physicians of Europe were among the upper class of society, and it is no wonder there was little incentive for these doctors to want to migrate to the early settlements in places like Virginia, New England or New York State, where sixteenth and early-seventeenth century life was extremely difficult, if not treacherous.⁴

Medical education in most of the European schools was arduous. By the eighteenth century, it could take as long as thirteen years in France and England to acquire a medical degree. This included a baccalaureate degree, medical school, apprenticeship and finally licensure. However, it was not unusual in the Dutch schools, such as at Leiden, for a person with the means to buy his medical degree to shorten the course of study.⁵

THE BARBER SURGEONS

The English barber surgeons migrated to the colonies and at first limited their scope of practice to managing injuries, pulling of teeth, and the cutting and trimming of hair and beards. In England most of the early barber surgeons were considered tradesmen, a relatively low-class group, who

³ Duffy, *The Healers*, 21.

⁴ Ibid, 18.

⁵ Albert S Lyons and H. R. Joseph Petrucelli, II, *Medicine, An Illustrated History*, (New York: Harry N. Abrams, 1978), 445.

made their living with the cutting of hair and shaving men's beards with their razors. In times of war, they were called upon to use their knives and razors to amputate limbs. The red and white barber pole was a sign of their craft and symbolized their common practice of wrapping their bloody bandages around a pole. However, in the colonies they quickly acquired a more elevated rank, as the early settlers, relied on them for their medical care.⁶

THE MIDWIVES

Among the early practitioners in the American colonies were the midwives, who managed most of the women's health care needs, particularly birthing. They also provided much of the care for children. Their care was dependent on their intelligence and common sense, as they depended to a large extent on folklore, their experience and prevailing practices.⁷

THE PRIEST HEALERS

Among early American colonists, some believed that diseases were the work of the devil, and epidemics were a sign that God was displeased with His people. Suffering, in whatever form it might take, has been at the center of people's spiritual lives from the beginning of time. The clergy were not only there to render to the spiritual needs of their flock but were willing to respond to any sickness and to assist in the physical or emotional well-being of their congregants. Ministers, often the most educated among the early settlers, were familiar with the medical arts and the prevailing treatments of the most common ailments. They could prescribe herbs and even drugs based on formulae, which were described in books brought from Europe.⁸ European trained physicians were critical of these "faith-healers." In turn, physicians might be considered as religious skeptics, or accused as being irreligious, if not atheists. In general, however, physicians were regarded with respect in the community and were paid for their services. The priesthealers were known to treat the poor and wealthy alike, regardless of race or ethnic status, and did not charge a fee.⁹

⁶ Whitfield J Bell, Jr., *The Colonial Physician & Other Essays*, (New York: Science History Publications, 1975), 10-11.

⁷ Duffy, *The Healers*, 18.

⁸ Bell, The Colonial Physician & Other Essays, 15.

⁹ Ibid, 19-20.

In the mid-eighteenth century, the New Jersey Medical Society had reported that six of its thirty-six members were "pastor-physicians." In 1796 the medical society still had six clergymen out of ninety-one members, indicating that clergymen who included medical practice in their ministry were recognized as having requisite qualifications to serve as members of this medical society. Although this practice continued for a while longer, it dissipated over the new century.¹⁰

THE REVEREND COTTON MATHER (1663-1728)



Figure 1. Rev. Cotton Mather, an eminent New England clergyman, was an early advocate of inoculation against smallpox. Illustration, courtesy The Metropolitan Mus. of Art, New York)

One particular and eminent clergyman in New England, if not one of the most-colorful figures of his day, was Cottonus Matheris or Cotton Mather

¹⁰ Paul Starr, *The Social Transformation of American Medicine*, (New York: Basic Books, 1982), 40.

(1663-1728).¹¹ He and his father were highly respected and gifted preachers. They viewed illness holistically, involving both body and soul, and promoted the popular notion that pestilence originates from sin.¹² Mather also offered practical advice to include prescriptions, such as that for a patient sick with rheumatism:

"On the first day the patient was to be purged twice. On the second day, he was to be bled 12 to 14 oz. of blood, preferably from the foot. A day or so later the patient was to be purged twice more... On those days, he does not Purge, and Bleed, Give one of the powders. In the morning and another In the Evening, mixt in some Diet Drink made with Equal Parts Horse Radish Roots, and Bark of Elder Toots, Pine Budds, or the Second Bark, wood or Toad Sorrel, made it strong with the ingredient." (sic)¹³

Among the more highly controversial issues was Mather's firm, if not courageous, view on preventing smallpox by means of inoculation. This was hotly debated among the members of the Boston medical community. Mather, who had become a member of the Royal Society of England, learned in its published proceedings the effectiveness of inoculation to prevent the spread of smallpox. He was also influenced by his own Negro slave, Onesimus, who had undergone inoculation in Africa and considered immune against smallpox. Unfortunately, although smallpox was the cause of frightening epidemics with a high mortality, inoculation was not entirely safe. Inoculation-involved the deliberate application of matter from a smallpox pustule from a person afflicted with smallpox to a healthy individual. A significant percentage of those inoculated would come down with smallpox and some even died. This not only created caution, but also outright fear in the community about widespread adoption.¹⁴ One early convert was the influential Benjamin Franklin.

¹³ Duffy, The Healers, 29.

¹¹ Duffy, *The Healers*, 51.

¹² Fielding H Garrison, *An Introduction to the History of Medicine*, 4th ed. (Philadelphia: W.B. Saunders Co., 1929), 38.

¹⁴ Thomas H. Brown, "The African Connection, Cotton Mather and Boston Smallpox Epidemic of 1721-1722," JAMA: *The Journal of the American Medical Association* 250, no 15 (Oct 21, 1988): 2247-2248.

REVEREND HEINRICH MELCHIOR MUHLENBERG (1711-1787)



Figure 2. Rev. Heinrich Melchior Muhlenberg, an itinerant Lutheran minister, who provided medical advice to his congregants. Courtesy History of Montgomery County Pennsylvania, ed.by. T.W. Bean, 1884

Another of these priest-physicians was the highly respected German Lutheran minister and patriarch, Reverend Heinrich Melchior Muhlenberg (1711-1787)¹⁵. He even studied medicine for a short time in Halle, Germany before immigrating to the Americas in 1743. Muhlenberg wrote a remarkable diary describing his medical ventures. In it, he describes his experience with those who sought his medical advice. He consulted a book of various German formulae, utilizing medicines he brought with him from Germany as well as local herbs to make his own medicinals to minister to the sick. He treated minor trauma, common psychosocial ailments and common infections, such as measles and malaria, with reasonable success. The physicians, even those with a formal medical school education, did little better. His accounts of his medical reports are quite illuminating. He was called upon to care for the sick, not only to meet their spiritual needs, but also their physical needs. Although Reverend Muhlenberg had considerable

¹⁵ Herbert L Tindall, "Lancaster County Medicine in Colonial Days," In *Lancaster City and County Medical Society Our Medical Heritage, 1844-1994,* (Lancaster, PA: Lancaster City & County Medical Society), (1995), 12.

respect for most of the medical community, he had a great contempt for the quacks.¹⁶

Reverend Muhlenberg was an itinerant Lutheran minister, travelling among the Pennsylvania and New York congregations where he was called upon to serve the spiritual needs of his people. He also responded to the sick when asked for his healing interventions. He passed through Lancaster County on more than one occasion and was present on May 4, 1766, when the new Evangelical Holy Trinity Lutheran Church was consecrated. He preached the pastoral message and delivered an inspiring invocation.¹⁷ Heinrich Melchior Muhlenberg married Anna Marie Weiser, the daughter of the famous and highly esteemed Conrad Weiser of Berks County. They had eleven children, including three who became ministers and physicians, but also Revolutionary generals and political leaders. Two of Heinrich Melchior's three sons, who settled and made their mark in Lancaster, were Frederick Augustus Muhlenberg, a member of the Continental Congress and Dr. Henry Ernst Muhlenberg, who became the rector of Trinity Lutheran.¹⁸ The Muhlenberg physicians had ongoing impact and will be discussed in Chapter V.

Quoting from one of the entries in Reverend Muhlenberg's journal, he describes a particular encounter during a visit with his father-in-law, Conrad Weiser & his family, when in April 1748, he was to conduct Good Friday services and celebrate Easter. He writes:

"We had hardly gone to bed when Mr. Weiser became so deathly sick that it seemed that he might die any minute. It began with terrible vomiting, and before an hour had elapsed he had become almost totally cold and numb and there followed a cold sweat on the upper part of his body. From several symptoms, it almost appeared that it was pleurisy. It was found later, however, that it had 'colicky pituitosa,'* because the constitution gathered up all its powers in trying to expel the malignancy from the intestines. He gave us to understand that he had the most excruciating pain in the region of the navel and thought he could not live an hour longer. This incident was

¹⁶Bell, "The Colonial Physician & Other Essays, 13.

¹⁷ Franklin Ellis and Samuel Evans, *History of Lancaster Pennsylvania*, (Philadelphia: Everts & Peck, 1883), 439.

¹⁸ Ibid, 366.

a most grievous experience for me, first because shortly before the Zinzendorfers had made known their displeasure toward him and not indistinctly given him to understand that they commit him to the judgment of the 'Savior' by praying him to death...and Fifth, he has been a good supporter and helper of our congregations in *Tulpehocken (Reading) and Lancaster, though we do not trust in the* arms of men. I was no so much concerned about his salvation, for I hope that he stands in true repentance and a living faith which worketh by love, though, like all the saints, he has plenty of infirmities and faults which he seeks to lay aside by daily repentance. We had none of our blessed Halle medicine with us and there was no doctor at hand. I asked my dear colleagues to unite in prayer to God for his life and true welfare, which they did heartily; and in the meantime, I prepared a few poultices, since there was nothing else at hand, not even a clyster pipe. We sent for the nearest doctor, some twelve miles away, a man who in Germany had been an apprentice at one time under Doctor Conradi, Pastor Struensen's father-in-law, and has cured many people here as an empire. He arrived at the break of day. cooked some chamomile in wine, gave him this herb drink and applied poultices, which had good effect. The prayers, however, were likely the best medicine." (sic)

*colicky pituitosa: inflammatory intestinal colic ...

The Zinzendorfers, the founders of the Moravian communities of Bethlehem and Lititz, and Rev. Muhlenberg were competing for the Christian souls of the German community in the area, so the Lutherans and Moravians were at odds. By the time of the Revolutionary War, the Moravians dominated Bethlehem and owned the entire town of Lititz, while the Lutherans were well entrenched in Reading and Lancaster. However, as early as 1748, Rev. Muhlenberg had this to say about the Zinzendorfers: "Their Pastor had taken on a barber surgeon and opened an apothecary shop, attracting so many people seeking help, that the pastor boasted that he could drive out the Lutherans if he so desired." But Muhlenberg responded by saying that their doctor and apothecary would only succeed in taking the people's money without effecting any cures. Indeed, the doctor proved to be both a drunk and a "swindler" and his medicines caused more sickness, even death of more than a few.¹⁹

¹⁹ Herbert L, Tindall, ed., "A History of Medicine in Lancaster County" *Lancaster Medicine*, (Lancaster PA: The Lancaster City and County Medical Society), 52, no 2, (October 1976), 9-12.

EDUCATED PHYSICIANS, THEIR APPRENTICES AND THE REGULARS

All of the medical school-educated physicians in the colonies were identified as the "regulars." Those who apprenticed with the formally educated physicians, also joined the ranks of the regulars. Almost all of the regular physicians were males. Most regular physicians earned a decent, but not above average income, and few became wealthy. Many of the rural practitioners operated their farms for additional income. Often a doctor also operated his own drug store. It was not unusual for a physician to quit the practice of medicine and become involved in full-time farming or other businesses, including the law, the ministry or politics.

The doctor's life was arduous as much of the care was provided in the patient's home requiring travel by horse and buggy. The care of just one patient, who lived at some distance could consume nearly the whole day. Just getting the horse and the buggy ready and whatever else might be needed to care for the patient, took time. Thus, most physicians needed an assistant, and sought intelligent teenage boys, to serve as an apprentice. They were expected to be ambitious and energetic and have the ability to read and write. They did all of the menial chores for their mentors, as well as were required to help care for the doctor's patients. They were expected to read medicine and might even have specific reading requirements. When their mentors, felt they were ready, usually after a period of three to six years, they would certify that their students were ready to enter medical practice on their own. Some pursued more formal medical education in Europe.

By the mid-18th century there were an estimated 3500 to 4000 regular physicians in the colonies, but probably not more than 10% of those claiming to be physicians had a formal medical education in the European schools. Those who certified as apprenticed-trained physicians, were considered among the regulars, although no more than 400 held an MD degree.²⁰

²⁰ Starr, The Social Transformation of American Medicine, 40.

SLAVES AS APPRENTICES

There were some physicians who utilized slaves as medical assistants, and in effect they became their "apprentices." These African American slaves could only see slaves and black freemen as patients. On occasion, they were able to acquire their freedom and become regular physicians. One such person was James Durham who was born a slave in 1762 and grew up in Philadelphia. Durham, aka Derham, aka Derum. He was mentored by a Scottish-born physician, Dr. John Kearsley, Jr., eventually was bought by Dr. George West and then Dr. Robert Dow of New Orleans, where he earned his freedom and practiced medicine. Under the tutelage of his Philadelphia master, he became quite knowledgeable and skilled in the management of respiratory illness. During his time in New Orleans, his physician master was so impressed with his acquired knowledge and skill level, that in 1783 he allowed him to buy his freedom and establish a medical practice in New Orleans. He was apparently successful but for reasons unknown traveled back to Philadelphia, where he met Dr. Benjamin Rush. Rush was duly impressed and convinced him to relocate in Philadelphia. Durham was successful once again, as he soon established a national reputation for his expertise in throat disorders and knowledge of communicable diseases. Unfortunately, he encountered political difficulties and because of licensing issues no longer practiced after 1801. He died within a few years.²¹

THE IRREGULARS

Besides the regular physicians, there were many other providers of medical care. These included the apothecaries, midwives, barber surgeons, and the irregulars. Unfortunately, there were also the quacks without any formal education.²²

The irregular physicians evolved during the post-colonial period. They had undergone a more un-orthodox education and included three major groups, the Thomsonians, Homeopaths, and Eclectics. Thomsonianism relied primarily on ritual baths, emetics, purgatives, and diuretics. Homeopathy relied on pharmaceuticals made of highly diluted solutions and powders that

²¹ Constance Clayton and Joan Potter, *African Americans Who Were First*, (New York: Dutton Juvenile, 1997), 6; and Charles E. Wynes, "Dr. James Durham, Mysterious Eighteenth-Century Black Physician: Man or Myth?" *The Pennsylvania Magazine of History and Biography* 103, no 3 (July 1979): 326-328.

²² Tindall, "Lancaster Medicine in the Colonial Days," 4.

produced effects when full strength similar to the disease they were intended to cure.-In highly diluted form these had little harmful effect. Eclecticism relied on botanicals, mineral remedies, and a combination of practices (Thomsonianism, Homeopathy, and Allopathy), or whatever was thought to work.²³ It was expected that practitioners, designated as regular or irregular, were expected to conduct themselves ethically. Unfortunately, even people who came under the care of the regulars, were often made worse by medicines, such as those containing arsenic or mercury, or procedures such as bleeding and cupping.²⁴

THOMSONIAN MEDICINE



Figure 3, Samuel Thomson, (1769-1843). The founder of the Thomsonian system of medical practice. (Countway Library of Medicine, Harvard University)

Samuel Thomson was a curious self-taught medical practitioner who learned from the locals where he grew up in rural New Hampshire and through trial

²³ Duffy, The Healers, 109-114.

²⁴ Lester S King, "I. The British Background for American Medicine," In American Medicine Comes of Age, 1840-1920, Essays to Commemorate the Founding of the Journal of the American Medical Association July 14, 1883 (Chicago: American Medical Association, 1984), 4.

and error, that certain herbs had medicinal properties. He adopted certain Indian practices, such as Indian tobacco, which when taken orally, caused vomiting, and cayenne pepper and steam baths to heat up the body. One of his favorite remedies was the use of Lobelia plant to induce vomiting. Another favorite was the boiling of comfrey leaves, an herb, as mixed in turpentine to form a plaster, facilitated wound healing. He preached that heat promoted life and cold favored illness. Apparently, his methods were less toxic than that of the regulars. Thomson complained that the regulars used purgatives and cathartics, which he claimed were poisonous, and bloodletting, which exacerbated, if not, worsened the sick. Generally, Thomson's methods were no better and maybe no worse.

Thomsonian medicine was particularly popular among the Mormons, as Joseph Smith, the founder of the Mormons, had an unfortunate experience with a regular or allopathic physician. Joseph Smith blamed the regular physician for the death of his brother after receiving calomel for his illness. He embraced the Thomsonian motto: "Every man his own physician." By 1852, the Mormons went as far as making it illegal for any, but Thomsonian doctors, to practice medicine in Salt Lake City."²⁵

²⁵ Volney Steele, *Bleed, Blister, and Purge, A History of Medicine on the American Frontier,* (Missoula, MT: Mountain Press Publishing Company, 2005), 78.

HOMEOPATHY



Figure 4. Dr. Christian Friedrich Samuel Hahnemann, the founder of Homeopathy. Line engraving buy L.B. Wellcome. (Courtesy Wikimedia)

Samuel Christian Hahnemann (1755-1843) was a German physician. He was highly intelligent and could speak eight languages. Although Thomson was self-taught, Hahnemann was not only well educated, but studied in the best schools of Europe including Leipzig and Vienna. He acquired his medical degree from the University of Erlangen in 1779. He deplored the common medical practices of the regulars, especially bloodletting and the use of drugs to purge. He was a strong advocate of life-style practices to maintain good health including cleanliness, exercise and a good diet. He reasoned after his own experimentation that a medication or drug that produced symptoms of a disease in a healthy person would be curative for a patient with the disease. This is the basis for his theory and the discipline of homeopathy: that "like cures like," or *similai similibus curantur*. Based on his observational studies, he also concluded that these same drugs or

chemicals that induced the symptoms, when used in minute doses (One part per million dilution), could still cure without their toxic effects.²⁶

The irregulars, many of whom did not subscribe to these purging and bleeding practices, were able to gain favor from a growing and suspicious public. Because homeopathy was based on some rational theory and the homeopathic physicians were for the most part, well-educated, homeopaths were at first recognized as legitimate. The two physicians who deserve most credit for promoting homeopathy in America were New York's Dr. Hans Gram, American born, and the son of Danish parents and the distinguished German immigrant, Dr. Constantine Hering. In 1835, Dr. Hering founded the first college of homeopathic medicine in Allentown, PA.²⁷

By the time the American Medical Association was formed in 1847, the division between the regulars and the homeopaths was established. As medical science advanced, homeopathic principles were outrightly refuted and considered even fraudulent.²⁸

THE APOTHECARIES

Although today's medications do make a difference in people's lives, almost always for the better, it has not always been so. The word pharmaceutical derives from the Greek word, *pharmaki*, which means poison. Pharmacology is therefore the study of "poisons." Thus, in practice, a pharmaceutical's potential benefit is supposed to outweigh any potential harm before it is recommended for use. One of the great medical axioms of antiquity, attributed to Hippocrates: "whatever the prescription might be in managing illness, first, do no harm." Any formal medical education requires the study of pharmacology. The first century Greek-Roman physician, Dioscorides, was the author of a classic text on *materia medica*, an authoritative text on the pharmacologic properties of 600 or so plants. His classic work was studied in medical schools throughout the western world up until the eighteenth century. Many of these remedies are still in use today.²⁹

²⁶ Duffy, The Healers, 113.

²⁷ Ibid, 114.

²⁸ Ibid, 117.

²⁹ Garrison, An Introduction to the History of Medicine. 109.

Today's pharmaceuticals have decreased the mortality rate resulting from such diseases as infections, diabetes, heart disease, hypertension, thyroid disorders, and cancer. But not too long ago in our history, much credence can be given to the remarks of Oliver Wendell Holmes, MD, "I firmly believe that of the whole materia medica, as now used could be sunk into the bottom of the sea, all the better for mankind and all the worse for the fishes."³⁰

The apothecaries of Europe had a longstanding professional history and practiced their 'art' for over four millennia,³¹ and over time, they grew in stature and respect. However, it wasn't until the early 1600's that James I of England recognized the apothecaries as a special branch of medicine. In time, the apothecaries organized themselves as a unique "Society of the Art and Mystery of the Apothecaries of the City of London."³²

As was the case in England, some apothecaries in the colonies, who acquired experience and more medical knowledge, also practiced medicine. Likewise, many physicians operated their own drug stores as well. As medical science became more advanced and medical practice more sophisticated, a clear professional distinction between the learned physician and apothecary evolved. However, it took almost 200 more years before the apothecaries of England fulfilled certain educational requirements, to become certified, and acquire a license in the early nineteenth century.³³

Since the earliest physicians were generalists, they were called upon to care for all matters of illness, malady, or infirmity to include the dispensing of drugs. It was therefore incumbent upon the early physicians to prepare their own drugs or purchase them from apothecaries in Philadelphia, and some operated the country store and sold a variety of herbs or medicinals including calomel, arsenic, castor oil, sulphur, mustard, Cream of Tartar

³⁰ Charles S. Bryan, *Osler, Inspirations from a Great Physician,* (New York: Oxford University Press, Oxford, 1970,) 122.

³¹ George L. Heiges, "Apothecaries of Lancaster County," *Lancaster County Historical Society*, L, no 2, 1946, 33.

 ³² Roy Porter, *The Greatest Benefit to Mankind, A Medical History of Humanity*, (New York: W.W. Norton & Company, 1997), 194.
³³ Ibid, 316.

(potassium bitartrate), and Glauber's salt (sodium sulfate).³⁴ The major difference between the apothecaries and regular physicians was that the apothecaries were in the business of selling their medicine (drugs, herbs, etc.), while dispensing free advice; whereas, the physicians were compensated for their advice to include the cost of the medicinals.

[AN APOTHECARY PHYSICIAN OR 18TH CENTURY PHARMACY] SELF-HELP BOOKS

Among the self-help books, the most popular was James Ewell's 1807 *The* Medical Companion *or Family Physician*, which was dedicated to President Thomas Jefferson. He explained how and what herbs could be used. Gunn's *Domestic Medicine* or Poor Man's Friend was very popular and first published in 1830, even offering advice on when and how to perform an amputation. Dr. J. Cam Massie's *Treatise on the Eclectic Southern Practice of Medicine*, which was published in 1854, argued that northerners did not understand the diseases of the south and should not be trusted.³⁵

In 1821, 68 druggists and apothecaries in the City of Philadelphia inaugurated the Philadelphia College of Pharmacy as the first pharmacy school in North America. These apothecaries sought to establish improved scientific standards and to train more competent apprentices and students. This curriculum as developed through the years included pharmacology, dispensing, manufacturing pharmaceuticals and business skills.

³⁴ Heiges, "Apothecaries of Lancaster County," 34.

³⁵ Duffy, *The Healers*, 126-128.

BENJAMIN FRANKLIN (1706-1790)



Figure 5. Benjamin Franklin, portrait by Joseph Duplessis, 1778. (Courtesy National Portrait Gallery, Washington DC.

Benjamin Franklin was one of America's early great intellectuals. As a voracious reader, he acquired most of his education on his own. Franklin's father could not afford to continue his brilliant son's formal education, so it ended at age ten when he joined his eldest brother's printing business. The Mathers (father and son), who made the news in his brother's newspaper, had fascinated the clever Benjamin Franklin. Unbeknownst to his brother, however, and under the pseudonym, Silence Dogwood, Benjamin Franklin began writing articles in the New England Courant challenging Cotton Mather and his father on religious hypocrisy. The Mathers responded to these attacks, which added to the success of the New England Courant. However, when James Franklin discovered that the real author of *Silence* Dogwood was none other than his brother, Benjamin, it caused a rift. The already disagreeable relationship between James and Benjamin worsened, which caused the young brother at age seventeen to leave Boston for Philadelphia and attempt his own venture into printing. By age twenty-three he had his own printing business in Philadelphia.³⁶

³⁶ Gordon S. Wood, *The Americanization of Benjamin Franklin*, (New York: Penguin Press, 2004), 20-23.

On a side note, on a November day in 1721, a small bomb was hurled through the window of a local Boston Reverend named Cotton Mather. Attached to the explosive, which fortunately did not detonate, was the message: "Cotton Mather, you dog, dam you! I'll inoculate you with this; with a pox to you." The smallpox epidemic that struck Boston in 1721 was one of the deadliest of the century in colonial America, with more than 6,000 reported cases among the 11,000 Boston residents. Mather pleaded with the medical doctors to inoculate the populace. However, few responded to the call, except for one notable physician, Dr. Zabdiel Boylston. As the epidemic was coming to an end in 1722, Mather reported that among the 287 who received the inoculation by Dr. Boylston, only 2% died, whereas nearly 15% of those who were not inoculated died. "This became the catalyst for the first major application of preventative inoculation in the colonies and laid the foundation for the modern techniques of infectious diseases prevention, and the contentious public debate that accompanied the introduction of this poorly understood medical technology."37

Franklin became a strong advocate for smallpox inoculation and the successful administration of an inoculation program during the Philadelphia smallpox epidemic of 1730-31. Ironically and unfortunately, he had not had his own son, Francis, inoculated. He-died in 1736 from small pox at age four.^{38,}

Franklin's *Pennsylvania Gazette* became the most widely-read newspaper in the colonies. At the time Franklin began publishing his "Poor Richard's Almanac" in the early 18th century, the humoral theory dating back to Greek antiquity continued to be used to explain how disease occurred, how epidemics spread, and how people died. These beliefs were used to advantage by quacks. Franklin, on the other hand offered his views on many subjects including health, and embraced the theory that "colds" were spread by a contagion. He suggested that one did not catch a cold from a chill, after all, sailors and fishermen were frequently wet, and they were considered among the healthiest. Rather, he noted, the common cold is acquired and spread through the breathing in of someone else's breath in a closed space,

³⁷ M. Best, D. Newhauser, D. and L. Slavin L, "Cotton Mather, you dog, dam you! I'll inoculate you with this; with a pox to you': Smallpox inoculation, Boston 1721," *Quality and Safety in Health Care*, 13, no 1, (2004): 82-83.

³⁸ Bell, *The Colonial Physician & Other Essays*, 120: and Wood, *The Americanization of Benjamin Franklin*, 52.

such as a room or in a house without an open window. Hence, he promoted ventilation, as closed rooms put one another at risk for "catching a cold." Even on cold nights he insisted the windows be kept open.³⁹

In 1749, Franklin was instrumental in organizing a group of influential and wealthy citizens of Philadelphia to purchase a building to establish "The Academy," which under its first provost, the Reverend William Smith, D.D., became the College of Philadelphia⁴⁰ and eventually the University of Pennsylvania.

³⁹ Ibid, 122-123.

⁴⁰ George Corner, *Two Centuries of Medicine*, (Philadelphia: J. B. Lippincott Company, 1965), 2.

CHAPTER II: THE FORMATION OF AMERICA'S FIRST MEDICAL SCHOOL

THE COLLEGE OF PHILADELPHIA AND PENNSYLVANIA HOSPITAL

By 1765 Philadelphia was now a bustling metropolis of 25,000 people.¹ Benjamin Franklin was by then one of its wealthiest and most prominent citizens. Thanks largely to his thriving printing business and philanthropy, Franklin helped spearhead America's first public library, founded in 1731, the Academy or College of Philadelphia, founded in 1749, and the Pennsylvania Hospital, founded in 1751.²

THE EDINBURGH SCHOOL OF MEDICINE

During the colonial period, many of the apprentice-trained physicians would go to Europe, especially to Scotland at Edinburgh, to acquire their formal medical education and then return with their medical degrees. Edinburgh had a large student body, liberal entrance requirements, and very much welcomed the Americans. Most of the Americans had already been through an apprenticeship and thus were older than the ordinary student body. The school day consisted of lectures in the morning, completing their note-taking in the afternoon, making rounds in the Royal Infirmary and spending the rest of the day reading from the journals of the day. They delighted to write back home to their preceptors about their latest discoveries in the medical and scientific world. The Americans joined the medical societies, where their professors read and defended their theories. George Logan wrote to his brother from Edinburgh in 1778 laying out the curriculum over three years, which included classes in Chemistry, Anatomy, Practice Theory, Materia Medica (pharmacology) and Botany. Although the Americans attended the course on Midwifery, it was not required. The students had to undergo both a private and one public examination and had to complete a thesis, which had to published and defended at the Public examination.³ The school had a decided influence on medical practice throughout the pre- and immediate post-Revolutionary period in America and even into the early 19h century.

¹ Corner, *Two Centuries of Medicine*, 2.

² Edmund S. Morgan, *Benjamin Franklin*, (New Haven, CT: Yale University Press, 2002), 57-60

³ Bell, *The Colonial Physician & Other Essays*, 49-51.

Some of the Americans, such as Drs. William Shippen, John Morgan, Benjamin Rush, and Philip Physick went on to study in London to learn dissection with Dr. John Hunter and his brother Dr. William Hunter. The usual routine was to conduct morning rounds with a physician or a surgeon, attend the afternoon lectures and then, copying the lecture notes in the evening. The week's events may have also included attending an operation or attending a meeting at one of the medical societies. As was the case among the Edinburgh professors, the Americans were required to pay the fees directly to the professors to attend their lectures or their operations.⁴

THE PHILADELPHIA DOCTORS



Figure 6. Dr. John Redman, (1722-1808) (Courtesy Wikimedia)

But America needed to begin producing its own physicians. At the time, there were about 30 regular physicians in Philadelphia of whom 13 were well-trained, including Thomas Graeme; John Kearsley, Sr.; John Kearsley, Jr, who trained his black slave, James Durham; John Redman; William Shippen, Sr, who apprenticed with John Redman; Thomas and Phineas Bond; Thomas Cadwalader; Ralph Ashton; Cadwalader Evans; George Glentworth; Charles Moore; and Samuel Preston Moore, who apprenticed with his father, Charles Moore.

⁴ Bell, The Colonial Physician & Other Essays, 56.

The Pennsylvania Hospital was utilized almost from its onset as a teaching institution and served to provide additional opportunities for learning clinical medicine with their mentors. Hence, they were designated as "pupils of the Hospital." On completing their attendance, they received a certificate signed by Thomas Bond, MD. Among them was Benjamin Rush, who was apprenticed to John Redman from 1761-1765. Redman was the first president of the College of Physicians of Philadelphia and designated as a consultant at Pennsylvania Hospital, but Thomas and Phineas Bond along with Lloyd Zachary were the principal attendings. Benjamin Rush was involved in the care of the patients at the hospital while also spending time in the private practice of Dr. Redman.⁵

Morgan was an ambitious and determined young man. While attending the College of Philadelphia and working as an apothecary at Pennsylvania Hospital, he pursued an apprenticeship with Dr. John Redman. After six years with Redman, he served as a military surgeon for four years. Then he went to London to study anatomy with the famous William Hunter (1717-1783). Finally, he pursued two more years of study under Dr. John Fothergill (1712-1780) at Scotland's Edinburgh University, where he acquired his medical degree (M.D.) on July 18, 1763.⁶ At Edinburgh, he was described as a "brilliant student." His friend Samuel Powel of Philadelphia, in a letter to his uncle, wrote that "Dr. Morgan graduated with such a reputation as few, if any, have ever obtained." After receiving his medical degree, he pursued his studies with some of the great medical scientists of that era in Rotterdam, Paris, and Padua where he and his friend Powel engaged in discourse with Voltaire on political philosophy.⁷

Morgan's ideas regarding America's medical education system was modeled after the great medical schools of Europe, such as his alma mater, the school at Edinburgh. He had been contemplating his ideas ever since his days at the College of Philadelphia, and even, some modern biographers suggested,

⁵ Corner, Two Centuries of Medicine, 4.

⁶ Lester S. King, "II. Medical Education: The Early Phases," In *American Medicine Comes of Age*, *1840-1920*, p. 5.

⁷ Corner, *Two Centuries of Medicine*, 15-16.

with encouragement from the school's Provost William Smith. While in London, during the winter months of 1764-1765, Morgan eagerly shared his ideas for America's first medical school with Drs. Fothergill, Watson and William Hunter. Morgan also exchanged favorable correspondence with Dr. Redman regarding his plan. He was then a trustee of the College of Philadelphia, and he managed to receive even more encouragement from James Hamilton and the Reverend Mr. Richard Peters, two other trustees who happened to be in London at that same time. Thus, the plan for the medical school was already well thought-out and ready for execution by the time he returned to America. At no time, while in Europe, did Morgan share any of these discussions or plans with Dr. Shippen. In fact, he discussed "his scheme with influential friends at a special meeting of the trustees of the College on May 3, 1765, at which Drs Redman, Cadwalader, Thomas and Phineas Bond were present—but not Dr. Shippen, Sr who was a founder and trustee of the College of Philadelphia. Morgan presented a letter advocating his plan from the two trustees, James Hamilton and Richard Peters, who were still in England, and a recommendation amounting almost to a directive from Thomas Penn." The letter as written, "Dr. Morgan has laid before me a proposal for introducing new professorships into the College for the instruction of all such as shall incline to go into the study and practice of physic and surgery, as well as the several occupations attending upon these necessary and useful arts... The above letters and proposals being duly weighed, and the Trustees entertaining a high sense of Dr. Morgan's abilities, and the honors paid to him by different learned bodies and societies in Europe, they unanimously appointed him Professor of the Theory and Practice of Physic in this College."⁸

⁸ Ibid, 17-18.

AMERICA'S FIRST MED SCHOOL (1765)



Figure 7. Dr. John Morgan, 1735-1789, Founder of the Perlman School of Medicine at the University of Pennsylvania, (Courtesy National Portrait Gallery)

Soon after his return from Edinburgh, Dr. John Morgan declared the apprenticeship model simply inadequate to prepare physicians to care for the ill and advocated that those permitted to practice medicine needed to complete a formal medical-school education.⁹ He presented his final plans for a new medical school before the board of trustees of the College of Philadelphia, which they adopted and the school accepted its first class to begin in September 1765. Dr. Shippen learned about this after the fact.¹⁰ The College of Philadelphia was to become the University of Pennsylvania, School of Medicine, today's Perlman School of Medicine of the University of Pennsylvania.

⁹ Ibid, 20.

¹⁰ Ibid, 18.

WILLIAM SHIPPEN, M.D. (1736-1808)



Figure 8. Dr. William Shippen, etching H. Wright Smith. (Courtesy National Library of Medicine)

Shippen, who preceded Morgan at Edinburgh, had every intention of establishing a school in Philadelphia and was already teaching a course in anatomy as a precursor to this plan in 1762. He awaited the return of Morgan, as there was an apparent understanding they would engage in this endeavor together. So, one can only imagine his disappointment, when he learned that the school was already a fait accompli. The college proceeded to designate Morgan as Professor of the Theory and Practice of Medicine and Shippen, despite his consternation, accepted the appointment to become Professor of Anatomy. Shippen expressed his indignation regarding his own plans for the medical school in a letter to the trustees, dated September 17, 1765:

"The instituting of medical schools in this country has been a favorite object of my attention for seven years past, and is three years since I proposed the expediency and practicability of teaching medicine in all its branches in this city, in a public oration, read at the State House, introductory to my first course of anatomy. I should long since have sought the patronage of the trustees of this College, but waited to be joined by Dr. Morgan, to whom I first communicated my plan in England, and who promised to unite with me in every scheme we might think necessary for the execution of so important a point. I am pleased however, to hear that you gentlemen on being applied by Dr. Morgan, have taken the plan under your protection, and have appointed that gentleman Professor of Medicine. A professorship of anatomy and surgery will be gratefully accepted by, gentlemen, your most obedient and humble servant." sic ¹¹

THE REVOLUTIONARY WAR AND THE FATE OF AMERICA'S FIRST MEDICAL SCHOOLS

Unfortunately, the Revolutionary War brought about an abrupt halt to the study of medicine at Philadelphia's new medical school. The First and Second Continental Congress met in Carpenters' Hall in 1774 and again at the Pennsylvania State House (Independence Hall) in 1775, only two blocks from the College of Philadelphia and Pennsylvania Hospital. The faculty was divided, and they engaged in the political debates. Tension rose and resignations took place, as the cries of war created turmoil in the city.¹²

BENJAMIN RUSH, MD (1745-1813)



Figure 9. Benjamin Rush, M.D., painted by Charles Willson Peale in 1783. A Signer of the Declaration of Independence and one of the most prominent Americans of the colonial period. Rus died in Philadelphia five days after falling ill with typhus fever. (Courtesy Smithsonian Inst.)

¹² Ibid, 32.

¹¹ Ibid, 23.

Benjamin Rush, M.D. (1745-1813), completed an apprenticeship with Dr. John Redman, an outstanding physician with an impeccable reputation. This consisted of compounding medicines, visiting the sick in their homes and at the hospital, taking exclusive charge of Redman's records and accounts, and reading all the medical books Redman gave him.¹³ He studiously read the works of the great English physician, Dr. Thomas Sydenham, who promoted the idea of an air-transmitted pestilence as the cause of disease; and of the Dutch clinician, Hermann Boerhaave, who advocated the Hippocratic idea that it was the function of the physician to assist nature to effect the cure of an illness.¹⁴

He completed his education at Princeton and then went to Scotland to acquire his medical degree at Edinburgh under Dr. John Fothergill and additional training in London with William Hunter. Morgan already promised him the chair of chemistry on his return and wanted him to take seriously the lectures of the renowned Joseph Black. He did just that and wrote his thesis on "the chemistry of digestion," dedicating this work to his mentor, John Redman as well as to Joseph Black, Benjamin Franklin, Morgan and Shippen. Dr. Fothergill endorsed his expertise in chemistry and recommended him to Thomas Penn, Proprietor of the Province of Pennsylvania. When he returned to America, within three weeks, he was appointed Professor of Chemistry at the medical school of the College of Philadelphia on August 1, 1769.¹⁵

He became known for being a humanitarian, an abolitionist, and a strong spokesman for the American cause.¹⁶ An outspoken patriot, he played an active part in the discussions leading up to the Revolution. Highly respected among his peers and within the Philadelphia gentry, he denounced British rule and became one of the co-signatories of the Declaration of Independence. He Joined the Pennsylvania militia as a surgeon, looked after the wounded following the battle in Princeton, and assumed the role of physician general of the military hospitals., He found these in a deplorable

¹³ Ibid, 4-5.

¹⁴ Duffy, *The Healers*, 28.

¹⁵ Corner, Two Centuries of Medicine, 29.

¹⁶ Duffy, *The Healers*, 92.

state, for which he blamed William Shippen, Sr., causing a serious rift between these two eminent medical figures of their time.¹⁷

Following the Revolutionary War, aside from his political prominence, Benjamin Rush had a strong medical following. Greatly influenced by Edinburgh's William Cullen, he was convinced that bloodletting, emetics and cathartics (calomel) was the rational treatment for febrile illnesses. He based therapy on his version of the humoral theory. This formed the basis of his "capillary tension" theory: There is "but one fever in the world… but one disease in the world, and that one disease is a morbid excitement induced by capillary tension." Unfortunately for his patients, there was but one remedy, and that was to deplete the body of blood by bloodletting and the emptying of the stomach and the bowels with the use of powerful emetics and purgatives.¹⁸ This aggressive treatment regimen of those afflicted in the 1793 yellow fever epidemic of Philadelphia, hastened the death of many, who might otherwise have survived.¹⁹

When he died in 1813, he was called the "American Hippocrates." Ten years after his death, his ideas came under serious dispute and by the middle of the nineteenth century, his treatment philosophy was condemned. Yet, despite this tarnished aspect of his medical reputation, he remains an American icon as a Revolutionary hero, a public servant, the founder of American psychiatry, and a promoter of personal and public hygiene (public health).²⁰ Benjamin Rush's "Medical Inquiries and Observations, Upon the Disease of the Mind," published in 1812 underscores his innovative approach to mentalhealth care. He developed a curriculum on mental health disorders, which he covered during his students' final year in a series of 20 to 30 lectures. Some of his treatments were considered radical, if not at least innovative, such as his invention of the "tranquilizing chair." He would immobilize the patient until the patient's pulse rate calmed down, since excitement had the effect of upsetting the patient and increasing the pulse. Sometimes he would use the same chair to spin the patient around in order "to reorient the confused mind." He even considered that tossing a bucket of cold water on an

¹⁷ Corner, Two Centuries of Medicine, 37.

¹⁸ Starr, The Social Transformation of American Medicine, 42.

¹⁹ Duffy, The Healers, 95-96.

²⁰ Ibid, 97.

unsuspecting patient would startle the patient into his senses. He offered the theory that mental illness was seated in blood supply to the brain. On a more positive note, he is credited to introducing what was considered a rational, humane, "moral treatment" approach of mental illness.²¹

ADAM KUHN, M.D. (1741-1817)



Figure 10. Adam Kuhn, MD, born and raised in Lancaster, PA, Kuhn was among the original faculty as professor of botany and materia medica of the Perlman School of medicine at the University of Pennsylvania. (Courtesy Wikimedia)

Another prominent member of the Medical College of Philadelphia was Adam Kuhn, MD. whose father, Dr. Simon Adam Kuhn, was one of Lancaster's pioneer physicians. His father arrived in America in 1733, married and settled in Germantown where Adam, Jr., was born in 1741. The family then moved to Lancaster. His father established a successful practice and became a local magistrate, and there soon followed two more brothers, John and Frederick. All apprenticed with the father and became physicians.

While John and Frederick remained in Lancaster and practiced with their father, Adam Kuhn continued his medical education in the European schools and studied under the famous Swedish botanist, Linnaeus in Uppsala, where he received his M.D. degree in 1767. Linnaeus was so impressed with his American student that he named an American genus of thistles, "Kuhnia."²² Kuhn continued his studies in France, Holland and Germany and then

²¹ Marshall A Ledger, "Benjamin Rush and 20 years of Penn Psychiatry," Penn Medicine, (Fall, 2012): 26-27.

²² Corner, Two Centuries of Medicine, 28.
returned to practice in Philadelphia. By then, in 1768, with his impeccable credentials and strong endorsements, Morgan appointed him as the medical school's third faculty member and the first professor of botany and materia medica.²³

Yet, despite his impressive background, Kuhn ended up running into trouble when he refused to take an oath pledging allegiance to the revolutionary cause. He ended up after that refusal in the West Indies. He returned to Philadelphia in 1780, but was promptly arrested and deported back to the Caribbean. After 48 prominent citizens, including his entire faculty, petitioned on his behalf, he was allowed to return to resume his faculty position at the new medical school, where he taught and practiced medicine for the next 30 years.²⁴

²³ Ellis and Evans, *History of Lancaster Pennsylvania*, 248.

²⁴ Corner, *Two Centuries of Medicine*, 35.

CHAPTER III: MEDICAL EDUCATION IN THE NINETEENTH CENTURY

COLUMBIA, HARVARD AND DARTMOUTH

Before the end of the century three more medical schools were established at New York's King's College (Columbia University), in 1767; Boston's Harvard University in 1782; and New Hampshire's Dartmouth University in 1797. After the turn of the century, Connecticut's Yale University was established in 1810, and Kentucky's Transylvania University in 1817. Although a close association with their academic sponsor and high standard were originally intended, this was not to be sustained.

Morgan wanted the American medical education system to mimic the British system. He also advocated for a Medical Society that would dictate standards, much like that of the Royal College of Physicians. The Medical Society would set the newly educated physician with a degree apart from those without a formal education. He advocated strict licensing requirements throughout the colonies.

Instead the colonies saw a growing number of poorly trained physicians, the apothecaries, barber surgeons, the further emergence of the irregulars and too many quacks. Medical care was administered in an unruly competitive environment. Licensing efforts in New York City and Connecticut in the pre-revolutionary period failed to eliminate the quacks ¹ In 1806. College of Philadelphia's medical faculty failed to convince its Pennsylvania legislature to establish licensing requirements to include passing an examination. The faculty argued that certificates of attendance at lectures were not adequate evidence to qualify for medical practice and licensure.²

MEDICAL EDUCATION BECOMES A LUCRATIVE BUSINESS

Without any enforceable standards, America's medical education system went from bad to worse, as it became a lucrative business to train doctors. All it took to start a new school of medicine was for an enterprising and ambitious group of physicians with a respectable knowledge of the current medical subjects, effective oratorical skills, and enough start-up funds to rent a hall. The income of the faculty was determined by the fees they collected

¹ King, "II. Medical Education: The Early Phases," In *American Medicine Comes of Age, 1840-1920*, 6.

² Corner, Two Centuries of Medicine, 58-59.

from students who paid to attend their lectures. There was a strong economic incentive to accept as many students as could pay the fees. The fees, usually in the amount of \$5 to \$10, to enter the school, \$20 to attend the professor's lectures, and \$25 to pay for their graduation certificate. Obviously medical schools that could be attached to a college or university added to its prestige and could attract more students.³ Thus, there was very little motivation to insist on establishing a national standard. In fact, it took more than 125 years before there were universal state licensing requirements and a national standard of medical education for physicians.⁴

NOT EVEN A HIGH SCHOOL EDUCATION

Although a high school education was desirable, the only requirement for entrance into medical school in the 18th and early 19th century was the student's ability to read and write and pay the fee to attend the lectures. The ability to read and write might not be questioned by some of the early schools. Professors could become quite wealthy, as it was not unusual for a professor to have an annual income of several thousand dollars. The student earned his degree after attending the required number of lectures and completing the practicum in the anatomy and clinical labs, if such existed, over a two-year period. The academic year was usually five or six months, and the student was expected to attend the same series of lectures in both years one and two. That was the extent of a student's medical education.

By the early 1800's several medical schools were established in Baltimore, simply as an outright private business venture by groups of physicians.⁵ By 1811, these schools were attracting wealthy students from the south that ordinarily would have gone to Philadelphia. Schools, such as the University of Pennsylvania, not only lowered the standards for admission, but they also made the requirements for a medical degree less rigorous. Thus, the original four schools, which established a respectable model, began to lower their standards to attract more students. On the other hand, there were some of Penn's faculty, who protested and tried to resist any such action. The Baltimore schools can take credit for promoting the proprietary model in

³ Duffy, *The Healers*, 172.

⁴ King, "II. Medical Education: The Early Phases," In *American Medicine Comes of Age*, *1840-1920*, 6.

⁵ Corner, *Two Centuries of Medicine*, 57.

medical education, as it was among the first to divorce medical schools from academic institutions. In the early 1800's, the so-called College of Medicine of Maryland was started de novo. It was the first of the medical colleges to be established by state authority without a university affiliation. Flexner, in his 1910 report, blamed this development as principally responsible for the lowering of medical education standards. This also set the stage for reputable schools like the University of Pennsylvania and Harvard to alter their business model and base their entrance and graduation requirements as well as student expectations on this proprietary model.⁶ This was not a good time in US medical education.

A PLEA FOR STANDARDS

From the beginning John Morgan advocated a national standard in medical education. However, the high demand for physician manpower, along with the profit made from student fees attending lectures, with little regard to their qualifications made medical education institutions a highly lucrative enterprise. In fact, in 1813, among the calls for reform was Benjamin Rush, who in a letter to the College of Philadelphia trustees advocated serious reforms in the medical college:

- 1. defined entrance requirements,
- 2. the lengthening of a student's medical studies to three years,
- 3. more intensive study of compulsory subjects, and

4. required clerkships making the school year a year-round endeavor. He expressed the opinion that "not even a quarter of its recent graduates were qualified to practice medicine, for they knew not how to even dress a wound, perform a bleeding, or have knowledge of how to dispense the most common remedies." He even suggested that "if such efforts decreased the number of students, so much for the better, as it would increase the honor of our degrees proportionately and the respectability and usefulness of our graduates."⁷ Rush failed at this reform, as he was obviously far ahead of his time. It was soon thereafter that Rush died, and an anonymous Philadelphian, perhaps a College of Philadelphia professor, in response to such a great loss, wrote the following:

"The golden age of this establishment (University of Pennsylvania) is now at an end. Rival institutions have lately sprung up in the neighboring cities. All fortuitous circumstances of a favorable

⁶ Duffy, *The Healers*, 173.

⁷ Corner, *Two Centuries of Medicine*, 63.

character have ceased to operate; and our school, should it maintain hereafter its wanted pre-eminence, must do so by its own intrinsic and acknowledged superiority-its unrivalled advances on the score of the opportunities it affords for attainments in medicine. This superiority will depend most essentially on two points, which are completely within the control of the board of trustees. These are, the wisdom of their arrangements and the ability of their appointments in relation to professorships."⁸

These words fell on deaf ears, for as is so often the case, when societies face such moral dilemmas, the profit motive prevails. Any significant reform would have to wait until the situation reached a crisis, perhaps of catastrophic proportion. Medical education continued to deteriorate. The apprenticeship requirements varied and many medical schools no longer required any clinical experience. Students who paid to attend the lectures, received certificates of attendance, even if they did not attend the lectures. These certificates were considered sufficient to satisfy the requirements to practice "physic," and be called doctors. Establishing a new medical school simply required the payment of a fee, so there was an economic incentive to award as many such licenses as deemed possible. Quacks continued to practice without any repercussions.⁹

PROLIFERATION OF MEDICAL SCHOOLS

Unfortunately, as the number of schools proliferated during the nineteenth century, competition for students intensified. Many schools did not last long, and some never got off the ground. During the course of the nineteenth century, there were hundreds of schools of medicine in the United States.¹⁰ The unfortunate outcome was that physicians were being trained in a haphazard fashion, with differing levels of education and graduates with varied skills. What ultimately defined a "good doctor," depended more on

⁸ Corner, *Two Centuries of Medicine*, 64.

⁹ King, "II. Medical Education: The Early Phases," In American Medicine Comes of Age, 1840-1920, 7.

¹⁰ Flexner, Abraham, *Medical Education in the United States and Canada, A Report to The Carnegie Foundation for the Advancement of Teaching*, (New York: The Carnegie Foundation, 1910), 6.

the internal drive of the student rather than the school they attended.¹¹ Obviously, Dr. Morgan did not win his argument, but if he, had, perhaps, there would not have been enough physicians, to care for America's growing population. Nonetheless, the number of doctors gradually began to outpace America's population, and although shortages existed in many rural areas, there was a physician glut in many populated communities. Many physicians, even those with credentials, could not make a living without a second occupation.¹²

THE AMERICAN MEDICAL ASSOCIATION (AMA), 1847

By 1847 when a national medical organization was established, there were already 38 medical schools producing 1370 regular physicians. Unfortunately, even though they had the credentials, their education and training varied considerably across the schools. This was in the wake of the Jacksonian era of "free trade," and even licensure became almost meaningless.

¹¹ King, "Medical Education: The AMA Surveys the Problems," *In American Medicine Comes of Age*, *1840-1920*, 24.

¹² Ibid,14.



Figure 11. Nathan Smith Davis, MD, 1817-1904, Founder and first president of the American Medical Association. (Courtesy findagrave.com)

The quality of the schools varied considerably. The now renamed American Medical Association was calling for a uniform national standard of medical education. The AMA was led by Nathan Smith Davis, M.D., often dubbed, the "father of the AMA." He and a group of physician leaders wished to establish a national standard of medical education. When they first met in 1846 and again in 1847 in Philadelphia, their stated purpose was clearly to elevate the standards of the practicing physician and restore the integrity of the profession. During this period, with the exception of the anatomy lab, basic laboratory experience or clinical resources were almost non-existent in many of the schools. The students had to rely on acquiring an apprenticeship with a regular physician to learn medicine, but in most cases, this was not a requirement to obtain a degree.¹³ Although most schools were free standing, schools identified with a university were also virtually autonomous, as their funding was dependent on student fees paid directly to the faculty. Thus, medical school faculty were not governed by the university administration;

¹³ Duffy, *The Healers*, 170.

nor did the faculty have to abide by any of the university's more rigorous academic standards.¹⁴ To make matters even worse for the allopaths, laws were passed to make it possible for the irregulars, such as the Thomsonians, the Homeopaths, and the Eclectics to practice without restriction. This resulted in far too many physicians, which made medical practice highly competitive.¹⁵

The American Medical Association professed that their organization was to assure physicians the AMA was "for the protection of their interests and the maintenance of their honour and respectability."¹⁶ The public mistrusted the motives of the medical profession, as the regulars were considered elitists and suspect to insist on reform to eliminate competition.¹⁷

The AMA argued for medical education reforms, which included the extension of the school year, required laboratory science, additional faculty, expansion of facilities, and outside physician examiners to conduct the oral exams at graduation. All of these standards would make a medical education prohibitively expensive.¹⁸ Hence, the 1847 convention that gave the AMA its foundation was left with many challenges, but no substantive influence over the status quo. Its failure was to a large extent the result of an apathetic public, but as the medical historian, Lester King observed, the house of medicine was seriously divided among opposing factions: "between the academics and the non-academics, between the well-trained and the poorly trained, and between the 'good' schools and the 'bad' schools," and ultimately, between the scrupulous and unscrupulous, and between the reformers and the proponents of the status quo. The AMA would have to

¹⁸ Ibid, 25.

¹⁴ King, "The Painfully Slow Progress in Medical Education" In American Medicine Comes of Age, 1840-1920, 28.

¹⁵ Duffy, *The Healers*, 114-115.

¹⁶ King, "The Founding of the American Medical Association," In *American Medicine Comes of Age*, *1840-1920*, 13.

¹⁷ King, "Medical Education: The AMA Surveys the Problems," *In American Medicine Comes of Age*, *1840-1920*, 22.

wait a while longer until the progress in medical science became overwhelmingly convincing that reform was inevitable.¹⁹

With the development of so many medical schools throughout the nineteenth century and the growing number of regular physicians, licensing was intended to distinguish those who were more creditable. However, for the most part medical licenses had little utility, as there were inadequate laws to enforce whatever licensing requirements were in place. Too often, one could not readily distinguish between the regulars and irregulars from the quacks. Moreover, not all regulars were educated in the same way. Thus, the quality of care varied considerably. Many of the well-educated physicians with college degrees and a formal medical education abroad, were often members of the gentry and developed lucrative practices. Some of these physicians would make enormous incomes, even exceeding \$10,000. In most cases, the regular physicians with good reputations, acknowledged for their skills, knowledge, and good character also achieved considerable respect in their communities, and made a good living. However, some communities had more doctors than were needed, and struggled to compete, and often even the regulars had to rely on some other incomeproducing business to make a living.²⁰

In the meantime, the United States continued to produce more medical schools; many, of course, lasting only as long as they were able to recruit students and remain profitable. Missouri had 42 medical schools; Illinois, 39; Pennsylvania, 20; Tennessee, 18; and the city of Cincinnati, alone, had 20. During the course of 100 years leading up to the first decade of the 20th century, there were 457 medical schools, not including osteopathic schools, that were created in the United States and Canada, some 50 of which never graduated a class. Few of these schools had a laboratory or opportunities in a hospital to acquire bedside learning,²¹ while the apprenticeship or preceptorship experience had ceased to exist.²²

²² Ibid, 8.

¹⁹ Ibid, 26.

²⁰ Duffy, *The Healers*, 180.

²¹ Flexner, Medical Education in the United States and Canada, 6.

HOMEOAPATHY PROSPERED IN NINETEENTH CENTURY AMERICA

Among the most popular of the irregulars were the homeopathic physicians. The remedies for many of the acute illnesses from allopathic physicians were quite different from what are available today, and too often proved to be more harmful than no treatment at all. So, it was no wonder, homeopathy grabbed a foothold throughout America. It was common by then to speak derisively of allopaths, as it was said that some of their medications, such as cathartics or procedures such as bloodletting, could make patients sicker or even hasten their demise. It was a fact that too many soldiers during the Civil War died as the result of the reckless use of calomel (mercury chloride) forcing the Surgeon General to ban its use. These developments created a competitive animosity between the regulars and irregulars. The homeopaths and eclectics advertised: "No calomel… no minerals, or poisons used."²³

THE CIVIL WAR (1860-1865)

Without any enforceable or agreed upon national standard, medical education in America continued to deteriorate so that by the time of the Civil War, the medical community was in a pathetic state. Unfortunately, both the North and the South found their physicians inadequately prepared for the onerous duties they were called upon to perform. As a result of this terrible state of medical care—combined with poor sanitation standards— during the war, of the more than 600,000 soldiers who died, far more succumbed from illness and poor medical care than were actually killed in action. The soldiers from rural communities had not been vaccinated against smallpox; moreover, they had little exposure to the usual childhood communicable diseases such as scarlet fever, dysentery, measles, mumps, rubella, chicken pox and whooping cough. When these childhood diseases erupted in the camps, they spread quickly with a very high morbidity and mortality rate. The unsanitary conditions of the camps and the relative inexperience and incompetence of the doctors in the management of gunshot wounds or ordinary trauma, made the soldiers more vulnerable to the deadly effects of their battle wounds.²⁴

²³ Francis A. Long, A Prairie Doctor of the Eighties, Some Personal Recollections and Some Early Medical and Social History of a Prairie State, (Norfolk, NE: Huse Publishing Company, , 1937), 12

²⁴ Duffy, *The Healers*, 207-208.



Figure 12. Civil War surgery scene showing an amputation being performed in front of a hospital tent during the Battle of Gettysburg in July 1863, (Courtesy National Archives and Records Admiistration)

Sadly, before the Civil War, not one state had effective licensing legislation. No wonder there was widespread incompetence and the public became increasingly skeptical of the medical profession. ²⁵ The Civil War created public alarm, as it revealed the incompetence of so many of its medical officers. The practice of medicine was opened to nearly anyone, as medical degrees were easy to acquire. Following the war, however, with the cooperation of the state medical societies and state legislators, many states instituted much-needed requirements for licensure to practice medicine. The state medical licensing boards, duly constituted, now had the laws necessary to enforce compliance.²⁶

²⁵ Ibid, 177.

²⁶ Ibid, 291.

CHAPTER IV: A GENERAL PRACTIONER IN THE LATE NINETEENTH CENTURY

THE COUNTRY DOCTOR IN RURAL NEBRASKA

To illustrate what one doctor's medical education and medical practice was like in the late nineteenth century, it is useful to review the medical career of Francis A. Long (1859-1937). In his book, "A Prairie Doctor of the Eighties," published in 1937, Dr. Long offers an autobiographical account of his life as a general practitioner in the late nineteenth and early twentieth century in rural Nebraska. Long was born on February 16, 1859 in Kreidersville, PA.

PREMEDICAL EDUCATION

When he was seventeen, his family moved to Moulton, Iowa, where he graduated from Normal School and later acquired a teaching job in a nearby school for two years. As was the routine of most young people contemplating a medical career at the time, he studied medicine in a three-year apprenticeship with a local physician while he continued to teach. He completed his two-year required medical school education at the University of Iowa, which consisted mostly of attending a series of lectures over a period of twenty-four weeks in each of the two years. He entered medical practice in Madison, Nebraska in 1882.¹

MEDICAL SCHOOL

His major challenge was to come up with enough money to pay for the tuition, which involved paying the fees for attending the lectures. Class size varied, but his school at the University of Iowa accepted 150 students.² The medical texts he was required to read included: <u>Gray's Anatomy</u>, <u>Flint's Practice of Medicine</u>, <u>Watson's Practice of Medicine</u>, <u>Ashhurst's Surgery</u> and <u>Gross's Surgery</u>, <u>Ashhurst's International System of</u>

¹Francis A. Long, *Prairie Doctor of the Eighties, Some Personal Recollections and Some Early Medical and Social History of a Prairie State,* (Norfolk, Nebraska: Huse Publishing Company 1937), 2.

² Ibid, 14-15.

Surgery, Biddle's Materia Medica and Bartholow's Materia Medica and Therapeutics, Lusk's Midwifery, Thomas' Diseases of Women, Dalton's Physiology and Heinrich's Chemistry. Only 45 of the 150 students who entered managed to graduate in the class of 1882³ Conspicuous by its absence was a text on pathology or infectious diseases. Infectious diseases were among the most common causes of illness and even death and was extensively covered in the medical texts or books on materia medica. Despite what has been described as the dismal conditions of the medical education system that existed at the time, it would appear that Dr. Long received a good medical education foundation.

THE PHYSICIAN'S ARMAMENTARIUM

Dr. Long's doctor's bag included the following medicaments:

Bismuth; Dover's Powder (contains ipecac, an emetic, and used to treat food poisoning or in smaller doses to manage a cold by suppressing a cough);

Morphine (for pain relief);

Podophylin Compound (used to treat warts);

Cathartic Pills (such as antimony to purge the bowels);

Calomel (Mercurial chloride, a purgative);

Mercury with Chalk (also known as gray powder or blue mass, used to treat syphilis, constipation, tuberculosis or even depression);

Bromide of Potassium (as a sedative or anticonvulsive);

Tincture Aconite (a deadly neurotoxin and poison, but not sure how used);

Fluid Extract of Ergot (used to stop uterine bleeding in a postpartum patient or in smaller doses to treat migraine headache);

Tincture Belladonna (anti-spasmodic); and

Tincture Hydrastis (an anti-inflammatory astringent & antiseptic and also stimulates bile secretion).

Most of these products are no longer used because of their toxic properties. The bag also included some surgical instruments, stethoscope, sphygmomanometer, a fever thermometer, and an obstetric-forceps wrapped in an oilcloth roll. Essential to his practice

³ Long, 24-25.

and in order to attend to his patients, he required a horse and / or pony and a pair of saddlebags along with a carriage.⁴

THE PHYSICIAN'S INCOME

Dr. Long's patients were sometimes many miles away. This meant he travelled under dangerous and treacherous conditions, including winter snow blizzards or terrible storms over mud-trenched roads or even over flooded streams. He describes treating the dreaded diphtheria, which sometimes required a life-saving tracheotomy. General treatment measures included cleanliness, keeping the air moist with steam, and when possible, sucking on ice, feeding a child small amounts at regular intervals, and sometimes feedings by enema when unable to swallow. Occasionally, he used tincture of the perchloride of iron, given as five drop doses every hour, up to half a grain a day for asthma and phthisis.⁵ The only effective medical treatment for convulsions was the use of sodium or potassium bromide given in milk.⁶ Treating hysteria required the patience and kindness of the physician and educating family members with a diet consisting essentially of milk.⁷ Malaria, typhoid fever and tuberculosis were common afflictions. Rural communities were less likely to experience epidemics of cholera, smallpox, typhus and yellow fever. On the other hand, communicable diseases, such as measles, mumps, rubella, influenza, pertussis, chicken pox, scarlet fever, etc. were a regular occurrence in all communities. The treatment of febrile illnesses, included bed confinement, lowering fever with cold sponges or tepid bath, cathartics to keep the bowels open, and tincture of ipecac for cough.⁸ Dr. Long's "kitchen surgery" was mostly related to trauma to include the repair of lacerations or the management of fractures.

⁶ Ibid, 955.

⁷ Ibid, 977.

⁸ Ibid, 80.

⁴ Long, A Prairie Doctor of the Eighties, 53

⁵ William Osler, *The Principles and Practice of Medicine*, (1892; repr., New York: The Classics of Medicine Library, 1978), 109.

Long charged \$1.00 for the care of patients in town, whether it was in the office or in the home, day or night. Bonner, another midwestern (Kansas) rural general practitioner of the same era, charged \$1.50 during the day and double that after 10 PM. Country calls were charged on the basis of distance traveled, at a rate of fifty cents a mile. Depending on the situation additional charges were added for any procedure that was performed. If the patient was bled, he charged \$2.00. Long charged \$10.00 for the spontaneous delivery of a baby.^{9,} In comparison, Bonner would charge \$2 to \$2-\$5 for bleeding a patient, \$30 for a tonsillectomy and \$15.00 for a delivery. ¹⁰ Dr. Mary Elizabeth Roth, a close colleague, and one of the coeditors of this book, told me that her mother paid \$25 to be delivered of her first born in 1935 at Pennsylvania Hospital by a Professor of Obstetrics who limited his practice to 28 deliveries per month. She considered the above fees as steep for rural America in 1885.¹¹ Of course, her mother's delivery was in the middle of the Great Depression.

KITCHEN SURGERY

Before the establishment of hospitals, trauma-surgery would often be performed at the scene of the accident. In the case of a victim who required an amputation of a foot from a crush injury involving a railroad worker, Long describes how he assisted another surgeon in performing the operation at the scene of the accident. A table was improvised and hot water was obtained. Clean, but not sterile conditions were the rule. The surgeon's amputation kit contained a variety of knives, an amputation saw, bone nippers, a tourniquet, tweezers, and scissors. Anesthesia consisted of either ether or chloroform or a mixture of both. Dr. Long placed a loose cloth over the patient's face and dripped the anesthetic into the cloth while the patient breathed deeply. The surgeon proceeded quickly to perform the amputation while others held the man and before the anesthetic wore off.¹²

⁹ Long, A Prairie Doctor of the Eighties, 67.

¹⁰ Thomas N. Bonner, *The Kansas Doctor, A Century of Pioneering,* (Topeka, KS: Kansas Medical Society, Topeka, 1976), 19.

¹¹ Roth, Mary Elizabeth, personal e-mail communication to the author, October 8, 2018.

¹²Long, A Prairie Doctor of the Eighties, 82.

Long described another case of a 16-year-old boy, who was kicked on the side of the head by a horse. He sustained a depressed fracture of his skull and subdural bleed. When he arrived at the patient's home, he was placed on the kitchen table, the head shaved, and using his surgical knives and trephine, the skull fragments were elevated and some removed, with good results.¹³

In another case of kitchen surgery, Long claims that he and Dr. F. L. Frink were the first to perform an appendectomy in North Nebraska. On December 18, 1892, the patient was a sixteen-year-old girl writhing with abdominal pain. Dr. Frink, called upon to assist, administered the anesthetic by chloroform drip, while Dr. Long performed the appendectomy on the patient, lying on the kitchen table. He described the surgery as follows:

"The kitchen table was requisitioned for an operating table. Basins were scarce at the home but several earthenware milk crocks were sterilized by boiling in a wash boiler. The instruments were sterilized by boiling. Sheets, towels and gowns were sterilized by dry heat in the oven of the kitchen stove... Dr. Frink gave the anaesthetic and also assisted. The appendix lay under the incision made when the abdomen was opened-and this may have saved us some embarrassing moments, for, has not one heard of cases of young surgeons hunting for the appendix in vain? The operation was 'fearfully and wonderfully' done. The patient lived to bear ten children."¹⁴

With the development of hospitals and advances in anesthesia, aseptic practices, and surgical techniques, it was always more desirable to perform surgery in the hospital. Because the hospitals were not easily accessible, Dr. Long continued to perform surgery in the patient's home on the kitchen table, which included draining an empyema by thoracentesis, mastoidectomies, treating fractures, and even enucleation of a ruptured

¹³ Ibid, 83.

¹⁴ Long, A Prairie Doctor of the Eighties, 84-86.

eyeball. Long asserted, "Where boiled water can be obtained, it is possible to do an operation with reasonable probability of a successful result."¹⁵

MATERNITY CARE

Most women in labor in rural communities would seek the services of a midwife or the help of neighbors, but Dr. Long, along with many of his general practitioner peers, performed innumerable home deliveries. His obstetrical skills were highly regarded. For that reason, it was not unusual for a colleague or a midwife to call him to come to their aid. He describes one difficult labor, for which a colleague sought his services. In this case, during labor the fetus was lying transversely in the uterus with one or both feet projecting through the cervix. To turn the live fetus and get to a breech presentation is called podalic version. Long's colleague spent many hours in attendance, but he was unable to deliver the fetus. After Dr. Long arrived, he managed the version successfully and delivered the baby in fifteen minutes. When the grateful husband was presented with the twenty-dollar fee from Dr. Long, he resented not only the extraordinary charge, but considered the doctor as greedy. He complained that Dr. Long was present for only a relatively brief time at his wife's delivery; whereas the other doctor was present with his wife all night and worked much harder than he had and the first physician did not charge as much. Long asserted that "if I could do in fifteen minutes what he had not succeeded in doing all night, I thought I was entitled to the amount asked. He paid, but always after patronized the doctor of the first choice."¹⁶

¹⁵ Ibid, 87.

¹⁶ Long, A Prairie Doctor of the Eighties, 98-99.

TUBERCULOSIS



Figure 13. Henry David Thoreau, 1817-1862, (Courtesy National Portrait Gallery)

Among the many prominent people who died of tuberculosis in the 19th century, was the notable author and writer, Henry David Thoreau 1817-1862). Long describes what he considered the remarkable progress during the 50 years of his medical practice from 1885 to 1935 in the management of tuberculosis. This was a disease that was responsible for so many deaths throughout the 19th and even early 20th century, regardless of age, ethnicity, gender or economic status. The mainstay of treatment consisted of rest, sunlight, fresh air, and nutrition; occasionally added was surgery to collapse one lung.¹⁷ According to Osler, a favorable prognosis was likely, if there was "a good family history, previous good health, a strong digestion, a suitable environment, and insidious onset without high fever and without extensive pneumonic consolidation." However, repeated attacks of hemoptysis were an ominous sign.¹⁸ With the development of sanitaria and the gradual development of effective anti-tuberculosis medicaments, mortality from the disease was greatly diminished.

¹⁷ Long, A Prairie Doctor of the Eighties, 109-110.

¹⁸ Osler, *The Principles and Practice of Medicine*, 246.

PNEUMONIA: REMARKABLE PROGNOSIS

Pneumonia was recognized as an infectious disease in the 19th century. In Dr. Long's Nebraska practice, patients were generally expected to recover from lobar pneumonia with supportive care. The treatment consisted of treating the fever with cold water sponging, aconite and coal tar derivatives to bring on sweating; opiates, especially paregoric, to relieve pain; and muriate or carbonate of ammonia to promote expectoration. Most importantly the patient was to be given time to recover while being careful not to do harm. Wisely, Dr. Long offers an old saying: *"physic is the art of amusing the patient, while nature cures the disease."* In his experience, it is remarkable that 90% of his patients in rural Nebraska recovered from lobar pneumonia.¹⁹ One has to wonder how that was possible prior to the development of antibiotics.

ADVANCES IN MEDICAL PRACTICE DURING DR. LONG'S CAREER Besides the advances in managing tuberculosis, the anti-toxin against diphtheria, insulin in managing diabetes, and the elimination of typhoid fever with water purification were among the most dramatic advances during Dr. Long's lifetime. In addition, there were diagnostic x-rays, which revolutionized the way the clinical examination was conducted. The remarkable surgical advances included anesthesia, asepsis, and the application of cocaine as an anesthetic in eye surgery, the surgical management of appendicitis (appendectomy), the introduction of new obstetrical instruments, the commercialization of sterile bandages and the development of splints in managing injuries,²⁰

THE DOCTOR'S WIFE

Dr. Long provides special commentary about his wife. He insists that without her, he could not accomplish what he did. She needed to be totally devoted as a homemaker, laundry woman, mother, caretaker, cook, church and community servant, financial wizard, office manager, entertainer, and even an active participant in the medical auxiliary. She labored no less than he and was no less devoted to him as he was to his patients. She was omnipresent in his practice, and I quote:

¹⁹ Long, A Prairie Doctor of the Eighties, 110-113.

²⁰ Long, A Prairie Doctor of the Eighties, 113-123.

"It was sometimes necessary for the doctor's wife to arrange to send out fresh teams to cross-roads to meet him to save him from driving to town and then back again over part of the same road."

The office was located in the home, so the demands placed on his wife from his patients were a constant. Among her regular duties she devoted one morning each week on her hands and knees scrubbing the floors of the doctor's office to ready them before the patients arrived. Then, she greeted the patients. At times the office doorbell would ring and she would drop whatever she was doing. She would remove her apron, smooth her hair and rush to receive the patients. The kitchen table, which was six feet long and eighteen inches wide had a dual purpose. The family used it for meals and as Dr. Long's operating room table. It was always kept clean.²¹ Mrs. Long was well connected with the people in her community and seemed to know everybody. She made people feel the doctor's family was willing to be "of service to everyone." The doctor and his wife had a very extensive library and allowed the townsfolk, and especially the high school boys and girls to use their home library.²²

²¹ Ibid, 171.

²² Ibid, 178.

CHAPTER V AN URBAN PRACTICE IN THE NINETEENTH CENTURY

PHILADELPHIA / GERMANTOWN

The following account by medical historian Steven J. Peitzman, MD regarding the life and work of Dr. Owen J. Wister (1825-1896) also illustrates the life of a general practitioner in the 19th century just six miles outside of Philadelphia as a totally different geographic setting than rural Nebraska. His story suggests how medical practice was conducted in a more urban setting like Lancaster city during the late 19th century.

EDUCATION

Owen Wister was born and raised in Germantown. As a teenager, he apprenticed with a local physician, graduated from the University of Pennsylvania School of Medicine in 1847, joined the navy as a ship's surgeon, managed to see much of the world, and then returned in 1851 to establish a practice in his hometown. Germantown, was one of America's first bustling suburbs, just outside of Philadelphia.¹

Germantown grew rapidly because, by then, the railroad was well established and made travel in and out of Philadelphia easy. In a span of ten years, the town had more than doubled in population. By 1860 there were more than 17,000 people. So, his practice grew quickly as well.

During this time, he fell in love with a young lady, and tried to maintain a courtship. In a moment of utter frustration and feeling overwhelmed, he wrote to his beloved: "At this moment I have in my care some people severely and dangerously ill and so affected that I could not ask them to see anyone else, not that anyone else would be less suitable, but I am their physician..." In another letter, he writes: "I am utterly exhausted body and mind. My sick list is forty this day, not all to be seen every day, but several times a week so that it ranks about thirty people daily, some of the twice,

¹ Steven J. Peitzman, "I Am Their Physician: Dr. Owen J. Wister of Germantown and His Too Many Patients," *The Fielding Garrison Lecture, Bulletin of the History of Medicine,* 85, no. 2 (01 January 2009): 246.

and some all considerable distances... you may imagine the fatigue I have encountered."²

THE MEDICAL OFFICE VS. HOME CARE

Much of Wister's medical care was provided in his patients' homes, and his surgery, which included gunshot wounds, fractures, lacerations, boils needing lancing, head injuries, etc., was conducted on the kitchen table. Anesthesia was being used at this time, but there is no mention of appendectomies or amputations. The list of illnesses that he managed was nearly identical to those listed by Hertzler and Long. Standard therapies included cupping, bleeding, laudanum (opium), calomel (mercury chloride), chloral hydrate, "tonics" (alcohol-based), Dover's Pills (ipecac and opium for pain and as a diaphoretic), quinine, and cod liver oil.

THE BLUE PILL

The blue pill was calomel in pill form. The calomel was sweetened by mixing it with honey, licorice or marshmallow, and most commonly used as a diuretic or cathartic to treat constipation. As the humoral theory was still being entertained to explain the cause of disease, the blue pill was also used to treat parasitic infections, tuberculosis, and syphilis and even depression (melancholy), as the cathartic would rid the body of black bile. It was known that Abraham Lincoln, known for his melancholia, was prescribed the blue pill. However, as there were hardly any effective medicaments to manage psychiatric illness, the physician's presence, persona and capacity to care were often the only, if not the most effective therapy.³ Like Hertzler and Long, emotional illness was a major presenting complaint or affected whatever other physical disturbance the patient may have had.

² Ibid, 249.

³ Ibid, 262.



Figure. 14. Abraham Lincoln, 1809-1865, 16th President of the United States. (Courtesy Mead Art Museum, Amherst College, Amherst Massachusetts)

After his marriage to Sarah Butler, there is little letup until he burned out completely in 1869, and temporarily "retired" from practice over a threeyear period. When he resumed clinical practice, he and his wife and son moved to Butler Place, his wife's hometown, a northern Philadelphia suburb, where he assumed a staff position at the Philadelphia Jewish Hospital. Here, he engaged in a more relaxed consultative practice with predictable hours, no travel, and no need to provide maternity care.⁴

As illustrated among these physicians in Chapters IV and V, the life of a the 19th century physician was arduous. In nearly all of these examples these physicians were considered honorable, provided excellent medical care and earned handsome incomes, or at least a good living. Certainly, they were highly valued in their respective communities.

⁴ Ibid, 268.

CHAPTER VI: MEDICAL SCIENCE ADVANCES: ANESTHESIA, THE GERM THEORY AND ANTISEPSIS, THE RISE OF SURGERY AS A DISCIPLINE



Figure 15. A 19th century poster announcing "A Grand Exhibition" of "Laughing Gas" (Nitrous Oxide). (Courtesy general anesthesia.com)

The advances in anesthesia, which took root in America during the 19th century with the use of ether, nitrous oxide and morphine, set the stage for the major advances in surgery. Prior to its development, man relied on a variety of analgesics, including willow bark, alcohol and opium, to alleviate pain during any kind of operation.¹

¹ Duffy, *The Healers*, 146.

None of these agents were satisfactory. For a while, hypnosis during the 19th century came into vogue with some better success. Although nitrous oxide was discovered in 1772 by the Englishman, Joseph Priestly, it was not until 1799, in his classic published work, *Researches, Chemical and Philosophical; Chiefly concerning Nitrous Oxide*, Sir Humphrey Davy recognized the anesthetic properties of nitrous oxide. Because it made him laugh, he called it "laughing gas." Around the same time Michael Faraday, the English scientist, discovered the same properties with sulfuric ether.²

Simultaneously with scientists in both Germany and France, Dr. Samuel Guthrie (1782-1848) who received his medical education at Columbia (1810-1811) and at the University of Pennsylvania (1815), while experimenting in his homestead practice in Sacketts Harbor, New York, discovered that chloroform had anesthetic properties.³

It was also at the laughing-gas parties, induced by the inhalation of nitrous oxide and sulfuric ether in the early 19th century, that it became apparent to many that these intoxicants caused individuals to lose pain sensation. Among the first to use these "anesthetics" was William E. Clarke, who in January, 1842 administered ether to a patient who was having her tooth extracted by Dr. Elijah Pope. Because they did not make much of this phenomenon, they were rarely recognized as discoverers of anesthesia. A few months later, in March 1842, Dr. Crawford W. Long (1815-1878), who acquired first-hand experience of the anesthetic properties of nitrous oxide during the laughing-gas parties, while a medical student at the University of Pennsylvania, decided to test the gas in his hometown practice of Jefferson, Georgia, where he successfully and painlessly removed a tumor from his patient's neck. He did several more operations, but because he failed to publish his results until 1849, he too did not get recognized as the inventor of anesthesia.⁴

² Jonathan G. Hardman, *Oxford Textbook of Anesthesia* (Oxford UK: Oxford University Press, 2017), 529.

³ Duffy, *The Healers*, 147.

⁴ Ibid, 149-150.



Figure 16. The American dentist William Thomas Green Morton (1819 -1868), who in 1845, demonstrated the use **of** inhaled ether as a surgical anesthetic. However, his claim that he was the "discoverer of anesthesia" has been disputed. (Courtesy National Library of Medicine)

In the meantime, Dr. Horace Wells, a Hartford, Connecticut dentist, managed to have his own tooth removed under nitrous oxide in 1845. Wells discussed this with his former partner, Dr. William T. G. Morton (1819-1868). Morton, duly impressed, convinced the highly regarded Dr. John Collins Warren to perform a minor surgical operation (tooth extraction) in his surgical amphitheater at Massachusetts General before a medical student audience. On January 20, 1845, while Morton administered the anesthetic, Warren extracted the tooth, but the patient yelled. This was interpreted as subjective pain and a failed demonstration. However, several months later, on October 16, 1846, Morton, now with the use of a purified form of sulfuric ether, returned to Warren after a newspaper account of his successful use of ether in the removal of a tooth several weeks before, to convince him to remove a neck tumor on one of his patients using ether. This resulted in the first successful public demonstration of the use of sulfuric ether in a surgical operation. This operation by "Morton and Warren" was accomplished with much fanfare, and managed to receive, not only national recognition, but quickly spread around the world. It was Dr. Oliver Wendell Homes who suggested to Morton to give the name "anesthesia" to this phenomenon and the name, "anesthetic" to sulfuric ether and other pain-relieving chemicals

that caused the absence of pain. By the end of 1846, anesthesia was being widely used in both England and France.⁵

THE GERM THEORY



Figure 17. Louis Pasteur1822-1895) the French microbiologist who is best known along with Robert Koch, MD of Germany for advancing the germ theory of disease, and the development vaccination theories and specifically vaccines directed against rabies and anthrax. Notably also, his name is associated with the development of pasteurization. (Courtesy Smithsonian Institute)



Figure 18. Dr. Robert Koch, 1843-1910, The German physician and bacteriologist, best known for the "Koch postulates." (Courtesy National Library of Medicine)

⁵ Ibid, 151-152.

After the discovery of the microscope and the 17th century scientist, Athanasius Kirchner who observed under the low power of his microscope little "worms" in the blood. He proposed his "animalcular" theory that these tiny creatures were the cause of disease.⁶ However, it was not until Louis Pasteur (1822-1895), the French immunologist and Robert Koch (1843-1910), the German bacteriologist, who isolated specific organisms that caused specific diseases that led medical science to focus their attention on how to alter the behavior of these diseases by going after their cause.⁷ He proposed what came to be known as the Koch postulates in order to prove that a particular microorganism produced a specific disease or condition. This included: that "the specific organism must be proven to be present in every instance of the infectious disease; the organism must be capable of being cultivated in pure culture; inoculating an experimental animal with the culture would reproduce the disease; and the organisms could be recovered from the inoculated animal and grown again in a pure culture."⁸



Figure 19. Joseph Lister, M.D., 1827-1912, Lister applied Louis Pasteur's advances in microbiology by advocating the use of carbolic acid as an antiseptic, which dramatically reduced infections in surgery. (Courtesy Wikimedia Commons)

⁶ Duffy, *The Healers*, 39.

⁷ Starr, *The Social Transformation of American Medicine*, 35.

⁸ Roy Porter, *Cambridge Illustrated History of Medicine*, (Cambridge, UK: Cambridge University Press), 185.

Beyond the introduction of anesthesia and the wonderful discoveries of Pasteur and Koch, it was the advent of antisepsis by the British physician & surgeon, Joseph Lister (1827-1912) that did so much to elevate surgery into a highly respectable discipline.⁹

EUROPE AND AMERICA'S NEW MEDICAL SCIENTISTS



Figure 20. Scene at a Union Civil War Hospital, probably Carvel Hospital near Washington, DC, c. 1863. (Courtesy National Archives and Records Administration)

Following the Civil War, and with the country's economic recovery, many Americans sought to advance their medical careers by attending the great scientific institutions of Europe. Over the decades following the Civil War, thousands of Americans advanced their medical education in the scientifically based medical schools of Europe. They were excited with their new discoveries and a passion for reform of American medicine. These recent graduates were being heard, but resistance from entrenched faculty who fought over control of the medical schools and loss of income, had to be overcome.¹⁰

⁹ Lindsey Fitzharris, *The Butchering Art*, (New York: Scientific American / Farrar, Straus and Giroux, 2017), 158-159.

¹⁰ King, "II. Medical Education: The Early Phases," *In American Medicine Comes of Age, 1840-1920,* 8.

CHAPTER VII: MEDICAL EDUCATION REFORM & THE PROMOTION OF SPECIALIZATION

AT LEAST A HIGH SCHOOL EDUCATION

By the late 19th century, among the changes shaping the entrance requirements to most medical school included at least a high school diploma. There were still some medical schools which still waivered on that requirement as long as they had a "common school education" and could read and write. Some schools even required a minimum of one year of college preparation. The new Johns Hopkins Medical School, which enrolled its first class in 1893, required a bachelor's degree with required courses in Biology, Chemistry, German, and French. They hired full-time faculty and were carefully chosen, based on their advanced education, training and specialized interest. In most cases, they acquired their expertise by having studied with reputable medical scientists in the great academic medical centers of Europe. Such physicians were in an honorable position and recruited as medical school faculty.¹

By 1876 medical schools such as Chicago Medical School (now Northwestern), Harvard, the University of Michigan and Syracuse added paid full-time faculty, required three years of study and extended the academic year to nine months.²

Although slow to join these changes, the University of Pennsylvania had a special committee of reform-minded faculty who successfully argued before the Trustees to install a graded curriculum as follows:

"First Year: Anatomy, with constant dissection; physiology, inorganic chemistry, materia Medica, pathology and histology "Second Year: Theory and practice of medicine surgery and obstetrics; therapeutics, organic chemistry, physiology, anatomy, and clinical rotations "Third Year: The same as in the second year, but more advanced clinical rotations and laboratory study."

¹ Flexner, Abraham, *Medical Education in the United States and Canada*, 28.

² Corner, *Two Centuries of Medicine*, 142.

Advancing to each successive course would be granted only after successful passing an examination on the preceding subject material.³

The University of Pennsylvania was among the first American medical schools to establish its own teaching hospital. It opened the doors of the Hospital of the University of Pennsylvania ("HUP") in 1874.⁴ The teaching hospital with bedside teaching came to replace the apprenticeship system.⁵

In time, the American Medical Association recognized the medical profession's expertise in certain specialized areas. At the annual meeting in 1859, they invited academicians to present papers that covered the basic sciences such as anatomy and physiology and clinical areas such as medicine, surgery and obstetrics. By 1887, at the International Congress of Medicine, the AMA recognized the clinical disciplines of medicine, surgery, obstetrics and gynecology otorhinolaryngology, ophthalmology, dermatology, syphilogy, neurology, psychiatry, and care of the diseases of children as formally approved specialties.⁶ However, there were no board certification programs or formal standards for specialization in place at this time.

³ Ibid, 146.

⁴ Duffy, *The Healers*, 263.

⁵ Corner, *Two Centuries of Medicine*, 140.

⁶ King, "Medical Practice: Specialization," In American Medicine Comes of Age, 1840-1920, 96.

WILLIAM H. WELCH, M.D. (1850-1934)



Figure 21. William H. Welch, MD, 1850-1934, was the first faculty member and Dean of the new medical school at Johns Hopkins. He established a college education degree as an entrance requirement and laboratory medicine as critical in the medical training and education of America's physicians in the 20th century. (Courtesy National Library of Medicine)

The new generation of reputable American physician leaders who advanced their medical education in the scientific centers of Europe, continued to advocate for change. Among America's new academic giants, was William Welch, MD, an 1875 graduate of Columbia University, who in 1876 and 1877 studied in the laboratories of the outstanding European physiologists, microscopists, and anatomists, including Julius Cohnheim and Rudolf Virchow, the "Father of Pathology." He returned to New York to establish his clinical laboratory at Bellevue in 1878, where students flocked to learn bacteriology and microscopic

pathology. Dr. Welch developed a reputation as a trailblazer in promoting scientific research.⁷

⁷ Duffy, The Healers, 229.

William Welch insisted that no medical school "*can hold even a respectable place in the march of education and progress unless it is provided suitable laboratories for scientific work.*" He argued that the clinical laboratory was the cornerstone of an academic medical center. He advocated that a clinical laboratory, including chemistry, microbiology, and pathology, be established in every hospital. Understandably, the clinical laboratory took time to implement, as this was an expensive undertaking.⁸

JOHNS HOPKINS (1795-1873)



Figure 22. Johns Hopkins, 1795-1873, from whom Johns Hopkins Uniersitytakes its name. (Courtesy biography.com)

One of the most important developments in shaping America's medical education system took place in 1873 when the wealthy Baltimore merchant, Johns Hopkins died and bequeathed \$7 million to found a university, a hospital and its own medical school.

⁸ Ibid: and King: "Clinical Laboratories Become Important 1870-1900," In *American Medicine Comes of Age, 1840-1920, 53-54.*

DANIEL COIT GILMAN (1831-1908)



Figure 23. Daniel Coit Gilman, 1831-1908, visionary first president of Johns Hopkins University, (Courtesy Johns Hopkins University)

The university opened its doors in 1876 under the visionary direction of its president, Daniel Coit Gilman (1831-1908). Gilman established his reputation as a leading academic while president at Yale College and then president of the state-wide University of California. He Gilman then turned to John Shaw Billings, MD to advise him on creating the university hospital and its medical school.⁹

JOHN SHAW BILLINGS, M.D. (1838-1913)

John Shaw Billings, MD received his medical education at Cincinnati Medical College. Following his participation in the Civil War as an army surgeon, he was instrumental in the development of the Surgeon General's Library, the forerunner of the National Library of Medicine. Based on his visits and study of the leading European academic medical centers, Billings outlined to the Johns Hopkins university trustees his vision of what would constitute the Hopkins model for a medical school and its hospital. The vast

⁹ Duffy, John, *The Healers*, 262.

and costly Johns Hopkins Hospital opened in Baltimore in 1889 and its medical school in 1893.¹⁰ Dr. Billings recommended that Dr. William H. Welch be appointed as professor of pathology and the Dean of the medical school. It was Billings, who encouraged Welch to convince Dr. William Osler to leave the University of Pennsylvania to join him at the new John Hopkins School of Medicine.¹¹

THE MAGNIFICENT FOUR



Figure 24. "The Four Doctors" by John Singer Sargent (1906), Welch, Halstead, Osler, and Kelly. (Courtesy Wikimedia)

¹⁰ King, "Clinical Science Gets Enthroned," In American Medicine Comes of Age, 1840-1920, 65.

¹¹ Manfred Wasserman, Manfred, "An Important John Shaw Billings Find," *Bulletin of the Medical Library Association* 72, no. 1, (January 1984), 23.

As expected, William H Welch made the laboratory and the recruitment of clinical investigators the cornerstone of the medical school. William Osler, who assumed the position of professor and chief of medicine. Welch succeeded in convincing three other outstanding academicians to join his faculty including Dr. Franklin P. Mall, as professor of anatomy, Dr. Howard Kelly, as professor and chief of obstetrics and gynecology, and Dr. William Halstead, as chief of surgery. They joined Welch to establish a unique teaching institution that was to include specialized clinical training and clinical research. These four outstanding clinicians were all strongly influenced by the French and the German schools, and in particular, the great German medical scientist, Dr. Rudolf Ludwig Carl Virchow (1821-1902). Moreover, when the school opened in 1893, all of its students met the school's new entrance requirements. They were college graduates with a bachelor's degree including a background in chemistry and biology with a knowledge of French and German.¹² The medical school year was nine months in duration and students attended for four years in order to complete their medical studies and acquire a medical degree. By 1897, the AMA was pushing for a four-year course of study as a standard for a medical degree.¹³

A NEW STANDARD IN MEDICAL EDUCATION AND ACCREDITATION OF MEDICAL SCHOOLS

The AMA, dating back to its origins in 1847, established standards for medical education, but did not have either the authority or the ability to enforce these standards. In 1876, the Association of American Medical Colleges (AAMC) was formed. Standards were developed for the education of a candidate for the medical degree. The AMA did not assume authority to enforce these standards to accredit medical schools until after the Flexner Report in 1910.

In 1942, the AMA and AAMC joined together to form the Liaison Committee on Medical Education (LCME), which became the official authority to maintain standards for undergraduate medical education (pre-

¹² Duffy, The Healers, 263.

¹³ Ibid, 262.
doctoral) and to accredit medical schools, which grant an M.D. degree.¹⁴ The osteopathic schools, which grant a Doctor of Osteopathy (D.O.) degree, are accredited through the Commission on Osteopathic College Accreditation of the American Osteopathic Association.

In 1906, the AMA launched a new grading system, which gave a score to measure the overall quality of the country's 160 existing medical schools. This had a significant effect on bringing about change in the schools. The schools were categorized into four classes, A, B, C, & D, with A being among the best and D the poorest. There were a series of items, each of which was given a score of 1 to 10. Thus, a school that acquired a total score of 90 or better was given an A rating; B, meant a score of 80 - 90; C, from 70 - 80; and D, below 70. The AMA provided this information to each of the state boards with the recommendation that a school with a score of less than 50 be disqualified and lose its accreditation or "recognition" by that state. Those in the D category received "conditional recognition" and had to undergo necessary improvements. All medical schools, as deemed appropriate, were offered suggestions for improvement.¹⁵

¹⁴ Victor Johnson, "The Historical Development of Accreditation in Medical Education," JAMA: *The Journal of the American Medical Association* 181, no 7 (August 18, 1962), 136-139.

¹⁵ King, Lester, "The Flexner Report of 1910," in *American Medicine Comes of Age, 1840-1920,* American Medical Association, 1984, 92.

THE FLEXNER REPORT



Figure 25. Abraham Flexner, 1866-1959. (Courtesy Wikimedia Commons)

Abraham Flexner (1866-1959), a highly respected educator from Louisville, Kentucky, and brother of Simon Flexner, MD, of the internationally renowned Rockefeller Institute for Medical Research, was called upon to perform a careful analysis of the nation's medical schools by the Carnegie Foundation. The Flexner Report was published in 1910. In its introductory pages, Henry S. Pritchett, President of the Carnegie Foundation, makes it quite clear that there has been "an over-production of uneducated and illtrained medical practitioners," dominated by the proprietary schools. Medical education had become a lucrative business, and medical schools were financially motivated to attract as many students as possible with little regard to the quality of their preparation for such an undertaking. Medical educators based their instruction mainly on a didactic system with little regard to the laboratory sciences or bedside teaching, both considered critical to a medical student's education.¹⁶

During his visits, Flexner asserted that all students entering medical school should acquire competence in the knowledge of chemistry, biology and physics. This would mean, in almost all cases, the need for at least one year of college preparation. Flexner described the four-year medical school curriculum as follows: the first two pre-clinical or basic science years would

¹⁶ Flexner, Medical Education In the United States and Canada, x.

include a didactic portion coupled with intensive study in the laboratory, including anatomy, histology, embryology, physiology, and biochemistry. This would be followed by the study of pharmacology, pathology., bacteriology and physical diagnosis.¹⁷ The last two years would consist of clinical work in the hospital with rotations in medicine, pediatrics & infectious diseases, surgery and obstetrics, as well as the specialties of dermatology, ophthalmology, otorhinolaryngology, neurology, etc. This would include the integration of the clinical laboratory and the autopsy room.¹⁸ The student was to become skilled in the microscopic examination of the urine, sputum and blood, etc. Furthermore, the autopsy-room was where the student was to acquire knowledge of morbid anatomy, and learn if necessary, mistakes that may have been made in diagnosis and treatment. The dispensary, or what is often referred to today as the clinic, was where the student was to acquire additional experience in the care of the ambulatory patient. As in the case of the patients seen in the hospital, the student was assigned to a group of patients. The work-up of each patient included taking a history, conducting a physical examination, and performing the necessary microscopic examination of the urine and blood. The student was then expected to establish a working diagnosis and develop a treatment plan.¹⁹ Of course the quality of the school was governed by an adequate number of classrooms and faculty, the necessary laboratory facilities, and a teaching hospital with large numbers of patients to provide a patient mix of varying medical problems and diseases.

The teaching hospital was considered essential, and Flexner highlighted the development of the teaching hospital at the University of Michigan dating back to 1869. From a remodeled dwelling-house capable of accommodating twenty patients, it grew into a modern two hundred bed teaching hospital by 1910. Every patient was available for instruction and cared for by paid faculty of the medical school. The wards and amphitheater clinics were the laboratory of the professor and students were assigned individual cases. ²⁰

¹⁹ Ibid, 94.

²⁰ Ibid, 106.

¹⁷ Ibid, 61.

¹⁸ Ibid, 95-96.

Improvements in the medical school curriculum had already begun in the mid 1880s, brought about principally through the efforts of forward-thinking reform-minded medical scientists, many who had returned from the great medical centers of Europe, but were greatly accelerated by the AMA's Council on Education and its secretary, Nathan P. Colwell. By 1905, schools recognized the writing on the wall that if they were to meet their public obligation and produce competent physicians, they would have to comply. Otherwise, they could not survive. Their survival depended on the state licensing boards. The AMA's Council recognized that it had only an advisory role, so, it went about methodically educating state and county medical societies, medical school deans and various interested groups on accepting these minimal standards. The Council's grading system (A, B, C, & D) of the 160 existing medical schools in 1906 and its careful deliberate approach, while not making its data public, helped to convince state boards to deny recognition of the poor schools.²¹

Therefore, Flexner's work served mostly to reinforce the work already underway by the AMA and AAMC and accelerated the process of reform.²² To illustrate some of Flexner's findings, a summary is provided in the appendix, entitled, Flexner's analysis of the medical schools in Pennsylvania.

1920 MEDICAL SCHOOL CURRICULUM

Flexner's influence was mostly felt following his appointment as secretary to the General Education Board of the Rockefeller Foundation in 1912. The Board distributed more than \$50 million to those schools, which were considered worthy to receive funds. These funds were used to add full time faculty, develop their laboratories, conduct research and further advance medical knowledge. In today's dollars this would be equivalent to a foundation distributing \$1,327,084,211 in 2018. Over a billion dollars! Other foundations joined in to help the 'good' schools, which made it almost impossible for the 'bad' schools to compete or stay open with the support of the better schools.

Although one might say Flexner's Report was overrated because the reforms were already underway in most medical schools, and some of the more

²¹ King, "The Flexner Report of 1910," In American Medicine Comes of Age, 1840-1920, 91-92.

²² Ibid, 88.

poorly performing schools were already shutting down, the report stands alone as an impressively detailed critique. It helped to dramatically advance medical education in America. By 1914, as a result of closure or merger there were only 100 schools in operation. Over the next 30 or more years, more mergers occurred and most medical schools were fully integrated into the university system and the proprietary schools disappeared. Reforms continued, and the American medical education system reached new heights.²³ By 1930 there were only 66 schools in operation.

In addition to the changes taking place in the nation's medical schools, the AMA persisted in its efforts to make the internship after medical school as essential training before the doctor entered independent medical practice.²⁴ These dramatic changes in the formation of a physician resulted in making America's medical education system from one of the best in the world. All the schools gradually fell in line with the new reforms to include new state requirements for licensure of medical school graduates.²⁵

FROM APPRENTICESHIP TO THE INTERNSHIP

Clinical instruction or bedside teaching became invaluable to the student's education. Experience, caring for patients in the hospital under an attending's supervision following the completion of a student's formal medical education or internship, was considered by many as essential to prepare a physician for medical practice. At the Royal Infirmary of Edinburgh, they were first referred to as "residents," as these house physicians lived as residents in the hospital.²⁶ This carried over into the colonies.

With the development of the almshouse and hospitals, the hospital internship gradually replaced the traditional apprenticeship. The internship was, in effect, a hospital apprenticeship. Public hospitals like Bellevue (founded 1736, interns added in 1817), Philadelphia General Hospital (founded 1732, interns in 1881) and Cook County in Chicago (founded 1831, interns in

²⁶ Dennis K. Wentz and Charles V. Ford, "A Brief History of the Internship," *Journal of the American Medical Association*, 253, no. 24, (28 December, 1984): 3390.

²³ Ibid, p. 94.

²⁴ Duffy, The Healers, 264.

²⁵ King, "The Flexner Report of 1910," 93-94.

1882) provided care to the those with infections confined to special wards, prisoners and indigent patients. These "public patients" allowed the intern the greatest range of responsibility and experience and were the most desired internships at the turn of the 20th century. Inasmuch as an internship with an esteemed senior attending or professor became a desirable goal for many ambitious students; it was of benefit to the professor or attending, as the intern helped him with his workload. Hospitals benefitted as their patients were getting round-the-clock care and had additional witnesses to care. However, Massachusetts General Hospital discontinued their house staff physician program in 1877 because of the alarm raised by senior medical staff regarding the amount of "authority" the residents were assuming over the care of the patients. They did not reinstate their house staff program until 1911.

By 1904, when the AMA's Council on Medical Education (CME) established the "ideal standard" for medical education, the internship was considered as essential and even suggested that it be required, in addition to passing a board examination, before a physician was awarded a medical license. In 1912, Pennsylvania was the first state to make both a requirement. By then, 50% of graduates completed internships and by 1914, it grew to 75%. By the 1930's, although not a licensing requirement by all states, most physicians were expected to complete an internship before entering medical practice. By 1940 with the increasing number of specialties, the term "residency" was well accepted; even though in 1927, the CME referred to specialty programs as special internships. ²⁷

Although more schools were being developed, they were not enough to keep up with the need. In 1960 there were 85 allopathic schools and seven osteopathic schools producing less than 8000 graduates yearly. This number was proportionally far less than the number of graduates in 1900 (about 5,000) when the population of America was just over 76 million and in 1960 when it was 179 million people.²⁸ Whereas the vast majority of practitioners in 1900 were in general practice, by the late 1960s, this dropped to less than

²⁷ Herman Miles Somers, and Anne Ramsay Somers, *Doctors, Patients and Health Insurance,* (Garden City, N.Y: Anchor Books, Doubleday& Company, Inc, 1961), 182 and *Wentz, "A Brief History of the Internship," 3290-3291*.

²⁸ *The World Book Encyclopedia*, 1974 ed. s.v. "History of the United States," (Chicago: Field Enterprises Educational Corporation, 1974), 20: 111, 119.

10% of the allopathic graduates entering general practice and the majority of those still in general practice were older than 55.²⁹ Although the percentage of osteopaths entering general practice was much higher in absolute numbers it was still very small. At the time of the Flexner Report (1910), there was one doctor for every 568 persons. Some towns with less than 200 people might have two and even three physicians.³⁰

By 1940, the number of physicians in the United States on a physician/population basis was less with one physician per 800 people.³¹ By 1960, it increased only moderately by one doctor for every 676 people.³² However, by 1966, the number of general practitioners had declined still further and only 30 % of the population of physicians were in general practice and many were approaching retirement.³³

STATE BOARDS AND LICENSURE

The American Medical Association advocated that the "license" to practice medicine should remain the purview of each state and separate from completion of a physician's medical education. The AMA also argued that the medical degree should be viewed as just one of the necessary professional requirements for licensure by a specific state. Graduation with a doctoral degree would not by itself be considered a privilege or right to practice medicine. The AMA stated that every state should have the authority, through its licensing boards, to establish its own criteria for licensure to include "high moral character" and the passing of a licensing exam.³⁴

Throughout much of the 19th century, the proprietary medical schools had argued that the medical degree was all that was necessary to practice medicine. Furthermore, licensing requirements varied considerably from

³² Ibid.

³³ Ibid, 358.

²⁹ John P. Geyman, *The Modern Family Doctor and Changing Medical Practice, New York: Appleton-Century-Crofts, 1971), 4.*

³⁰ Flexner, *Medial Education In the United States and Canada*, 126.

³¹ Starr, Paul, *The Social Transformation of American Medicine*, 422.

³⁴ King, "Medical Education: The AMA Surveys the Problems," 25.

state to state. Where standards existed, there was little consequence for noncompliance with state standards. Theoretically, if enforced, a physician without a license was legally unable to collect a fee. During the egalitarian Jacksonian era of the 1820s, a distrust of elitists placed a licensed physician in in a privileged class to collect higher fees, which halted the movement toward licensure.³⁵ By the time of the Civil War, nearly every state eliminated any kind of licensing requirement to practice medicine.³⁶ By the turn of the century, however, essential to the reforms was the implementation of state licensure. Graduation from medical school and in some states the passing of a state medical licensing exam was needed to acquire a medical license. Once licensed, physicians entered community practice as general practitioners.

PENNSYLVANIA MEDICAL LICENSING REQUIREMENTS IN 1960

As the medical education system kept improving, the state licensing requirements became more uniform. Specialists established their own examining boards and requirements for certification and soon created lifelong learning opportunities to maintain their expertise as specialists through continuing medical education.

Soon after the publication of the Flexner Report, the homeopathic and eclectic medical schools gradually adopted the orthodox allopathic medical curriculum to become fully integrated into the allopathic system. With the advent of the germ theory, it was just a matter of time for this transition to occur. Whereas allopathic medicine relies on pharmacology and other interventions to alter a disease state, homeopathy relies on the use of medicinals that produce similar symptoms of a disorder when at full strength, yet in miniscule doses do not induce adverse effects. Eclectics combine all available therapeutic modalities to induce alleviation of symptoms or cure. Osteopathic medicine, on the other hand, relies on the laying on of hands or manual adjustments of the musculoskeletal system to alleviate diseases, even if not directly related to the musculoskeletal system. Although osteopathy has adopted many of the allopathic practices, including

³⁵ Duffy, *The Healers*, 176.

³⁶ Ibid,177.

mainstream diagnostic modalities and the prescribing of pharmaceuticals and surgical interventions, it has retained spinal manipulation as an important adjunct and fundamental principle in managing various ailments. Most states created in the 19th century continue with separate licensing boards for osteopathy and allopathic medicine. Chiropractic medicine, on the other hand, which is an alternative form of medicine, concentrating on the diagnosis and treatment of mechanical disorders, mostly dealing with the spine, has become well established, and maintains its own licensing board.³⁷

³⁷ King, "Medical Education: The AMA Surveys the Problems," In *American Medicine Comes of Age*, *1840-1920*, 320.

CHAPTER VIII: THE CREATION OF SPECIALTY SOCIETIES

DOCTORS WITH SPECIALIZED KNOWLEDGE AND SPECIAL SKILLS

By necessity nearly all physicians in the colonial period were generalists. Those educated in the European schools were capable of performing surgery, which included the extraction of teeth, management of injuries, fractures, amputations, removal of skin tumors and obstetrics, and sometimes much more. Most of their apprentices were capable of doing most of what they were taught by their mentors and thus earned the privilege of being among the regular physicians. Some became so skilled in performing more difficult operations such as the removal of breast cancers, ovarian tumors, and excision of bladder stones. Given the needs of the times, most performed at least some surgery. Before the advancements of hospitalbased surgery, Hertzler devotes an entire chapter on practicing "kitchen surgery," in his patients' homes. He reveals the many opportunities that presented themselves to manage serious maladies and saving people's lives, including appendectomies, draining lung abscesses, removing tumors, and treating major injuries and fractures. The mid-western country doctor, Arthur E. Hertzler, MD, had become a notable surgeon. The family doctors would call on him to come to the rescue of their patients, who needed surgery. They would help him during the operations by administering the anesthesia. As their reputation in performing surgery spread, they could attract patients from far away and charge higher fees.¹

As medical schools became more sophisticated following the Civil War, specialists or physicians, particularly knowledgeable in materia medica (pharmacology), surgery, clinical medicine, and diseases of women and children, were recruited as consultants to attract the patients. As time went on, especially towards the turn of the century, and following the Flexner reforms, medical schools were able to add full time paid faculty in the disciplines of dermatology, ophthalmology, otorhinolaryngology (ENT) neurology, etc. Physicians with such special skills and expertise soon

¹ Arthur E. Hertzler, "The Horse and Buggy Doctor," (Lincoln, NE: The University of Nebraska Press, 1938, 214-247.

organized specialty societies, so that they could share their experiences and further develop their discipline.²

THE BASIC MEDICAL SCIENCES AND THE CLINICAL SPECIALTIES

As early as 1859, the AMA recognized six specialized areas of medicine including: "(1) anatomy, microbiology and physiology; (2) chemistry and materia medica; (3) practical medicine and obstetrics; (4) surgery; (5) meteorology, medical topography, and epidemic diseases; and (6) medical jurisprudence and hygiene." Later in 1887, these specialized areas expanded into 18 separate disciplines divided between the basic sciences and clinical areas. The clinical disciplines included medicine, surgery, obstetrics and gynecology, as well as ophthalmology, otology, dermatology and syphilis, nervous diseases and psychiatry, laryngology and diseases of children (pediatrics).³

SPECIALTY SOCIETIES

The specialty societies developed educational and training requirements, and eventually organized a board to certify the specialty status of its members. The toughened licensing requirements also clarified their differences with the irregulars and greatly diminished the quacks. Besides the advances in medical science, it was also the introduction of new technologies, such as eye glasses, the ophthalmoscope, the laryngoscope, the microscope, the obstetrical forceps, and new surgical instruments, which fostered the creation of specialists.⁴ By 1864, the ophthalmologists established their own specialty society and several medical schools including Cincinnati, Bellevue (Columbia), Rush (Northwestern), Harvard and Pennsylvania, established

² King, "Medical Practice: Specialization," *In American Medicine Comes of Age, 1840-1920*, 96-97.

³ Ibid, 96.

⁴ Lyons and Petrucelli, *Medicine, An Illustrated History, 538.*

departments of ophthalmology.⁵ The first of these societies to develop a certification board was ophthalmology in 1916.⁶

THE DEVELOPMENT OF SPECIALTY BOARDS

The board determined the qualifications necessary for certification including the number of years of residency and the examination requirements. Specialization accelerated throughout the first half of the 20th century, at the very same time the country was undergoing a reduction in the number of medical schools and newly minted graduates for a growing population.⁷

By 1941, the AMA recognized sixteen primary specialty boards, covering organ systems, including ophthalmology, otorhinolaryngology, urology, dermatology, orthopedics, colon-rectal surgery, and neurologic surgery; and the broader areas of radiology, anesthesiology, pathology, general surgery, plastic surgery, psychiatry-neurology and internal medicine. The specialties restricted to the care of children represented pediatrics while care of women and birthing were designated as obstetrics and gynecology.⁸

In 1931, 75% of practitioners were in general practice, but by 1949 it was fifty percent and continued to fall, dropping to 21% by 1967. In the meantime, the number of specialists went from 15% in 1931 to 43% in 1967.⁹ Additionally, many of the generalists being discharged from the military were also incentivized by the GI bill, to return to their academic medical centers to specialize.¹⁰ With far fewer general practitioners, and many of the graduates settling in suburban America following World War II, the problem of access to care was particularly acute in both the inner cities and rural communities. Hospital emergency rooms became first-line care for

⁸ <u>http://www.abms.org/about-abms/history/</u>

⁹ Geyman, The Modern Family Doctor and Changing Medical Practice, 4.

¹⁰ Starr, *The Social Transformation of Medicine*, 357-358.

⁵ King, "Medical Practice: Specialization," 96.

⁶ Duffy, *The Healers*, 295.

⁷ John P. Geyman, *Family Practice: Foundation of Changing Health Care,* (New York: Appleton-Century-Crofts, 1980), 4.

many Americans, and hospital-based outpatient clinics were increasing to care for the medically indigent. This was forcing hospitals to hire full time doctors to take care of this growing number of patients This was helpful for those living in urban settings, but not so helpful those living in rural areas. In the urban areas with hospitals close by, the pediatricians and specialists in internal medicine were by default becoming the primary care physicians. The problem was particularly acute in rural America where small communities that once had a general practitioner no longer had access to a general practitioner.¹¹

Since hospitals and the physicians on staff received significant benefit from the house staff, there was strong incentive for hospitals to sponsor not only internships, but also residency programs in different specialties. In the late 19th century interns and residents were paid very small wages and given housing to provide around the clock care for patients as the residents got experience under respected clinicians. As hospitals saw the quality of care improve when there were teaching programs, they supported house staff with meals, housing, uniforms and some funds for advanced training of two or more years beyond the internship. Stipends also improved. This financial arrangement changed radically with the passage of Medicare in July 1966, when Medicare and Medicaid funds were designated for graduate medical education in hospitals. Hospitals also benefitted as there was now third-party reimbursement related to direct costs of care, such as salaries of residents and faculty, maintaining teaching facilities, and indirect costs attributed to extra diagnostic testing by trainees. Some hospitals realized a windfall, and residency programs proliferated.¹²

BIG PROBLEM: THE THIRD PARTY FOLLOWING THE ENACTMENT OF MEDICARE IN 1965.

With third-party reimbursement for hospital care and house officer training as a legitimate cost, hospitals could afford to increase the number of their house staff. Moreover, since there was no regulation to curtail the number or size of these specialties, hospitals felt little hesitation to create training opportunities and residency programs. Soon hospitals offered more

¹¹ Ibid, 382.

¹²Bobby Jindal and Tom Dowdal, "Medicare's Role in Financing Graduate Medical Education," *JAMA: The Journal of the American Medical Association* 281, no. 13 (April 7, 1999): 1328.

internship and residency positions than United States medical school graduates could fill them, resulting in intense competition among hospitals for house staff. Hospitals that were not part of an academic medical center were at a serious disadvantage to recruit the interns and residents needed to fill their positions, so, they relied much more heavily on filling their positions with international medical graduates. ¹³ The cost to Medicare continued to rise sharply from \$4 billion in 1990 to \$7 billion in 1997. Despite these expenditures, the maldistribution of specialists vs. primary doctors persisted. In order to curtail the rising cost of federal expenditures for graduate medical education, the US Congress put a cap on the number of residents that would be subsidized.¹⁴

MILITARY RANKING OF PHYSICIANS: SPECIALISTS VS. THE GENERALIST

During World War II, physician specialists were automatically given higher rank, higher pay and commanding roles. This further added to the status of the specialist. The general practitioner received a commission as a second lieutenant, while specialists were commissioned as captains or higher. If the physician happened to be a board-certified surgeon and was serving in an academic medical center, the doctor received even higher rank. I.S. Ravdin, M.D., professor of surgery at the University of Pennsylvania, was commissioned a general in the U.S. Army. Thus, prestige and the higher social value associated with being a specialist had become a major motivator in career choice.¹⁵

¹³ Starr, The Social Transformation of American Medicine, 356.

¹⁴ Jindal and Dowdal, "Medicare's Role in Financing Graduate Medical Education," *JAMA: The Journal of the American Medical Association*, 1328.

¹⁵ John R. Stanard, *Caring for America, The Story of Family Practice,* (Virginia Beach, VA: The Donning Company, 1997), 31.

CHAPTER IX: THE "PRMARY PHYSICIAN"

THE AMERICAN ACADEMY OF GENERAL PRACTICE (AAGP) 1947

In response to the specialization of the medical profession, the American Academy of General Practice (AAGP) was established in 1947 to help restore general practice to its essential place. The objectives were to maintain the highest standards of general practice, encourage medical students to become family doctors, preserve the right to practice to the full extent of the general practitioner's ability, provide postgraduate training opportunities, advance the science of medicine, and preserve the right of free choice of physician by the patient.

The AAGP began advocating for educational reforms, both at medical school and graduate medical education levels. A more vocal group called for the creation of a new kind of "specialist," who would be broadly trained and educated, holistically oriented, well grounded in psychosocial medicine, and just as sophisticated as the traditional specialist. The AAGP produced its own medical journal ("GP") and was the first medical organization to require continuing medical education of its members to include 150 hours of CME credits every three years to promote life-long learning.¹ The AAGP also created its own board, American Board of General Practice (ABGP) in 1960, and the American Board of Family Practice Advisory Group in 1964. However, without the backing of the academic community and the various academic councils of the American Medical Association, both these endeavors ultimately failed.²

KERR WHITE'S CLASSIC STUDY ON "THE ECOLOGY OF MEDICAL CARE"

¹ Geyman, The Modern Family Doctor and Changing Medical Practice, 8.

² David P. Adams, *American Board of Family Practice*, *A History*, (Lexington, KY: The American Board of Family Practice, 1999), 18.



Figure 26. Kerr L. White, M.D. (1917-2014). (Courtesy Kerr White Health Care Collection, University of Virginia)

Kerr White M.D. FACP trained as an internist after core education at McGill University in Canada. He developed interest in the ecology of medical care as he witnessed the overwhelmed hospital clinics after his service in WWII. Kerr White received one of the first Hill -Burton Act grants for patient care research and his findings were published in the New England Journal of Medicine in 1961, entitled, "The Ecology of Medical Care". This report served to underscore the need for radical change in the American medical education system. He was first to introduce the term and concept of "primary" medical care," which he learned from his British mentors while doing a fellowship in England in the 1950's. White demonstrated in a graph of nested boxes the proportion of patients at different levels of care and showed that 90% or more of the health and medical care burden of a population of people 16 years of age or older can be managed in the "primary care arena."³ Over a period of a year, he revealed that in a population of 1,000 people, 16 years of age and older, 750 will experience a disturbance in their health that would justify a visit to the doctor. Among these 750 people, however, only 250 sought the services of a doctor; the vast majority of these were cared for in an ambulatory setting, nine of 1000 were hospitalized, five were seen by a consultant, and only one was cared for in a tertiary care center. This study was important in highlighting the disparity that existed even in the medical education system, where the focus was more on the care of the patient in the tertiary care or hospital arena than in the primary care setting. With this article and a subsequent publication, Dr. White helped to emphasize the central role in health care delivery of the

³ Kerr L. White, T. Franklin Williams and Bernard G. Greenberg, "The Ecology of Medical Care," *The New England Journal of Medicine*, 1961, no. 265, (November 2, 1961), 885-892.

primary care practitioners.⁴ Larry Green MD, Chair at the Department of Family Medicine at the University of Colorado, revisited this study 40 years later. He was able to show similar results and conclusions, emphasizing that the pressing need for more primary care physicians and providers persisted.⁵

THE AMA'S WILLARD AND MILLIS REPORTS



Figure 27. John S. Millis, PhD (1903-1988). (Courtesy Case Western Reserve University Archives)

In 1966, three pivotal reports gave strong impetus for the creation of a specialty in family medicine. These included the Folsom Report (The Public Health Service National Commission on Community Health Services), the Millis Report (AMA'S Citizens Commission on Graduate Medical Education) and the Willard Report (AMA's Ad Hoc Committee on Education for Family Practice). These three reports advocated for a new kind of specialist to assure personalized family oriented continuing comprehensive health care.⁶ The Willard committee report warned that the success of their recommendations would only be possible if there were

⁴ Kerr, L. White, "The Medical School," *In Life and Death and Medicine*, (San Francisco: W. H. Freeman and Company, 1973), 10.

⁵ Larry Green, "The Ecology of Medical Care Revisited," *The New England Journal of Medicine* 344, no. 26 (June 28, 2001), 2021-2025.

⁶ Stanard, *Caring for America*, 34.

significant changes in attitudes within the medical profession and real reform in the medical education system. To build a new specialty for family oriented continuing comprehensive health care would require considerable coordinated efforts.

Besides charging the Council on Medical Education to make recommendations for change, the AMA asked for an "external examination of the state of medical education." This is not unlike what the AMA did in 1910 when it called upon the Carnegie Foundation and Abraham Flexner to critique the medical education system. The "Citizens Commission on The Graduate Education of Physicians," chaired by John S. Millis, PhD, was asked to make recommendations for "the improvement on graduate medical education."⁸ The report acknowledged the advances made in medicine and the benefits accrued to society through specialization, but also to the fragmentation of care. The report states that medical education beginning in medical school should promote a culture that values "continuous and comprehensive health care, which includes prevention, early diagnosis, acute care, rehabilitation, and supportive therapy." Although the development of specialization is an acknowledgement that no physician has sufficient knowledge and skills to competently care for all of the medical care needs of his or her patients, it does not refute the notion that the patient is a person. The root cause of a patient's ailment, therefore, whether stemming from the body or the soul, is interconnected and undivided. The commission also urges that medical educational policies should enhance the integration of medical science with the profession.⁹

The commission acknowledged the complexity of illness, and how psychosocial factors affect the behavior of illness and its importance in the patient's "continuing welfare." The commission advocated that medical schools make these principles as fundamental and a central theme in a

⁷ Meeting the Challenge of Family Practice. The Report of the Ad Hoc Committee on Education for Family Practice of the Council on Medical Education, (Chicago, American Medical Association, 1966), 1-3.

⁸ The Graduate Education of Physicians. The Report of the Citizens Commission of Graduate Medical Education of the American Medical Association. AMA, Chicago, August, 1966 p. vi.

⁹ The Graduate Education of the Physician, 30-33.

student's clinical education.¹⁰ The Citizens Commission also calls for a new kind of specialist who will fill the "vacuum" of the dwindling general practitioner. This specialist is defined as a "primary physician" who encompasses the qualities of a "personal" physician, who renders "continuous and comprehensive care of high quality, and is knowledgeable about organs, systems, and techniques." The primary physician, furthermore, recognizes the "patient as a person who lives in a complex social setting and knows that diagnosis or treatment of a part often overlooks major causative factors and therapeutic opportunities."¹¹

The Millis report has been revisited over the past 50 years, as the medical school curriculum and GME have tried to effect changes to improve the quality of the medical education system. The Ad Hoc Committee on Education for Family Practice and the Citizen Commission have done much to promote family medicine as a distinct discipline. With the publication of these two momentous reports, the generalist was about to become a specialist.

THE AMERICAN PUBLIC HEALTH SERVICE: FOLSOM REPORT

In addition to the Willard and Millis reports, The American Public Health Association and the National Health Council jointly established a special commission known as "The National Commission of Community Health Services" to further analyze the health care delivery crisis. The 33-person commission was chaired by Marion Folsom, who had been treasurer of Eastman Kodak and US Secretary of Health, Education, and Welfare. The commission's report in 1967, which came to be known as the Folsom Commission Report, added further impetus in support of the new specialty of family medicine. The 252-page report, compiled over 3 years between 1963 to 1966, focused on 14 areas of concern relating to housing, transportation, and health care in both urban and rural settings. It introduced the term "community of solution" to address the fragmentation of care in America.

It concluded that every person should have a personal physician who is able to provide continuous and comprehensive health care services to include

¹⁰ The Graduate Education of Physicians, 44.

¹¹ The Graduate Education of Physicians, 35.

health education and accident prevention as well as serving as coordinator of environmental health and mental health services.The "Community of Solution," concept stimulated federal funding of the National Health Service and Community Health Centers, which addressed the political and administrative structures, hindering access and delivery of health care in the community.¹² The Folsom report underscored the AMA's initiatives to move the generalist into the forefront.

¹² Kim S. Griswold, "Communities of Solution: The Folsom Report Revisited," *The Annals of Family Medicine*, 10, no. 3, (May/June 2012): 250-251.

CHAPTER X: THE ROLE OF GOVERNMENT IN HEALTH CARE

INVESTMENT IN MEDICAL RESEARCH

The background for much of the turmoil in graduate medical education and the move towards specialization had much to do with the various federal initiatives. For example, the enormous investment of the federal government in research resulted in a restructuring of the medical schools and the creation of teaching hospitals, where these new specialists were being trained. This had the effect of promoting specialization. Simultaneously the stature and the role of the general practitioner within the medical community diminished, especially in the hospital setting, where the privileges of the GP were altered to make room for the specialists. ¹

As medical science and technology advanced so did the costs, and the largest part of the cost was in hospital care. In 1929, Blue Cross got its start in Dallas, Texas with an agreement with Baylor University Hospital to provide 1500 school teachers hospital insurance.² The AMA warned that this health insurance precedent was an encroachment of medical practice by a third party, and that such plans would interfere with the doctor-patient relationship. They also warned that such voluntary private insurance programs would lead to government-driven compulsory insurance.³ Nonetheless, following World War II, the third-party payment system gained public favor in America. At first the insurance companies pretty much limited coverage to hospital care; in time, however, this was extended to include specialist physicians.

HILL-BURTON & HOSPITAL EXPANSION

Coincident with the publication of the 700-page Report of the Commission on Hospital Care in November 1946, the Hill-Burton Act of 1946 was passed by the US Congress. The Commission, led by the Chairman of the University of Pennsylvania, Thomas S. Gates LL.D., made 185 recommendations to improve hospital care. Dr. Gates stated: If this program fulfills the objectives it will become the blueprint for a voluntary organization and development of hospital services and facilities that will

¹ Starr, The Social Transformation of American Medicine, 367.

² Ibid, 295.

³ Ibid, 299.

offer all people everywhere within our country an excellence of hospital care never heretofore attained. The Hospital Survey and Construction Act, (the Hill Burton Act) in 1946, Congress passed a law that gave hospitals, nursing homes and other health facilities grants and loans for construction and modernization. In return, they agreed to provide a reasonable volume of services to persons unable to pay and to make their services available to all persons residing in the facility's area. The program stopped providing funds in 1997, but about 140 health care facilities nationwide are still obligated to provide free or reduced-cost care. The act did much to expand hospital capacity in the country with the goal of 4.5 beds per 1,000 people. To get it passed segregation in Southern states was codified in the construction of new facilities until segregation in hospitals was repealed in 1963.

Hill Burton sought to support rural and smaller hospitals caring for the poor in post-depression and World War II hospitals. For example, Lancaster General Hospital (LGH) accepted Hill Burton money with the passing of funds. and planned to expand its bed capacity to 650 beds. LGH added four floors to accommodate eight new major and four minor-operating rooms, 18 recovery beds, and two floors with 120 beds for a new maternity service. With these funds the hospital could add a new and separate power plant.⁴ With the rising cost of medical care, per-diem rates went from \$10.73 in 1950⁵ to an average of \$20.00 in 1959. Note that \$10.73 in 1950 would be a per diem of \$9,964 in 2018 dollars! LGH had rates of as low as \$14.00 per day for a ward bed (4 beds) to a high as-of \$24.00 per day for a private room in 1959.⁶

Increased federal funding for VA Hospitals allowed for many more VA Hospitals, purposefully built contiguous or nearby academic medical centers. VA Hospitals became part of the academic medical centers and actively participated in medical research and served as major teaching hospitals.

⁴ Board of Directors, Minutes, 61st Report, 1955, Lancaster General Hospital.

⁵ Ibid, 56th Report, 1950.

⁶ Ibid, 65th Report, 1959.

MEDICAL RESEARCH AND THE EMERGING MEDICAL SCIENTIST

By 1957 the massive investment of federal spending for medical research allowed for the expansion in the size of medical schools and the creation of new schools increasing the number of graduates by over 25%.⁷ Under the watchful eye of the American Medical Association, the time-honored doctor-patient relationship was not to be compromised by federal funding. Despite the government largesse to support the medical care system, the medical profession's sovereignty was preserved, as public aid to medicine was not to suggest public control.⁸

THE IMPACT OF MEDICARE / MEDICAID, 1965



Figure 28. Theodore Roosevelt, 1858-1919, 26th President of the United States. Ex-President Roosevelt advocated compulsory health insurance during his campaign as candidate of the Progressive Party in 1912. (Courtesy Library of Congress)

⁷ Duffy, *The Healers*, 268.

⁸ Starr, The Social Transformation of American Medicine, 351.

The discussion for compulsory national health insurance continued to take center stage in nearly every political debate in the early 1960's. The concept of compulsory health insurance began in 1912, as Theodore Roosevelt made this a principal platform issue of his Progressive Party. At the time, the AMA was in support of such liberal legislation including Federal health initiatives to promote maternal and child health, health education, pure food and drug laws and better-kept vital statistics. However, after Theodore Roosevelt, the AMA leadership shifted its support to the conservative viewpoint. Conservatives and the AMA opposed any encroachment on the fee system, which they asserted would compromised-the doctor-patient relationship.⁹ The next major push for compulsory national health insurance came in 1948 after Truman's surprising victory, when he proposed a comprehensive national health insurance program. There was an immediate response from the AMA with a full-scale public relations campaign, which effectively aborted the proposed legislation.¹⁰



Figure 29. Henry S. Truman, 1884-1972, 33rd President. President Truman actively advocated for universal health care. (Courtesy White House Collection)

¹⁰ Ibid, 305.

⁹ Duffy, *The Healers*, 302-303.

Despite the failed attempts on the part of the Truman administration, universal health coverage insurance remained a persistent issue for the Democrats.¹¹ Following Lyndon B. Johnson's 1964 landslide victory, the Democratic Congress passed the landmark Great Society Programs, including Medicare and Medicaid in 1965, which became effective on July 1, 1966.¹² This took place during the tenure of the AMA's president, James Z. Appel, M.D., a general practitioner and non-boarded general surgeon from Lancaster Pennsylvania.¹³



Figure 30. Lyndon B. Johnson, 1908-1973, 36th President, President Johnson's Great Society Program, which included Medicare and Medicaid, radically transformed the face of healthcare in America. (Courtesy Wikimedia Commons)

With the introduction of government sponsored and paid insurance, there were soon government agencies to oversee that hospitals were meeting minimum standards and that doctors followed Medicare and Medicaid

¹¹ Jonathan Oberlander, "The Virtues and Vices of Single-Payer Health Care," *New England Journal of Medicine* 374, no. 15, (April 16, 2016): 1402.

¹² Starr, "The Social Transformation of American Medicine," .370.

¹³ Dr. James Z. Appel, "Ex-Head of the A.M.A. Led Medicare Fight," *New York Times*, September 2, 1981.

regulations. Nurses and physician committees to monitor care played a bigger role in hospital governance, and soon nurse managers and physicians were employed to oversee these new federal requirements.

Meanwhile the private third-party insurance system grew, and with the growth of Lyndon B. Johnson's Medicare and Medicaid, the vast majority of Americans had access to health care. Now physicians were guaranteed payment, although that payment was not equivalent to their charges.¹⁴

FEDERAL LEGISLATION SPURS GROWTH

The Medicare program had a profound impact on graduate medical education (GME). Although it took additional legislation, the Medicare Program made it possible for graduate medical education to be added as a "pass-through" expense of teaching hospitals for costs of training residents. This was a powerful incentive for hospitals to add residency slots and create new residency programs. The initial costs for GME paid by Medicare started at \$70 million, but by 2002, with rising costs and expansion of residencies the cost to Medicare at \$7.8 billion and Medicaid at \$2 billion reaching over \$9.8 billion. Additional funding support comes from the Department of Defense, the Veterans Administration, and private payers.¹⁵

¹⁴ Starr, *The Social Transformation of American Medicine*, 334.

¹⁵ Eugene C. Rich, M.D., Mark Liebow, M.D., Malathi Srinivasan, M.D., David Parish, M.D., James O. Wolliscroft, M.D., Oliver Fein, M.D., Robert Biaser, "Medicare Financing of Graduate Medical Education," *Journal of General Internal Medicine*, 17, issue 4, (April 30, 2002): 243.

CHAPTER XI: GENERAL PRACTICE BECOMES A SPECIALTY

NICHOLAS PISACANO, M.D.



Figure 31. Nicholas Pisacano, M.D. (1924-1990), founding executive director of the American Board of Family Practice (Courtesy Center for the History of Family Medicine).

The creation of a certifying board in family practice was influenced to a significant degree by Dr. Nicholas Pisacano. He was a 1951 graduate of Hahnemann College of Medicine and a general practitioner in Philadelphia for seven years. Dr. Pisacano worked within medical politics to rally support for an independent certifying board for family physicians. In 1962 he took a position at the University of Kentucky in Lexington to teach in the allied sciences and in the medical school. He continued his argument that to make family practice into a new respected academic discipline with its own set of unique requirements. He spent an enormous amount of time and effort to achieve recognition of family practice as one of the major specialties with its own independent board on par with any other specialty. What was going to

make family practice stand out among the other specialties was the requirement for periodic recertification.¹ In the meantime, the creation of a separate board was resisted by the AAGP.²

There were others also calling for board certification status of the generalists. In 1962, one notable was Dr. Charles McArthur of Olympia, Washington who along with Dr. Thomas Rardin of Ohio pushed the American Academy of General Practice to convince the AMA Council on Medical Education that a board should be established to certify general practitioners as specialists. These efforts did not go very far. There were others outside the AAGP who supported the idea that there be an independent board for family practice. Two of the strongest voices were Dr. Arthur Nelson, Chair of Pediatrics at Temple University School of Medicine and Dr. Ward Darley, the president of the ASSociation of the AAMC to support the endeavor of an independent board. Darley and Nelson joined Pisacano's founding group, which in 1966 applied to the AMA's Liaison Committee for Specialty Boards for the establishment of a new board of family practice. ³

The Liaison Committee for Specialty Boards (LCSB) deferred action for another year, as it was unclear if this was to be an independent board or whether this new specialty would be certified by the American Board of Internal Medicine or the AAGP. Further delay occurred as the LCSB needed further clarity of the skill set that was to be required of the family physician, The LCSB required definition whether the new board would have representation from other specialty boards addressing the comprehensive health care of all age groups.⁴

There was still strong opposition from the American College of Physicians (ACP) for this AAGP initiative , as they argued that primary care was "the

¹ Adams, American Board of Family Practice, 66.

² Ibid, 46.

³ Paul R. Young, "A Brief History of the American Board of Family Practice: The Second Annual Nicholas J. Pisacano, MD, Memorial Lecture," *JABFP: Journal of the American Board of Famiy Practice* 9, no. 2 (March-April 1996): 111.

⁴ Ibid, 110-111.

province of internal medicine and pediatrics," and there was no need for a primary care specialty.⁵ The Association of Professors of Medicine (APM) remained in opposition because family practice could not be framed as a specialty, as it was too broad in scope.⁶ There was even some waffling at first on the part of the American Academy of General Practice (AAGP), which planned to create its own examination in the summer of 1968 and provide "Fellowship" status to its members and preempt the notion of a board certification exam by an independent board.⁷

Finally, the various groups came together and reached consensus, and the Liaison Committee for Specialty Boards (LCSB), which disapproved the 1968 application,⁸ gave approval for America's twentieth primary specialty and approved the formation of the American Board of Family Practice (ABFP) on February 8, 1969.⁹ The final compromise included specialists from other specialty boards (internal medicine, surgery, obstetrics & gynecology, psychiatry and pediatrics) to sit as full voting members of the American Board of Family Practice.

In Lexington, Dr. Nicholas Pisacano developed and housed the first American Board of Family Practice as recognized by the Liaison Committee for Specialty Boards. He was the founding executive director of the ABFP and served in that capacity until his sudden death in 1990 at the age of 65. He worked with educational specialists to capture the requirements for a qualifying examination and recertification for board certified family physicians.

THE FAMILY HEALTH CARE PROGRAM

There were others, especially in the academic arena, who were attempting to address the declining role of the general practitioner. The Family Health Care Program at Children's Hospital of Boston and Harvard Medical School was founded in 1954, the brainchild of Dane Prough, M.D., a professor and child psychiatrist and Robert Haggerty, M.D., an Associate Professor of

⁷ Ibid, 47.

⁸ Ibid, 61.

⁹ Ibid, 59.

⁵ Adams, American Board of Family Practice, 48.

⁶ Ibid, 52.

Pediatrics at Harvard. They felt that children who were being cared for in the diverse subspecialty clinics of Boston's Children's Hospital could receive better care if family-focused.¹⁰ Concern arose about children with complex problems who saw many different specialists but no provider with a global view of the child's or family's progress. There was no unified medical record at this time. So, they created a team of health care professionals, that included the pediatrician, child psychiatrist, general internist, nurses, clerical support, a social worker, and a medical sociologist/anthropologist to study the entire family as a meaningful unit of care. They recruited fellows from the disciplines of pediatrics and internal medicine and created what today is similar to the so-called "patient-centered medical home." The Family Health Care Program was moved into a typical-looking doctor's office located at 33 Francis Street, just around the corner from Children's Hospital, across from the Harvard School of Public Health. Funds from the Robert Wood Johnson Foundation supported its creation and maintenance beyond Children's Hospital's support.



¹⁰ Robert J. Haggerty, M.D., interview by Kendig, James, September 9, 1998, transcript. Oral History Project, American Academy of Pediatrics, Elk Grove Village, Illinois, 1.

Figure. 32. Joel J. Albert, MD, 1930-2013. (Courtesy legacy.com)

In 1961, Joel Alpert, M.D. who had served as a Chief Resident at Children's, joined the faculty of the Family Health Care Program (FHCP) after his discharge from the U.S. Army. He became the FHCP director in 1965 after Dr. Haggerty left to become chair of Pediatrics at the University of Rochester. The FHCP program was able to demonstrate that the family plays a significant role when there is a health disturbance in one of its members, and that "family-focused care" benefits not only the patient in treatment and prevention, but reveals benefit all its members.¹¹

Dr. Alpert also thought that the Family Health Care Program (FHCP) had a unique opportunity to recruit qualified general practitioners, besides general internists and pediatricians, to help prepare them as future academic leaders in primary care. Over time he considered these fellows from general practice as future academics in the proposed new specialty of family medicine. ¹²



Figure 33. Lynn Carmichael, M.D., (1928-2009), first chairperson of Family Medicine program at the University of Miami School of Medicine and co-founder and first president of the Society of Teachers of Family Medicine (STFM). (Courtesy Center for the History of Family Medicine)

¹¹ Joel J. Alpert, M.D., John Kosa, PhD, Robert Haggerty, Robert, M.D., "A Month of Illness and Health Care Among Low Income Families," *Public Health Reports*, 82, no. 8 (August 1967): 705-713.

¹² Joel Alpert, M.D., interview by Author, Boston, Massachusetts, January 28, 1966.

In 1964, Lynn Carmichael, M.D., a general practitioner from Miami, Florida, was among the first practicing GP's to join the Family Health Care Program as a fellow. During his fellowship, Dr. Carmichael wrote an academic article, which was published in 1965 in the JAMA on "Teaching Family Medicine." Lynn Carmichael's experience in the FHCP served as a trailblazer for future fellows with a general practice background. Following the completion of his fellowship, Carmichael with his new academic credentials went back to Miami to become the Chair of a newly created Department of Family Medicine at the University of Miami Medical School.¹³ The University of Miami proved an innovative family medicine department that provides care to the indigent of Miami-Dade County while training large numbers of medical students and residents on the power of family medicine on its community. Many future family medicine academic leaders were trained under Dr. Carmichael at the University of Miami.



¹³ William B. Ventres, John J. Frey, "Voices from Family Medicine: Lynn Carmichael," *Family Medicine*, 24, no. 1, (January 1992) 55.

Figure 34. Thomas L. Leaman, MD, (1923-2016), founder of the Department of Family and Community Medicine at Hershey Medical College of Penn State University, (Courtesy pennstatemedicine.org)

Among other Harvard FHCP fellows from the general practice community were Thomas L Leaman MD. and Hiram Wiest MD, of Lancaster, Pennsylvania. Dr. Leaman served in World War II and Korea and started a general practice in Hershey Pennsylvania in 1949 between wars. He practiced there until his Harvard experience in 1966. He became the Founder, Professor, and Chair of the Department of Family and Community Medicine at the Penn State Hershey Medical Center from 1967 to 1987. Dr. Wiest, a 1945 graduate of the University of Pennsylvania School of Medicine, shared a family practice in Hershey with Dr. Leaman as they took time to do academic training to become faculty at the new Penn State University School of Medicine medical school in Hershey, Pennsylvania. They took turns leaving town to trains while one supported both their families in the family practice in Hershey. Hiram Wiest became Dr. Leaman's first academic appointment in the Department of Family and Community Medicine.

As a teen growing up in Hershey, Dennis Gingrich M.D., Professor of Family Medicine at Penn State Hershey College of Medicine in 2018 recalled:

"I remember the excitement when the College of Medicine and hospital was founded in our little town, and I saw the seven-story building rising from the cornfields. Dr. Leaman told his patients that he was taking a job as the new chair of a Department of Family Medicine and that we would be the first patients of the new school. Little did I realize as a teenager that I was participating in the historic event of seeing my doctor become the first chair of a United States academic family medicine department, or that our family was part of the first population of patients of an academic family medicine practice. I still find it ironic that my experience of the transition of general practice to family medicine was as a patient."

THE SOCIETY OF TEACHERS OF FAMILY MEDICINE: OCT 27, 1967

With the publication of the 1966 AMA's Willard Report, Canada's Dr. Ian McWhinney of the University of Western Ontario and Dr. Gayle Stephens of Wichita, Kansas provided further guidance as to the academic content of family medicine. The practice of family medicine would include the clinical evaluation of people who seek medical attention, how to use diagnostic tests, the natural history of disease, health maintenance care, the importance of human growth and development, and the social and moral dimensions and their influence on disease.¹⁴

Dr. Lynn Carmichael wrote and articulated well the principles that guided the specialty in those early years, as did so many of those early leaders with their eloquence and inspirationally messages. Dr. Carmichael considered family medicine as a "reform movement." He emphasized that "family physicians treated people, not illness" and it stands as the fundamental concept in caring for patients, built on a long-lasting relationship and trust. In 1966, the AMA's C. H. William Ruhe, M.D., Assistant Secretary of the Council on Medical Education called upon Dr. Carmichael and Lee Blanchard, M.D. of California to travel throughout the country to promote the proposed new specialty. Dr. Ruhe, a former Associate Dean at the University of Pittsburgh School of Medicine gave strong support from his position at the AMA for family practice to succeed as a specialty. The specialty needed to have 15 residencies training medical school graduates to be family physicians to be recognized as an educational specialty in medicine by the Liaison Committee on GME. Drs. Carmichael and Blanchard rallied existing general practice internships and residencies to revise themselves to a new level of training. They succeeded by December 1968 to identify those 15 residency programs and the AMA granted them the authority to train family physicians in the new specialty.

During this time of national survey, Drs. Carmichael wrote a letter to Dr. Gayle Stephens asking if he'd be interested in helping to form an "organization of physicians engaged in teaching family medicine in the medical schools in order to promulgate family medicine as a medical discipline." This initiative created the Society of Teachers of Family Medicine (STFM) to prepare the leaders and teachers for the specialty. and In 1967 Lynn Carmichael became STFM's first president.¹⁵ Lynn

¹⁴ Geyman, The Modern Family Doctor and Changing Medical Practice, 23-24.

¹⁵ Geyman, Family Practice, Foundation of Changing Health Care, 331.

Carmichael and Lee Blanchard, along with 46 leaders of family medicine education, including Drs. G. Gayle Stephens, (then director of the Family Practice Residency Program at Wesley Hospital in Wichita, Kansas), Eugene Farley of Rochester New York, Tom Stern of Santa Monica, California, Fitzhugh Mayo of Richmond, Virginia, Hiram Curry of Charleston, South Carolina, David Satcher of Los Angeles, California, and John Geyman from Seattle, Washington, and-Marian Bishop, PhD, of Birmingham, Alabama (Gayle Stephens MD's Public Health associate) nurtured the soul of the organization. Dr. Lynn Carmichael administered the early affairs of STFM in Miami, until it moved its location to Kansas City in 1972, and moved into quarters subsidized and rented by the AAFP. STFM received considerable support from the American Academy of Family Physicians in those early days, Dr. Thomas Johnson, Director of the Division of Education of the American Academy of Family Physicians, assumed the role of Administrative Officer in September 1971 and passed the role to Robert Graham, M.D., upon his retirement in June 1972.

ROBERT GRAHAM, MD



Figure 35. Robert Graham, M.D. Dr. Graham has held a number of leadership responsibilities in the Federal Health Sector, including the position of Administrator of the Health Resources and Services Administration (HRSA) (1981-1985), as well as senior positions at the Agency for Healthcare Research and Quality (2001-2004), the Health Resources Administration (1976-1979), and the Health Services and Mental Health Administration (1970-1973). From 1985 until

his retirement in 2000, Dr. Graham also served as Executive Vice President of the AAFP. (Courtesy Center for History of Family Medicine)

One of the key framers of the Society of Teachers of Family Medicine in its early years was, Robert Graham, M.D., a 1970 graduate of the University of Kansas School of Medicine. Meeting his service obligation (alternative to military service during the Vietnam War) at the time in the U.S. Public Health Service, he served a strategic role in shaping the specialty starting from his vantage point in Washington, D.C. His talents were quickly recognized, and he served in an administrative role in the Health Services and Mental Health Administration (1970-1973). Following completion of his obligation with the PHS in 1973, he returned to Kansas City to serve as Assistant Director of the Division of Education at the AAFP. It was also during this period he assumed the role of Administrative Officer of the STFM in 1973 with the retirement of Dr. Thomas Johnson .¹⁶

STFM 's current mission statement is: "Advancing family medicine to improve health through a community of teachers and scholars, and its stated vision is to become the indispensable academic home for every family medicine educator."¹⁷ STFM continues, as a leading academic organization in family medicine with its ongoing promotion of faculty development programs. STFM has grown into an organization made up of family physician educators, behavioral scientists, primary care physicians, psychiatrists, dieticians and diverse health care professionals from many disciplines. STFM participates in many academic societies, professional and government organizations with 20-30% of its members as non- family physicians, all supporting the education of family physicians. STFM continues to play a dominant role in shaping the discipline of family medicine.

By 1974, 75% of the nation's 114 medical schools had active programs in family medicine and there were 219 approved family practice residency

¹⁶ "Our History: About Robert Graham, M.D., Robert Graham Center for Policy Studies in Family Medicine and Primary Care. Accessed May 7, 2019, <u>https://www.graham</u>center.org/rgc/about/what-we-do/history.html.

¹⁷ Center for the History of Famiy Medicine. "Significant Events in the History of the Society of Teachers of Family Medicine (STFM)." AAFP Foundation, accessed 7 May 2019, https://www.aafpfoundation.org/content/dam/foundation/documents/who-weare/cfhm/factsonfile/STFMChronology.pdf.
programs, based mostly in community hospitals affiliated with medical schools.¹⁸

The founders of this new specialty, family practice, had argued successfully that the generalist has a unique set of cognitive and psychomotor skills that justified the creation of its own certifying board. Specialty status would also elevate the prestige of the generalist and allow family practice to take its rightful place within the medical community. Medical school graduates wishing to become specialists in family practice would be required to complete a three- year residency before sitting for the certification exam. With the intention of maintaining current knowledge, the ABFP was the first certifying medical board to require recertification including specific hours and content in continuing medical education and a recertification examination every seven years.¹⁹ The ABFP declared there would be no grandfather clause to certify oneself. The initial candidates could qualify for the ABFM certifying exam by meeting interim requirements set to expire on January 1, 1978 These allowed various paths to be considered as preparation for the formal exam. These paths required having completed an approved rotating internship or a year or more of a nonrotating internship; or residency in general practice, internal medicine, or pediatrics; or two years in the medical corps, and additionally an active AAFP membership and fulfillment of the three-year AMA continuing medical education requirements for the Physicians Recognition Award.²⁰

Besides the ABFP, those stakeholders shaping the future of family practice included the American Academy of General Practice (AAGP), now American Academy of Family Physicians in 1971 (AAFP), the American Medical Association (AMA), the American Board of Medical Specialties (ABMS), Association of American Medical Colleges (AAMC), and in time, the state licensing boards, third party payment systems, and the many federal entities, especially Medicare and Medicaid. The Medicare program helped to support graduate medical education by providing funds to cover the costs of both direct and indirect expenditures. State governments have also played a

¹⁸ John P Geyman, *The Modern Family Doctor and Changing Medical Practice*, (New York: Meredith Corporation, 1971), 6-7.

¹⁹ Adams, American Board of Family Practice, 91.

²⁰ Ibid, 77-78.

role in covering the cost of family practice education to enhance the supply of primary care physicians in their underserved areas. Some states provided medical school scholarships or subsidies for newly graduated family practice residents to enter practice in their underserved state.

What made this specialty different from any other was that much of the residents' training and education was to take place outside the traditional hospital setting. The resident would be expected to spend time with traditional specialists in their office practices to enhance their diagnostic and therapeutic skills in the relevant medical, pediatric and surgical subspecialties. Simultaneously the resident would be providing personal, coordinated, continuous and comprehensive health care to their patients in what was referred to as the model family practice unit or family practice center.

At the end of their three years of education and training they would be eligible to take an examination developed by the American Board of Family Practice . Once certified they would be considered diplomats of the American Board of Family Practice, now the American Board of Family Medicine. Despite serious objection from a number of state and local chapters of the AAGP, the ABFP was also to require recertification every seven years. This made family practice unique, as no other specialty required recertification in the 1970's.²¹ It remained the only specialty board to require its diplomates to be recertified for many years; now most specialty boards require recertification as part of a national imitative for quality improvement.

²¹ Adams, American Board of Family Practice, 67.



Figure 36. G. Gayle Stephens, (1929-2014). A former STFM President, Dr. Stephens was one of the early leaders of the specialty, having served as the founding director of one of the nation's first Family Medicine residency programs in Wichita, Kansas. Later, "Dr. Stephens was also instrumental in the formation of a Family Medicine Residency Program at the University of Alabama in Huntsville. A prolific writer and recognized scholar in the specialty, Dr. Stephens' 1982 book *The Intellectual Basis of Family Practice* has been hailed by many as one of the most influential works on Family Medicine every written." (Courtesy Center for the History of Family Medicine)

It was Dr. G. Gayle Stephens who articulated the philosophy of family medicine in his book, "The Intellectual Basis of Family Medicine."²² Ian McWhinney's foreword in the book gives tribute to Dr. Stephens as one of the foremost intellects of our specialty. The book underscores the historical and social events of the time that gave credence to the development of family medicine as a specialty. The fundamental basis for family medicine is inherent in a loving doctor-patient relationship. It is based on the concept of physician as servant and how the patient and his or her doctor are connected

²² G. Gayle Stephens, *The Intellectual Basis of Family Medicine*, (Tucson, AZ: Winter Publishing Company, 1982).

at a spiritual level, which connotes life-giving energy based on hope and trust.

THE FIRST (PILOT) FAMILY PRACTICE RESIDENCY PROGRAMS

Harvard's Family Health Care Program started in 1954 was one of the original fifteen accredited family practice residencies in 1969. It survived until 1976. There were fourteen other original pilot programs and most persist, and are still accredited today 50 years later. The fifteen pilot programs and their directors at the time were as follows²³:

- 1. University of California-Irvine in Los Angeles, CA, Robert Combs, MD.
- 2. General Hospital Ventura County, Ventura, CA, J.A. Daly, MD
- University of Miami School of Medicine, Miami, FA, Lynn
 P. Carmichael, MD
- 4. Wesley Medical Center, Wichita, Kansas, G. Gayle Stephens, MD
- 5. University of Maryland School of Medicine, Baltimore, MD, William L. Stewart, MD
- 6. University of Minnesota School of Medicine, Minneapolis, Minnesota, Benjamin Fuller, MD
- 7. Research Hospital & Medical Center, Kansas City, Missouri, Paul R. Young, MD
- 8. West Jersey Hospital, Camden, New Jersey, J.C. Brame, MD
- 9. State University of New York at Buffalo School of Medicine, Buffalo, New York, Douglas M. Surgenor, PhD
- 10. The Family Health Care Program, Harvard University, Boston, Mass., Joel Alpert, MD
- 11. University of Rochester School of Medicine, Rochester, New York, Eugene S. Farley, MD
- 12. Medical College of Ohio, Toledo, Ohio, Robert Page, MD
- 13. University of Oklahoma School of Medicine, Oklahoma City, Oklahoma, Roger I. Lienke, MD

²³ Center fo the History of Family Medicine, "The First Fifteen Family Medicine Residency Programs." AAFP Foundation, accessed 7 May 2019.

https://www.aafpfoundation.org/content/dam/foundation/documents/who-weare/cfhm/factsonfile/First15FMRes/pdf.

- 14. University of Wisconsin School of Medicine, Marc F. Hansen, MD
- 15. York Hospital, Robert Evans, MD

THE GROWTH OF FAMILY MEDICINE & PRIMARY CARE Most of the original family practice residency programs were begun in community hospitals with already established general practice residency programs. The structure of the educational experience would be changed to become a family practice residency. The general practice residencies had heavily emphasized surgery and procedural skills including obstetrics. The new specialty of family practice required a full-time director and an office practice to be designated as a "model family practice center" for the residents to see their own patients. The model family practice center served as the primary teaching site for the residents. Gone was the hospital sponsored clinic manned by volunteer local physicians or paid house doctors to care for the indigent. Each sponsoring institution /hospital would submit a formal application to the Residency Review Committee (RRC) for Family Practice, (now Family Medicine). The RRC/FP is one of the many committees of specialty societies, represented within the Accreditation Council on Graduate Medical Education (ACGME), with the authority to determine whether the applicant residency program can meet its core requirements or "essentials." All newly approved residency programs were given provisional status, which then underwent re-evaluation in three years. That three-year cycle changed in 2006 to a robust electronic monitoring of essential standards coupled with less-frequent formal evaluations.

The specialty of family medicine has thrived in the past 50 years, growing into the second largest primary specialty with nearly 500 residency programs in the country and producing more than 3,200 new family physicians each year.

It is anticipated that by the year 2020 America's population will exceed 350 million, and approximately 141 allopathic medical and 31 osteopathic schools, will be producing more than 20,000 graduates yearly.²⁴ It is anticipated that at least 10% of these graduates will be entering the specialty of family medicine, and other 20% will become general internists and pediatricians. It is uncertain whether the increasing numbers of nurse

²⁴ "List of Medical Schools in the United States," Wikipedia, accessed 7 May 2019, https://en.wikipedia.org/wiki/List_of_medical_schools_in_the_United_States.

practitioners and physician assistants entering the primary care medical manpower pool will meet the demand as more of these new health practitioners are also entering the subspecialties of medicine. In 2014, these new health practitioners already exceeded the number of medical school graduates with more than 18,400 nurse practitioners and more than 7,500 physician assistants. More than 50% entered primary care practice.²⁵

²⁵ Edward Salsberg, "The Nurse Practitioner, Physician Assistant and Pharmacist Pipelines: Continues Growth," *Health Affairs Blog*, May 26, 2015, accessed May 26, 2019, https://www.healthaffairs.org/do/10.1377/hblog201505.047896/full/.

PART 2: FAMILY MEDICINE AND THE FUTURE

CHAPTER XII: CHALLENGES AHEAD FOR FAMILY MEDICINE

THE FAMILY DOCTOR AND PRIMARY CARE:

Concepts of primary care originated in the United Kingdom and date back to the 1920s and basically referred to the care of patients with common problems. By 1956, the Dutch College of Family Medicine organized a conference in the Netherlands to define the famiy physician as one who accepts "the responsibility for a continuous, integrated and personal care for the health of individuals and families, which they are accountable for." This includes prevention of disease and a cure for a patient with a health care disturbance whenever possible. At this conference 12 tasks for the family doctor were enumerated to include: skills in history taking and communication, primary care, somatic, psychological and ecological examination, treating what is treatable, task delegation to consultants, prevention, and advocating health promotion.¹

THE PRIMARY PHYSICIAN

John S. Millis, PhD, declared in the 1966 AMA Report of the Citizens Commission on Graduate Medical Education, that there needs to be a "primary physician" who will take responsibility for the coordination and continuous, comprehensive care of the patient.²

The Millis Commission, made up of citizens outside the mainstream of medicine, is only the second time in the history of the AMA that an outside group was called on to conduct an external examination of the state of medical education in America. The Flexner Report of 1910, which had a profound effect on medical education at the student level, helped to make America's medical schools rival the best in Europe.³ The Millis Commission focused on what happens to the student following graduation from medical

¹ Jan De Maeseneer, *Family Medicine and Primary Care*, (Leuven, Belgium: Lanoo Campus Publishers, 2017), 17-18.

² The Graduate Education of Physicians, 37.

³ Ibid, v.

school. The advent of specialization was a consequence of the advances made in medical science and the increase in complexity of medical practice which had the unintended consequence of the demise of the general practitioner.

"THE SECRET IN THE CARE OF THE PATIENT"

The rapid advances in medical science, especially during the late 19th century into the 20th century with the management of infectious disease and the resulting effect in surgery, had a dramatic alteration in both morbidity and mortality and underscored the disease model approach in medical education and the promotion of the specialties. The importance of caring for the patient as a person was never lost sight of, however. There were constant reminders throughout history, which made caring for the person in the patient a fundamental concept. This was eloquently expressed by Dr. Francis W. Peabody, in his famous essay, entitled "The Care of the Patient," given as a graduating speech to the 1927 class of Harvard medical students, when he said, "for the secret in the care of the patient is in caring for the patient."⁴ In 1977, Dr. George L. Engel Professor of Psychiatry, Rochester School of Medicine in a 1977 article, proposed in an article that the medical model with its emphasis on disease management be expanded to encompass a biopsychosocial model. This is a holistic approach, which encompasses the complex interaction of the genetic, biochemical and physiologic elements with the patient's personality and psychological nature, and how cultural, familial, and socioeconomic factors, combine to affect the behavior of illness.⁵

FROM THE MEDICAL TO THE BIOPSYCHOSOCIAL TO THE BIOPSYCHOSOCIALSPIRITUAL MODEL

I would like to add the spiritual dimension and suggest the biopsychosocial spiritual model. Spiritual in this context means life-giving energy. When the patient feels the trust and embrace of his or her physician or care-giver, it connects the patient to the other. It conveys hope, love and charity. This is

⁴ Francis W. Peabody, "The Care of the Patient," *JAMA: The Journal of the American Medical Association*, 88, no. 12 (March 19, 1927): 877-882.

⁵ George Engel, The Need for a New Medical Model: A Challenge for Biomedicine," *Science*, 196, no. 4286, (April, 1977): 129-136.

what I think Peabody meant by the "secret." Trust, hope and love between the patient and his or her doctor improves outcomes. I am not aware of any good studies to demonstrate this, but an internet search did find one metaanalysis study with positive outcomes.⁶ The authors concluded that a holistic approach to include social and emotional issues that impact on the patient's life enhances the quality of the care experience.⁷



Figure 37. Ian Renwick McWhinney, M.D. (1926-2012). Dr. McWhinney founded the Graduate Studies Program in Family Medicine at The University of Western Ontario in London, Ontario., and is considered to be one of the founders of modern Family Medicine in Canada. (Courtesy Center for the History of Family Medicine)

Long regarded as one of the pioneers in shaping the specialty of family medicine, Ian R. McWhinney's views were guided by his search for answers on how to help patients who challenged him, especially among those with discomforting vagaries that worried his patients. He began writing a journal and keeping case studies and finally decided to write a book, "The Early

⁶ J. M. Kelley, et al., "The Influence of the Patient-Clinician Relationship on Healthcare Outcomes: A Systematic Review and Meta-Analysis of Randomized Controlled Trials," *Plos One* 9, no. 4 (2014) e94207, doi:10.1371/journal. Pone 0094207.

⁷ M.A. Stewart, I.R. McWhinney, C.W. Buck, "The Doctor/Patient Relationship and its Effect Upon Outcome," *Journal of the Royal College of General Practitioners*, 29, no. 199, (1979), 77-82.

Signs of Illness, published in 1964."⁸ This caused a stir and was noticed by many as a shining intellect in the growing debates regarding the development of the new discipline that came to be called family medicine. In 1968, he was offered and accepted the chair of the new department of family medicine at Western Ontario in Canada. McWhinney became a voice to be reckoned with. He left an indelible mark, not only in North America, but around the world, and continues to stimulate the ongoing debates that constitute the intellectual content of family medicine. It is not enough to think of our patients' problems within the traditional mind and body dualism paradigm. I agree with his example that we have not come to grips with such difficult medical problems as chronic pain. He suggests that a different paradigm is needed because the current approach is not working. He rightfully concludes that we don't fully comprehend "the cause," which takes us back to "The Early Signs of Illness."⁹

THE DISTINGUISHED DOZEN: TWELVE BOOKS THAT SHAPED THE FACE OF FAMILY MEDICINE

⁸ John J. Frey and William B. Ventres, "Voices from Family Medicine: Ian McWhinney," *Family Medicine*, 24, no. 4, 317.

⁹ Frey and Ventres, "Voices from Family medicine: Ian McWhinney," 320.



Figure 38. John P. Geyman, M.D., Professor Emeritus, University of Washington, and noted family medicine educator, leader, prolific writer and provocateur. (Courtesy Center for the History of Family Medicine)

I would like to underscore the many who have greatly influenced the specialty of family medicine through their writings. Among the most prolific writers was John P. Geyman, MD, who was the first Chair of Family Medicine at the University of Washington. Fortunately, in 2010, The American Academy of Family Foundation surveyed a distinguished panel of experts that included leaders, educators, authors and practicing physicians across the specialty, and published what is described as "The Distinguished Dozen: Twelve Books That Shaped the Face of Family Medicine:"¹⁰

1. "Ferment in Medicine" by Richard M. Magraw, MD (1966)

¹⁰ Center for the History of Family Medicine, The Distinguished Dozen. Twelve Books that Shaped the Face of Family Medicine." AAFP Foundation, accessed Jan 28, 2019, https://www.aafpfoundation.org/foundation/chfm/collections/exhibits/distinguisheddozen.html.

- 2. "Textbook of Family Practice" by Robert E. Rakel, MD (1973)
- 3. "Family Medicine: Principles and Practice" by Robert B. Taylor, MD (Six Editions 1978-2003)
- 4. "Archives of Family Practice" by John P. Geyman, MD (1980-1982)
- 5. "An Introduction to Family Medicine" by Ian R. McWhinney, OC, MD, FRCGP, FCFP, FRCP (1981)
- 6. "The Intellectual Basis of Family Practice" by G. Gayle Stephens, MD (1982)
- 7. "The Doctor Stories" by William Carlos Williams, MD (1984)
- 8. "Heirs of General Practice," by John McPhee, (1984)
- 9. 'The Physician as Teacher' by Neal A. Whitman, EdD, and Thomas L. Schwenk, MD (1987)
- 10."Textbook of Family Medicine" by Ian R. McWhinney, OC, MD, FRCGP, FCFP, FRCP (1989)
- 11."A Measure of My Days, The Journal of a Country Doctor" by David Loxterkamp, MD (1997)
- 12. "Keystone III, The Role of Family Practice in a Changing Health care Environment: A Dialogue" (2001)



Figure 39. Joseph E. Scherger, M.D., MPH, is Vice President for Primary Care and the Marie E. Pinnizzotto, MD Chair of Academic Affairs at Eisenhower Medicine Center in Rancho Mirage, California. Dr. Scherger also serves as Clinical Professor of Family Medicine at the Keck School of Medicine at the University of Southern California (USC). He is the author of "Wheat Belly" and "Lean and Fit, A Doctor's Journey to Healthy Nutrition and Greater Wellness." (Courtesy Dr. Scherger)

Joseph E. Scherger, M.D., MPH, is another one of the many great educators, who I have admired from the first days when I met him as a student and later

as a resident and family medicine faculty and educator. As predicted, he has assumed many leadership roles throughout his career, as a practitioner, an academician and a writer. His most recent position is Vice President for Primary Care and the Marie E. Pennizzotto, MD Chair of Academic affairs at Eisenhower Medicine Center in Rancho Mirage, California, and also serves as Clinical Professor of Family Medicine at Keck School of Medicine at the University of Southern California. Dr. Scherger was one of those who was asked to offer his opinion regarding what books had a major influence on his appreciation of our discipline. He held up John P. Geyman, M.D., then editor of the *Archives of Family Practice*, for his collection of important articles that shaped the discipline of family medicine. "Being able to read the writings from the mid-1960s meant a lot to my understanding of the specialty and its legacy."¹¹ He considered Dr. Geyman as the scribe of the new specialty of family medicine and G. Gayle Stephens, M.D. as the philosopher of our discipline. I would concur.

THE FAMILY PHYSICIAN REDEFINED

In 1969, the American Academy of General Practice (AAGP) embraced general practice as a specialty and designated the primary physician as the family physician: "The physician of first contact... who evaluates the patient's total health care needs, develops and accepts responsibility for the patient's comprehensive and continuous care within the context of their environment – the family or comparable social unit and the community, and acts as coordinator of the patient's health services including the use of consultants."¹² The words, continuous and comprehensive are fundamental.

The definition has remained unchanged. In April 2019, the official definition of family medicine, as spelled out by the board of directors of the American Academy of Family Physicians (AAFP), is as follows: *"Family medicine is the medical specialty which provides continuing, comprehensive health care for the individual and family. It is a specialty in breadth that integrates the biological, clinical and behavioral sciences. The scope of family medicine encompasses all ages, all genders, each organ system and every disease entity." (1984) (2019 April BOD).¹³*

¹¹ Center for the History of Family Medicine, "The Distinguished Dozen."

¹² Geyman, The Modern Family Doctor and Changing Medical Practice, 20.

¹³ Aafp.org, accessed July 27, 2019.



Figure 40. Norman B. Kahn, Jr, MD, former AAFP Executive Vice-President of Academic Affairs and now retired past Executive Vice President of the Council of Medical Specialty Societies (CMSS) is a prominent family physician educator and leader. (Courtesy Center for the History of Family Medicine)

Dr. Norman B. Kahn, Jr., as Vice President of Academic Affairs of the American Academy of Family Physicians, played a key role in 2002 in helping to bring seven national medical organizations together to renew the discipline of family medicine. They reviewed its challenges, rediscovered its core values and proposed a new model of practice. The group proposed the patient-centered medical home, utilizing a team approach and integrating new Information systems technology and advocated that "every American have health care coverage for basic services and protection against extraordinary health care costs."¹⁴

A TEAM APPORACH AND THE ELECTRONIC MEDICAL RECORD IN PATIENT CARE

The "Future of Family Medicine" report proposed a "New Model" of practice based on a team concept in providing care, and the belief that

¹⁴ Norman B. Kahn Jr, et al, "The Future of Family Medicine: A Collaborative Project of the Family Medicine Community," Annals of Family Medicine, 2, no. suppl. 1 (March 1, 2004): S3-S32.

everyone should have a 'personal medical home "through which all individuals, regardless of age, sex, race, or socioeconomic status, can receive their acute, chronic, and preventive medical service." The patient would maintain an ongoing relationship with a family physician in their medical home, and thus "be assured of care that is not only accessible but also accountable, comprehensive, integrated, patient-centered, safe, scientifically valid, and satisfying to both patients and their physicians."¹⁵

Although the nuances of language used to define the family physician may have changed somewhat, the essence of what a generalist is, has not. The notion of a primary physician is inherent in the need for a personal physician, who maintains a continuous relationship with the patient, especially in the context of a social unit, most commonly, the family. Managing acute illness or injury, preventing diseases whenever possible and caring for chronic disorders or illness are inherent in primary care.

THE PATIENT-CENTERED MEDICAL HOME (PCMH)

Changing concepts in health care have continuously evolved. People like Ivan Illich in his book Medical Nemesis: The Expropriation of Health blamed medical interventions and therapies as causing side effects from the medicalization of life, and that people were not being adequately empowered to make decisions regarding their health care.¹⁶ Others such as Vinayak K. Prasad, MD, a practicing hematologist-oncologist at the National Cancer Institute and Adam S. Cifu, MD, a practicing general internist and medical educator at the University of Chicago, argue that despite the wonderful medical advances, there are multiple examples of ineffective and harmful medical practices that prove to be ineffective or even harmful."¹⁷ One of the most significant developments in providing more effective primary care is the empowerment of patients to take more control in the decision making regarding their health care. This is fundamental in the new "Patient Centered Medical Home (PCMH)" model. With its team approach and electronic medical record (EMR), this model also allows the patient to

¹⁵ Ibid, S14.

¹⁶ Maeseneer, Family Medicine and Primary Care, 23.

¹⁷ Vinayak K. Prassad and Adam S. Cifu, *Ending Medical Reversal*, (Baltimore: Johns Hopkins University Press, 2015): 196.

access his or her own laboratory, radiology and consultation report, with greater opportunity for inquiry and participation in his or her own care.¹⁸

The AAFP defined more clearly the tenets of the patient centered medical home in 2017. The American Academy of Family Physicians defines a medical home as one that is based on the Joint Principles of the Patient-Centered Medical Home (PCMH) and the five key functions of the Comprehensive Primary Care Plus (CPC+) initiative. These key functions are:

1. Access and Continuity

Medical homes optimize continuity and timely, 24/7 first contact access care supported by the medical record. Practices track continuity of care by physician or panel.

2. Planned Care and Population Health

Medical homes proactively assess their patients to determine their needs and provide appropriate and timely chronic and preventive care, including medication management and review. Physicians develop a personalized plan of care for high-risk patients and use team-based approaches to meet patient needs efficiently.

3. Care Management

Medical homes empanel and risk stratify their whole practice population and implement care management for patients with high needs. Care management has benefits for all patients, but patients with serious or multiple medical conditions benefit more significantly due to their needs for extra support to ensure they are getting the medical care and/or medications they need.

4. Patient and Caregiver Engagement

Medical homes engage patients and their families in the decision-making process in all aspects of their care. Such practices also integrate into their usual care both culturally competent self-management support and the use of decision aids for preference sensitive conditions.

5. Comprehensiveness and Coordination As primary care is the first point of contact for many patients, it becomes

¹⁸ Kahn et al, "The Future of Family Medicine:" S16.

the center of patients' experiences with health care. As a result, primary care is best positioned to coordinate care across settings and among physicians in most cases. Primary care medical homes work closely with patients' other health care providers to coordinate and manage care transitions, referrals, and information exchange.

The functions of a medical home depend on the support of enhanced and prospective accountable payments, continuous quality improvement driven by data, and optimal use of health information technology.¹⁹

CHAPTER XIII THE INSTITUTE OF MEDICINE: A TIME FOR MAJOR CHANGE AND THE AFFORDABLE CARE ACT (OBAMACARE)

ITS SIX BASIC AIMS

In a 2001 Institute of Medicine (IOM) report, referred to as "Crossing the Quality Chasm: A New Health System for the 21st Century," the IOM declared that the current American health care system is so flawed that it cannot be corrected unless it is completely overhauled. As part of that overhaul the report outlined six "basic-aims," that the American health care system should be:

- 1. Safe: avoiding harm...
- 2. Effective: services should be based on sound scientific knowledge and should help those who can benefit and refrain from providing services to those who cannot.
- 3. Efficient: avoiding waste
- 4. Equitable: care that does not vary in quality for all patients
- 5. Patient centered: based on patient needs, preferences and values
- 6. Timely: no unnecessary waits and no harmful delays.¹

Fellowships and advanced degrees for physicians and health care executive in quality have arisen as result of these developments. The Malcolm Baldrige National Quality Award awarded by the President of the United States now has two categories for health care systems. Each hospital and

¹⁹ <u>https://www.aafp.org/practice-management/transformatino/cpc-plus.html</u> accessed July 27, 2019.

¹ Kahn et al, "The Future of Family Medicine," S6.

clinic has a "quality officer". Medicare requires accountability for all forms of medical care and the cost of those outcomes.

THE AFFORDABLE CARE ACT

Unfortunately, the American health care system has become unaffordable for too many. If steps are not taken soon, to reverse the escalating cost of care, our health care system will be unsustainable. Although many more citizens are now insured under the Affordable Care Act (ACA) or what is now more commonly referred to as Obama Care, there are still far too many who can't afford that insurance. Too many have high costs for coverage and very high deductibles for care so no preventive services are covered.



Figure 41. Barack H. Obama, 44th President of the United States. (Courtesy White House Collection)

President Barach Obama's The Affordable Care Act provides expansion of Medicaid to some and tax credit incentives for private insurance companies to make coverage more affordable for low- and middle-income persons. The Act requires coverage to people with preexisting conditions without varying premiums based on health status. The future of Obamacare is still up in the air, as the federal government struggles to fix its flaws and insurance companies decide whether to continue to participate.² The US Congress has debated heavily pre-existing conditions and continuous coverage by the individual to assure premiums do not rise. Currently, to entice the healthy adult to enroll the individual will have penalties for not continuing coverage as dropping out for 63 days or more incurs a 30% rise in premiums. Although Obamacare has reduced the number of uninsured, the US is still a far cry from achieving universal health coverage.³

CHAPTER XIV: MAKING QUALITY HEALTH CARE AFFORDABLE

US HEALTH CARE, THE MOST EXPENSIVE, BUT NOT THE BEST

According to accumulated evidence, the US health care system is not the best in the world, despite it being the most expensive. Prior to the Affordable Care Act, there were 40 million Americans without health insurance, and even with ACA, health care remains inaccessible to many. In studies prior to 2000, when 16 health indicators were examined among 13 industrialized countries, neighboring Canada with similar population mix as the US ranked third and the US ranked 12th. A World Health Organization study, using different indicators including disparities among social groups and equality of family out of pocket expenses, ranked the US 15th out of 25 of the industrialized nations. Although, the explanation for this disparity is multifactorial, Barbara Starfield, a credible expert on this topic, would suggest that better access to care including universal health insurance and a stronger primary care workforce are worthy goals to improve America's health care system.¹

² Larry Levitt, "Is the Affordable Care Act Imploding?" *The JAMA Forum*, May 23/30, 2017, accessed 9 May 2019, http//:newsatjama.jama.com/category/the-forum/

³ Obamacare Facts, accessed 27 July 2019, https://obamacarefacts.com/obamacare-mandate-exemption-penalty/

¹ Barbara Starfield, "Is US Health Rally the Best in the World?" *JAMA, The Journal of the American Medical Association*, 284, no. 4 (July 26, 2000: 483.

VALUE-ORIENTED HEALTH CARE

Value means high quality, low cost. The Institute of Medicine's triple aim calls for "improving the experience of care for the individual patient as well as improving population health outcomes, while at the same time, reducing the per capita costs of health care." Unfortunately, many innovations in the health care system are overly costly, and although, there are signs of change, including innovations that rely on self-care, such as computer technology and social media, they are considered disruptive and encounter resistance from too many groups with vested interests.²

Michael E. Porter, Ph.D. provides some useful thoughts regarding a "valuebased system." He makes the point that for our current system to become cost effective and have value for patients, it must be of high quality and at a lower cost. It must benefit the payers, but mostly the society at large; it must include universal insurance coverage; and it must undergo restructuring, so that the money that is spent does more for the patient, and less for those who administer the dollars that are being spent. He describes five critical steps:

- 1. Change the nature of health insurance competition. It cannot be based on selection of healthier subscribers, nor deny services or shifting costs. It must compete on value
- 2. Employers have a vested interest in their employees' health, so they need to remain involved to foster competition and create a culture of wellness.
- 3. For those who have no access to employer-based coverage, equalize premium costs through tax deductibility.
- 4. Make insurance affordable through large statewide or multistate insurance pools to spread risk and that also means that all must be required to purchase health insurance, including the healthy.
- 5. Income-based subsidies to help low income people buy insurance.

Value must be determined by measuring health outcomes, rather than complying with practice guidelines. He also advocates prevention and routine health maintenance as well as bundle payment. The electronic

² Kevin P. Bhaven, Deepak Agrawal, and Frederick Cerise, "Achieving the Triple Aim Through Disruptive Innovations in Self-care," *JAMA, Journal of the American Medical Association*, 316, no 20 (November 22/29, 2016): 2081-2082.

medical record should be designed to measure health outcomes. A reimbursement system that rewards value should be the goal.³

THE COST OF HEALTH CARE, A MORAL DILEMMA

While a staggering \$3.2 trillion is being spent on health care in the US, there is general agreement that far too much of this money is being wasted.⁴ This is twice as much on a per capita basis (\$8,713) than the next most expensive health care system (Switzerland) in the world.⁵ Most of this money is controlled by public and private third parties without consensus from the many vested interest groups on how that money is to be spent. Despite efforts to base medical decision making on evidence and quality indicators, we still haven't determined how to eliminate unnecessary testing and procedures, or expensive treatments that don't work or produce undesirable outcomes. As noted in the early centuries of American health care quacks and ineffective treatments existed side by side with regular physicians. Today inadequate care and ineffective doctors still get reimbursed for poor outcomes in the US health system. The present opioid crisis highlights the use of health care dollars in bad outcomes. There is-general agreement that the health care dollar must be spent more wisely: giving a higher priority towards preventive medicine, behavioral health, managing physical pain, injury prevention, and improved strategies in caring for the elderly.⁶

In a recent article written by the Director of the World Health Organization Collaborating Center on Public Health Law and Human Rights, Lawrence O. Gostin, JD, offers five ethical values to guide reform in America's health care system. This will require a change in attitudes and an agreement on a

³ Michael E. Porter, "A Strategy for Health Care Reform Toward a Value-Based System," *The New England Journal of Medicine*, published at <u>www.nejm.org</u> June 3, 2009, 10.1056/NEJMp0904131.

⁴ Ezekiel J, Emanuel, "How Can the United States Spend Its Health Care Dollars Better?" *JAMA*, *Journal of the American Medical Association*, 316, no. 24 (December 27, 2016): 2604.

⁵ Sam Stebbins and Thomas G. Frohlich, "Countries Spending the Most on Health Care," USA *Today*, Nov 14, 2015, accessed on July 27, 2019,

https://www.usatoday.com/story/money/business/2015/11/14/24-7-wall-st-countries-spend-most-health-care/75771044/

⁶ Emanuel, "How Can the United States Spend Its Health Care Dollars Better?" 2606.

set of core values that as a society we can agree on, and he adds "why." The five that he proposes are:

- 1. Universal access: Health, he asserts is a fundamental social need. If one experiences illness or an injury, there should be access to health care which is affordable.
- 2. Equitable access: he asserts that America advocates fairness, and health care should not be very different for the wealthy vs. the poor.
- 3. Cost and affordable access: Although a national health care singlepayer system is looked upon with suspicion by many Americans, Medicare has a proven track record, and it works for most recipients. The threat of rationing is a silly notion, since unaffordable health care for those who don't or have inadequate health insurance are already being rationed.
- 4. Quality: Obviously America's health care system shines in many areas as regards quality, but the health of the inadequately insured is compromised.
- 5. Choice: Choice can foster competition and lower cost; however, health care is no ordinary commodity. Yet, politicians claim that choice of physician or hospital would improve quality and reduce cost.⁷

If we can agree that health care is a right, rather than a privilege, then affordable universal health care has to become a national priority.⁸

⁷ Lawrence Gostin, "Five Ethical Values to Guide Health System Reform," *JAMA: Journal of the American Medical Association* 318, no. 22 (Dec 12, 2017): 2171-2172.

⁸ Howard Bauchner, "Health Care in the United States: A Right or a Privilege?" *JAMA, Journal of the American Medical Association* 317, no. 1 (January 3, 2017): 29.

CHAPTER XV PHYSICIANS VS. NEW HEALTH PRACTITIONERS

Up until the early twentieth century nearly all physicians were males, most without a college education, and most with less than four years of medical school or any graduate medical school education. Most would have been categorized as generalists. By contrast, the physicians of today entering medical school are 52% female, ¹have a formal four-year premedical college education, a four-year medical school education, and three or more years of graduate medical education, and all are now considered specialists. According to the Agency for Healthcare Research and Quality, in 2010 just about 1/3 of the 624, 434 physicians were designated as conducting primary care the majority of their time. Just less than 1/3 or 87,650 of those in primary care were family physicians.²

In the span of fifteen years, from the year 2002 to 2017, the number of allopathic medical schools increased from *125* to 147, increasing the number of potential graduates from 16, 488 to 21,030.³ In 2015 there were *31* osteopathic schools, turning out nearly *5000* graduates.⁴ The number of residents enrolled in ACGME (Accreditation Council of Graduate Medical Education) programs are also increasing, but at a much slower rate with a growth of 7.9%.⁵ This means, of course, that residency positions can now be more adequately filled by US medical school graduates. The AMA's Graduate Medical Education Survey of 2017-2018, the number of residency programs in family medicine numbered 568 with 3,833 first year residents of whom more than 53% were women.⁶

¹ Claiborne S. Johnson, S. "The US Training System for Physicians-Need for Deeper Analysis," JAMA, Journal of the American Medical Association 320, no. 10 (September 11, 2018), 983.

² "Primary Care Workforce Facts and Stats No. 1," accessed 27 July 2019, https://www/ahrq.gov/research/findings/factssheets/primary/pcwork1/index.html.

³ Emily Gudbranson, Aaron Glickman, and Ezekiel J. Emanuel, "Viewpoint, Reassessing the Data on Whether a Physician Shortage Exists," *JAMA: Journal of the American Medical Association* 317 no. 19 (May 16, 2017): 317 1945.

⁴ Osteopathic Medicine in the United States," Wikipedia, accessed 19 May 2019, https://en.wikipedia.org/wiki/Osteopathic_medicine_in_the_United_States

⁵ Gudbranson, Glickman, Emanuel, "Viewpoint, Reassessing the Data on Whether a Physician Shortage Exists," 1945.

⁶ Johnston, "The US Training System for Physicians-Need for Deeper Analysis, 1052 and 1056

The physician output, however, is not keeping up with the demand. The American Medical Colleges has published several workforce studies over the past few decades to assess the physician supply and demand. In the 2018 report to the AAMC by IHS Markit, Ltd, the demand for healthcare services has increased by making it more accessible as the result of the Affordable Care Act (ACA). By the year 2030, the anticipated shortfall is projected at 40,800 to 104,900.^{7 261} It is likely that with universal healthcare, the demand for healthcare would increase further. Besides making healthcare more accessible as described in this report, Kirch and Petelle the demand for healthcare is also affected by increases in population and especially the elderly. Furthermore, the number of physicians projected to retire will be at a greater rate than being produced.⁸They propose that this can be solved with system innovations and a more diverse health care workforce.⁹

Another group would argue that the supply side is adequate, as the problem lies in maldistribution and system inefficiencies. This group also-suggests that innovation in systems approaches, such as the use of "virtual medicine" would help solve patient care needs and demands.¹⁰

Taking a different approach, the Institute of Medicine (IOM), in their 2014 report on graduate medical education (GME), concluded that there is a need for more generalists and fewer of certain kinds of specialists, as there is a "mismatch between the health needs of the population and the specialty makeup," as well as a "geographic maldistribution and insufficient diversity of

⁹ Ibid, 1948

⁷ "2018 Update: The Complexities of Physician Supply and Demand Projections from 2016-2030," *AAMC*, March 2018, 1. accessed July 29, 2019, https://samaritanministries.org/uploads/img/Baaamc workforce projectioupdate

⁸ Darrell G Kirch and Kate Petelle, "Addressing the Physician Shortage, The Peril of Ignoring Demography," *JAMA: Journal of the American Medical Association*, 17 no.19 (May 16, 2017), 1947.

¹⁰ Gudbranson, Glickman, Emanuel, "Viewpoint, Reassessing the Data on Whether a Physician Shortage Exists," 1946.

physicians."¹¹Furthermore, the IOM's special committee on the Financing of GME recommends that the current Medicare funding for graduate medical education be modified to enhance the production of the physicians needed to meet the nation's health care system requirements.¹²

THE NEW HEALTH PRACTITIONER

To add to the complexity on how the nation has addressed its own ongoing medical manpower needs, in 1967, the US developed physician-extenders or new health practitioners (NHP) programs producing both nurse practitioners and physician assistants. Nurse mid-wifery and nurse-anesthetist programs were further developed and expanded. By the year 2006, there were 110,000 NHPs in the United States, constituting more than 15% of the medical workforce.¹³ In ten years this number has more than tripled. In 2015, The National Commission on Certification of Physician Assistants (NCCPA) reported in its 2015 statistical profile that there were more than 108,000 physician assistants practicing in all specialties, and 28% were certified in primary care.¹⁴ In 2019, the American Association of Nurse Practitioners (AANP) reported that there were 270,000 nurse practitioners, and 87.1% were certified in primary care.¹⁵

DIRECT PRIMARY CARE & CONCIERGE MEDICINE

Direct Primary Care (DPC) is one form of concierge medical practice. DPC physician practices consist of physicians who are trained and educated in either family medicine, pediatrics or general internal medicine. Physicians contract with patients as their primary doctor. Generally, the doctor will enroll a limited number of patients (~600). The primary doctor is accessible for office care and is available

¹¹ Jill Eden, Donald Berwick, and Gail Wilensky, eds., *Committee on the Governance and Financing of Graduate Medical Education*, Institute of Medicine of the National Academies, (Washington, DC: National Academies Press, 2014), 2.

¹² Eden, Berwick, and Wilensky, eds., *Committee on the Governance and financing of Graduate Medical Education*, 16.

¹³ R. S. Hooker, "Physician Assistants and Nurse Practitioners: The United States Experience," *The Medical Journal of Australia* 185, no. 1 (July 3, 2006): 4-7.

¹⁴ 2015 Statistical Profile of Certified PHysi9an Assistants Statistical Profile by Specialty-an Annual Report of the NCCPA 9n.p.: NCCPA, 2016), accessed May 24, 2019 https://www.nccpa.net/Uploads/docs/2015StatisticalProfilebySpecialty.pdf

¹⁵ "NP Fact Sheet," AANP: American Association of Nurse Practitioners, accessed May 24, 2019, https://www.aanp.org/about/all-about-nps/np-fact-sheet

24/7 to include nights, weekends and holidays for non-face-to-face contacts via phone and electronic visits. The DPC physician provides office-based clinical and laboratory services and extended visits for care coordination and care management including routine and preventive medical care.

The American Academy of Family Physicians in its policy documents fully endorse the concept of Direct Primary Care. The benefit to the physicians includes low overhead, more time with patients, and guaranteed income. Patients still need to carry health insurance, as specialty consultations and hospitalizations are not covered. Some DPC practices do not participate in insurance plans, but those that do, will not bill for services covered by the retainer fee. The ethical issues confronting a DPC or concierge practice can be challenging, especially regarding contracted insurance carriers and complying with Medicare regulations.¹⁶

Philip M. Eskew, D.O. a 2015 graduate of the Family Medicine Residency Program of Heart of Lancaster Regional Medical Center in Lititz (Lancaster County), PA, has emerged as a leading voice in DPC in Pennsylvania, and makes the argument that DPC is "aimed at delivering quality care at an affordable price." This is done principally by eliminating the third-party fee-for-service payment. The periodic fees are sometimes referred to as retainer, membership, or concierge frees. There is also a combination of hybrid or split fees.¹⁷ In some states, where this is allowed, some concierge practices, such as the MDVIP established in 2000 (an American company headquartered in Boca Raton, FL), do bill third parties. In some "split practices," there are two cohorts of patients, one that includes the traditional third-party fee-for-service and another that does not involve the third party. To avoid a conflict with Medicare regulations, which prohibit charging "DPC" patients, some practices will not participate in Medicare. There are numerous variations of payment systems to accommodate primary care services for patients with and without insurance. Patients are expected to carry high-deductible or so-called "wraparound" insurance plans to cover hospitalizations and other expensive non-primary care services.¹⁸ The average monthly premium came to \$93.26 and the median was \$75.00, with a range of \$26.67 to \$562.50 in a survey

¹⁶ "Direct Primary Care," AAFP, accessed May 24, 2019, <u>http://www.aafp.org/about/policies/all/direct-primary.html</u>,

¹⁷ Philip M. Eskew and Kathleen Klink, "Direct Primary Care: Practice Distribution and Cost Across the Nation," *JABFM: Journal of the American Board of Family Medicine* 28, no. 6 (November-December 2015): 793

¹⁸ Ibid, 794.

of 143 practices across 39 states, some identified as concierge and most as DPC.¹⁹ There are many emerging formats of DPC, in every changing market place of health care delivery.

¹⁹ Eskew and Klink, "Direct Primary Care," 795

CHAPTER XVI HEALTH CARE: A RIGHT OR A PRIVILEGE?

Until America can decide whether health care is a privilege or a right for all its citizens, there will be disparities. For many Americans, it remains an anathema for government to control health care. Without affordable third-party support, health care, for even upper middle-class Americans, is considered too expensive. Many small companies can't afford the cost of insurance for its employees. Without government involvement, health care for all is not achievable in the foreseeable future. Aside from the health care provided by the Veterans Administration, it wasn't until the Johnson administration pushed through the Medicare and Medicaid programs in 1965, that government health insurance became available to the elderly and the poor. The Affordable Care Act of 2010 was another major effort to correct existing disparities in health care coverage, but its current design makes it unaffordable for many.

The highly regarded health care economist, Victor R. Fuchs, PhD, points out that the current cost of health care at \$10,000 per person per year is more than 50% the cost of any other country. The costs continue to rise, which are attributed to advances in medical science, the merger of physicians and hospitals into larger organizations, and employment-based insurance. Currently, fifty percent of the insured population is covered with employment-based health insurance, administered by large health insurance companies. These companies spend much of the health care dollar on marketing, administration, billing and collection, which translates to 24% expenditure gap between health care and health care systems.¹ This system also causes serious disparity between those who have access to employer-health insurance and those who do not.

Fuchs proposes eliminating the employment-based health insurance with a universal health care plan funded by a broad-based value-added tax dedicated to health care, in which everyone would be insured for comprehensive health care, including hospital care, physician and other professionals service and prescription medicine. He provides guidelines for such a system, which would limit the role of government to broad decisions, and give consumers a choice of competitive health care plans to allow for a basic plan and more expensive plans determined by services & quality, paid for with their after-tax dollars. He would also eliminate

¹ Victor R. Fuchs, "How to Make US Health Care More Equitable and Less Costly, Begin by Replacing Employment-Based Insurance," *JAMA: The Journal of the American Medial Association* 320, no. 20 (November 27, 2018): 2971.

fee-for-service to risk-adjusted capitation payment with productivity incentives to physicians if desirable.²

For years, a major concern of the medical profession is that third party intervention and decision-making compromises the time-honored doctor-patient relationship. Nonetheless, government involvement in the health care system has grown steadily. Even the medical educational system relies heavily on governmental support. Federal funds, directly and indirectly through medical research, supports all levels of medical education including our medical schools and graduate medical education. Besides Medicare and Medicaid and the VA system which amounts to more than half of the health care budget, it helps to pay for pharmaceuticals, manage the HIV epidemic, and pay for end-stage kidney disease. It even provides for end of life care through the Medicare hospice benefit.

In a 2018 editorial of the Journal of Lancaster General Hospital, Dr. Lawrence Bonchek writes that the public's attitude towards greater government involvement in health care is now acceptable, and there is strong support for a one payer system. He refers to an April 12, 2018 Washington Post published Kaiser Family Foundation poll, which points out that 51% of Americans and 74% of Democrats support a single-payer plan. He also points out in a letter to the editor of the local Lancaster newspaper, signed by thirteen local physicians, that argue that health care is a right, and that it should be accessible to all. In another poll of young people, ages 15-34, conducted by the Associated Press and National Opinion Research Center at the University of Chicago, two-thirds of the American people favor universal health care. For a long time, those opposing government intrusion argue that private competitive insurance plans would best preserve the doctor-patient relationship, and health care providers could compete on highquality fee-for-service care at the most reasonable cost. This would lead to lower health care costs, while preserving quality, but unfortunately the opposite has proven to be the case. It is clear that health care expenditures are not governed by free-market forces.³

Dr. William Frist a highly respected physician and a recent two-term Republican Senator of Tennessee, argues that every American deserves safe, effective, quality, efficient cost effective, equitable patient-centered, timely health and medical care

² Fuchs, "How to Make US Health Care More Equitable and Less Costly," 2972

³ Lawrence L. Bonchek, "Is a Revolution in Health Care Coming?" *The Journal of Lancaster General Health* 13, no. 4 (Winter 2018): 97-98.

that is accessible and affordable.⁴ This posits health care as a right and is frankly a worthy goal. But there are those who argue that health care is a commodity and not a right. A recent editorial by the editor of the JAMA expresses the view that health care is a "basic right and not a privilege."⁵ Pope Francis has declared that health care is a universal right. According to Cornell University Economist Robert H. Frank, total health care costs under a single-payer system are less because of lower administrative costs.⁶ From what is being expressed over and over again in the medical literature, the time is ripe for change. The resistance that was once there within the medical community is gradually withering. The new generation of health care a right for every American.

In the meantime, with an aging population and increased demand for health and medical services and further advances in medical science, medical care costs will continue to rise. This will require the development of even more specialists to accommodate the new science. At the same time better understanding on the pathogenesis of disease and the unravelling of the human genome will lead to more emphasis on prevention. The family physician, trained in providing continuous and comprehensive health care and with an increased emphasis on preventive medicine, will continue to play an increasingly important role as coordinator and navigator of the patient's total health care.

⁴ William H. First, "Health Care in the 21st Century," *New England Journal of Medicine* 2005 no.352 (January 20, 2005): 267-272.

⁵ Howard Bauchner, "Health Care in the United States: A Right or a Privilege," JAMA: The Journal of the American Medical Association 317, no. 1 (2017):29.

⁶ Robert H. Frank, "Why Single Payer Health Care Saves Money," New York Times, July 7, 2017.

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When I embarked on my journey to become a physician, let alone a family physician, I never expected that I would end up being an academician, and that I would be given the opportunity to help shape the discipline of family medicine. There were many who helped me become who I am today. In nearly everyone's life, family plays a dominant role, and in my case, I was fortunate to have been nurtured by parents who loved me unconditionally. Moreover, I had a father, who could not have been a better role model. He was the son of a highly educated teacher and a mother from one of the more respectable families on the Greek island of Kos, but family economics afforded him only an eighth-grade education. He immigrated to America at age 15, and worked in a hosiery mill for nearly fifty years. An honorable and very wise man, he encouraged me to be the best that I could be. In my youth, I was 6 feet tall, and my father was only 5 feet one inch in height. Nonetheless, I always looked up to my father.

As its founding director, the success of our program has become a source of great satisfaction and pride for me. I was at the right place at the right time to be given such an opportunity. At the time when I retired from my directorship in 2002, I was the longest tenured program director in family medicine. I could not have had a more satisfying career. I was fortunate to have worked in such a first-class institution as Penn Medicine Lancaster General Health. I was also fortunate to have had an administration who recognized our program as an important asset. They strongly supported our efforts to recruit an excellent administrative staff, outstanding faculty and most of all first-rate residents. Moreover, I feel fortunate that I was given the opportunity to work with academic leaders in our specialty within our various academic organizations to help shape our discipline.

I am grateful to the faculty and wonderful and dedicated staff that it has been my privilege to work with both during my tenure as director for more than thirty-three years. I wish to express my appreciation for Charlotte Devenburgh, my administrative and personal secretary in those early years, and especially to Lori Ganse and Christine Speros, who succeeded her. Their support and loyalty are deeply appreciated. Since my "retirement," for the past seventeen years, I continued to care for my patients in our urban-based family practice center on a very part-time basis and served as a preceptor in our rural based family health center. During all these years I have had great support from our administrative and nursing staff.
Special thanks goes to Dr. Stephen Ratcliffe who succeeded me and helped make the program so much better. He retired in July 2019, and he was succeeded by Pamela Vnenchak, M.D., a 1993 graduate of the program and his deputy for more than ten years. My trilogy ends as Pam begins her tenure. I know she will do well. She already knows what a great institution she is working for, and how supportive the people above her will be for her to succeed and to help her continue to advance the program. I will be retiring from clinical practice and teaching by the end of 2019.

There are many people who have helped me along the way to complete this book, including my son, James T. Zervanos and Alan Blum, M.D., professor of family medicine at the University of Alabama, who have reviewed early iterations of this work and provided me invaluable guidance. Special thanks are also extended to Mr. John Lines, public relations director of Lancaster General Health, who helped me acquire many of the photos of the many people who are part of the history of Lancaster General Health and helped shape this history. When I thought the book was finished, two of our graduates, Joseph Lahr, M.D., Class of 1979, and Mary Elizabeth Roth, MD, Class of 1973, painstakingly reviewed and critiqued every page to help convince me to convert the tome into three books. Their assistance has been invaluable. I also wish to express my deep appreciation to Donald Ivey, MPA, the Manager of the Center for the History of Family Medicine of the American Academy of Family Physicians Foundation, and Mr. Roger Sherwood, retired Executive Director, Society of Teachers of Family Medicine. who have helped me with the final iteration of all three books.

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APPENDIX I : FLEXNER'S SUMMARY OF THE PA MEDICAL SCHOOLS IN 1910

Flexner Report: Summary of analysis of the medical schools in Pennsylvania:

In 1910, the population of the state of Pennsylvania was 7,032,915, and there were 11,056 physicians. There were eight medical schools and one postgraduate school. Philadelphia had a population of 1,540,430, with seven medical schools and one postgraduate school. Pittsburgh with a population of over 570,000 had one medical school. They were as follows:

- 1. The University of Pennsylvania with 546 students, 63% from Pennsylvania. They had a faculty of 157 and 26 were designated as professors; its budget was \$131, 255 and income from fees was \$14,612. Its laboratory facilities included five well-equipped buildings, two of which housed histology and embryology; pathology, physiology and pharmacology; a third for chemistry and anatomy to include an anatomical museum; a fourth was dedicated to hygiene; and the fifth was a clinical laboratory, that had no designation. There was also a library and a separate museum. Contiguous to the labs was the University Hospital with 350 beds, 80% designated as teaching beds. There was also a separate maternity pavilion of 50 beds. The other two teaching hospitals were the city's Philadelphia General Hospital, next to the Penn campus and the Pennsylvania Hospital some twenty blocks away. Another building identified as the Phipps Institute was designated for tuberculosis patients. There were also two dispensaries, one next to the hospital and the other at a distance.
- 2. Jefferson Medical College had 591 students, 57% from Pennsylvania. There were 122 faculty of whom 22 were professors. The school collected \$102,995 in fees. The school contained separate laboratories for anatomy, physiology, chemistry, pathology, histology, bacteriology and pharmacy. There was a library and a museum. The clinical facilities included the Jefferson Hospital with 223 teaching beds, and adjoining the clinical laboratory with a connecting dispensary.

- 3. Medico-Chirurgical College of Philadelphia. Did not require a high school diploma and it had 480 students, 82% from PA. There were 109 faculty with 23 professors. Total fees collected amounted to \$48,281. Although there were well-equipped laboratories of physiology, chemistry, pathology and bacteriology, anatomy was limited to dissecting. There was a library at the College Club, but no museum. There was a lack of scientific activity. The school had its own teaching hospital with 180 beds and an active dispensary close to the clinical laboratory. There was also a nearby maternity hospital.
- 4. Temple University, Department of Medicine. A high school diploma was not required. There were 136 students, a faculty of 85 with 15 professors. Total fees collected amounted to only \$17,000. The laboratory facilities were considered inadequate. The chemistry lab was elementary. A single room was devoted to histology, pathology and bacteriology. Physiology was fitted in where it could. The dissecting-room was in bad condition. A small museum and a library were minimal. Two small hospitals were accessible, four-fifths of the beds were devoted to surgical cases.
- 5. Hahnemann Medical College and Hospital. Again, no high school diploma was required. There were 182 students, 61% from Pennsylvania. There 72 faculty with 27 professors. Total fees amounted to \$18,500. The school had an ordinary laboratory for general chemistry, a second devoted to histology and physiology and a third devoted to pathology and bacteriology. The school is contiguous to the Hahnemann Hospital with 150 beds, without designated ward clinics. The students did not have access to the clinical laboratory. There was a busy dispensary, and this was the only opportunity the students had to make close contact with patients.
- 6. Woman's Medical College of Pennsylvania. The school required a high school diploma or its equivalent. There were 125 students with 52 faculty and 25 professors. The fees amounted to \$15,480 and additional income from endowments came to \$13, 820. The laboratory facilities were "intelligently equipped and conscientiously" used for physiology, bacteriology and pathology, histology and embryology, chemistry, pharmacy and anatomy. There was a useful library and a good museum. The school was building a new teaching hospital, but in the meantime, it used a temporary building, with 27 beds designated as teaching beds. There was also a maternity wing with 16 beds. There was an adequate dispensary.

- 7. Philadelphia College and Infirmary of Osteopathy. There were nominal entrance requirements, but no mention of a required high school diploma. There were 126 students with 18 faculty and 11 designated as professors. The total amount collected was \$18,000 in fees. Although there was a smaller room for elementary chemistry and laboratory facilities for anatomy and histology, the dissecting room had an intolerable foul-smell. Moreover, there were no accommodations for pathology, physiology, or bacteriology. Although there were three separate class-rooms that were adequately furnished, the medical school did not have a museum or large lecture hall. There were about 200 patients who visited the infirmary for treatment, but it had only three beds, and it was blocks away from the medical school.
- 8. Pittsburgh had a population of 570,065 people with one medical school at the University of Pittsburgh. The school required a high-school diploma and there were 315 students attending classes. There were remodeled laboratories for chemistry, physiology, bacteriology and pathology. A new building was being erected. There were several hospitals with more than adequate beds to accommodate the students. There was a 34-bed maternity hospital and an accessible dispensary. There was no mention of a library.
- 9. The Philadelphia Polyclinic: This is a post-graduate independent school, which required that the student maintain an M.D. degree. The annual attendance was about 150. There were 129 faculty with 29 professors. The school was dependent on fees and donations. The school had a laboratory building in which it conducted classes in clinical microscopy, operative surgery.
- Overall, Flexner considered only the University of Pennsylvania and Jefferson Medical College as meeting "a reasonable, although not a high standard." Both schools would have to increase its endowment to meet what would be considered a desired standard.

Although the University of Pittsburgh would require a considerable endowment to overcome its deficits, it was confident it would be able to do so. "The other five schools have no future," and Flexner had little hope for the postgraduate school.¹

[2] [3]

The Medical Chirurgical College of Pennsylvania was unable to stand on its own and was absorbed by the University of Pennsylvania. The other five schools managed to survive until the late 20th Century when mergers dissolved two of the five schools, as Hahnemann and Women's Medical College were merged and formed the Drexel University College of Medicine.

In contrast to the above, Flexner's commentary on the Department of Medicine of The Johns Hopkins University was as follows: Maryland with a population of 1,319,132 and 2012 physicians, giving it a ratio of 1 physician for every 658 people. All 7 of its medical schools were located in Baltimore, which had a population of 583,475. The entrance requirements of the Hopkins schools, not only included a bachelor's degree, but the students had to excel in chemistry, biology and physics and have a reading proficiency in the German and French languages. It had 297 students in attendance with a faculty of 112 of whom 23 were professors. All the laboratory teaching was conducted by instructors who gave their entire time to teaching and research; the heads of the clinical departments were salaried teachers. The income from tuition fees is \$60,542, that from endowments \$19,687, making a total of \$80,229. The budget calls for \$102,429, not including salaries of the clinical faculty and other items carried by the Johns Hopkins Hospital, which is thus actually an integral part of the medical school. The productive hospital endowments now aggregate \$3,632,289, not including the bequests from the Phipps Psychiatric Clinic and Harriet Lance Johnson Home for Children. The university hospital contained 385 beds, all committed to serve the teaching needs of the medical school. "The laboratory facilities are in every respect unexcelled." The clinical facilities provided the faculty, which also serve as the hospital's medical staff ideal opportunities for both teaching and care of the patients. Moreover, the clinical laboratories were arranged to be

¹ Flexner, Medical Education in the United States and Canada, 293-300

immediately accessible and facilitate scientific inquiry. The contiguous dispensary was largely attended and is admirably conducted from the standpoint of public service and pedagogic efficiency

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