An Informal History of American Medicine from the Colonial Era through the 20th Century

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Cambridge
Scholars
Publishing

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This book first published 2023

Cambridge Scholars Publishing

Lady Stephenson Library, Newcastle upon Tyne, NE6 2PA, UK

British Library Cataloguing in Publication Data
A catalogue record for this book is available from the British Library

ISBN (10): 1-5275-0460-3
ISBN (13): 978-1-5275-0460-8

Originally published as:
Glass Half Full. An Informal History of American Medicine
Copyright 2009 Curtis E. Margo
Clio Mentor, Tampa, FL
Library of Congress Control Number: 2009925250
ISBN: 978-0-692-00287-2
Printed in the United States of America

To Lynn

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PREFACE

One means by which physicians learn to cope is by invoking imperatives and viewing their environment in black and white. Dichotomous choices in medicine are the rule, not the exception. Laboratory tests are either normal or abnormal; biopsies are either benign or malignant; clinical judgments are either right or wrong (in foresight or in hindsight). Shades of gray seldom exist (or, at least, rarely admitted to), perhaps because they could be seen as a sign of weakness or indecision. This same absolutism has been applied to the interpretation of American medicine. It is considered either stellar or abysmal, when, ironically, it may be both.

For decades I have valued and cursed medicine, finding myself a tormented observer of the profession. Praise for the practice of medicine is understandable because so much beneficence comes from it. I know physicians who embody every aspect of professionalism. Their proficiencies span the dimensions of competence. Doctors are knowledgeable, inquisitive, and capable of commandeering strength in times of stress. They manage uncertainty daily, knowing it is the enemy of self-confidence. I have been surrounded by men and women who are intuitive, empathetic, and caring. They are wizards of sorts, keeping technology at bay and not letting it consume them, something easy to fall victim to in what is now a technology-driven profession.

At the same time, I have worked with physicians who lack curiosity, attentiveness, self-discipline, and emotional intelligence. Others in my profession cannot resist the temptation to financially milk the system, a practice euphemistically called *gaming*. As surprising as this range of behavior is, these individual are able to work with one another in apparent harmony—most of the time. It is no secret that doctors are poor police officers, silently tolerating the unscrupulous and incompetent in their ranks.

The practice of medicine is filled with contradictions and inexplicable observations. One of my favorites is the issue of quality and how it is measured. I suspect most physicians in practice today believe American medicine is the finest health care system in the world, with an opinionated minority disagreeing. I discovered years ago that divergent opinion is nothing unique in the learned professions. When I first explored the phenomenology of medical disputes, its historical roots trace back to the time doctors first set foot on this continent. The archaic quality of these

controversies captivates the imagination. The political nature of humans, it seems, makes us prone to polar judgments regardless of occupation. Although physicians are not the only professionals to fall victim to the perils of dichotomous thinking, the implications for patients are far-reaching.

I am not alone in finding inconsistency and contradiction in our system of health care. Arnold Relman, former editor-in-chief of the *New England Journal of Medicine*, begins his 2007 book, *A Second Opinion*, with a quote from President George W. Bush: "America has the best health care system in the world, pure and simple."[1] Then juxtaposed to the President's remark are the words of Donald Kennedy, former president of Stanford University and editor-in-chief of *Science*: "The U.S. health care system becomes a more embarrassing disaster each year. . . ."[2] Could anything be more intellectually rewarding than to reconcile these interpretations and understand how such ostensibly mutually exclusive views could come about?

Nowhere in my formal education or training has medical history been assigned any degree of importance. There is an oral tradition to medicine and surgery that resembles mythology more than historiography. It serves a role in indoctrinating young doctors into the profession and, like many legend-based histories, has serious downsides. It can perpetuate a professional superiority complex that works against the tenets of humanism, which ultimately distances physicians from their emotional intelligence.

The first books I read on medical history described in varying detail the events surrounding famous medical discoveries and innovations. They were hardly balanced accounts, typically ignoring the failures that preceded success. Some were tedious recollections of names and dates, portraying physicians in sharp relief without ambiguity. Rarely was medicine explored in any cultural context, either the broader American culture or its own professional microcosm. What I read was much like the American history I was taught in high school—sanitized. This is not to say that critical works did not exist. They did, but were few and often highly focused critiques.

For hundreds of years, doctors in North America could not be distinguished from medical imposters because the art of healing could be easily and effectively imitated. What made doctoring so easy to mimic was that physicians were unable to cure disease or alleviate pain or suffering. Essentially anyone could prescribe placebos. The scientific basis of medicine was painfully slow to take root, but it did eventually catch on thanks to the extraordinary groundwork completed in Europe. Without contributions from the Old World, there is no telling how long humanity would have had to wait for a rational system by which to classify and treat

disease. Once a rudimentary knowledge of biology was incorporated into medical practice, the profession gained economic and political strength, leaving in its wake the corpses of empirics, homeopaths, and charlatans.

The phenomenal growth of medicine in the second half of the twentieth century was made possible by a dedication to high educational standards while embracing science and technology. Physicians were soon amply rewarded for their special knowledge and skills. Then other tribulations developed. The profession appeared to lack leadership commensurate with its vaulted position in society. The medical profession for much of its modern existence lacked identity. The disparity between power and purpose was due to the dual forces that shaped American medicine: humanism and commercialism. Doctors may have achieved unprecedented authority in society, but it was squandered by the inability to agree upon a primary mission. Fragmented and decentralized, the medical profession over the last half-century has grown into a commercial powerbroker, providing the most costly and inefficient health care in the world. How did such a thing happen?

An Informal History of American Medicine was written to unravel and celebrate the convoluted history of the medical profession. It attempts to recount the scientific and technological achievements of medicine in context with the values, beliefs, and behavior of the medical profession itself. Because American medicine is such a vast subject, selecting what to cover is crucial to telling the story. Determining content is as precarious a task as it is a potentially creative a tool. Failure and misadventure seldom get included in historical surveys of science and medicine, despite their critical role in shaping events. Works that examine medical misadventure risk being thought of as "exploitive"—trashy exposés of dubious merit. But ignoring the darker side of medical history is as misleading as it is dull. Consider too that heroes take on even greater stature when measured against the scoundrels that surround them.

Meaningful trends in science and medicine also take time and distance to fully comprehend. It is not easy to portray past events in a fair and unbiased manner given the advantage of historical perspective. Daniel Boorstin deserves credit for warning historians to avoid being "seduced" by the false sense of wisdom that hindsight confers.[3]

Medical jargon is arcane. Its complexity is explicable as it helps justify the elite status of the profession. But esoteric language also interferes with effective communication. Language has frustrated the study of medical history since the time of Thucydides.[4] Concepts exist through words and sentences; when concepts are unfounded it creates havoc with language. Until the last 150 years, concepts of disease were unsound or untenable.

Consequently, the words used to convey the mechanism of disease were hollow; they had little meaning. The obtuse medical nomenclature of the pre-biology era was not just tedious to read but verged on gibberish. I have limited the use of antiquated terms in this book, hopefully without implying that any greater understanding of disease existed in the past than really did.

Physicians, with their special position in society, routinely collect intimate information on the lives of their patients. Doctors are by the nature of their work biographers. Ever since I learned about the curious medical care surrounding the deaths of historical figures like George Washington and Franklin Delano Roosevelt, I have appreciated the educational value of medical biography. For this reason, I have included in many chapters noteworthy encounters that famous Americans have had with the medical profession. They tend to be sobering events that shed light upon the interaction of medicine and society.

An Informal History of American Medicine is a compilation of stories about the people, institutions, and events that moved American medicine forward and backward over the last few centuries. Many of these narratives grew out of the oral history I learned during my years of training. I have included background on the technical aspects of medicine and surgery to make the march of events as comprehensible as possible without over simplification. Because American medicine does not exist in isolation, several chapters are devoted to describing its relationship to European medicine and to science in general.

This work was sewn together from secondary sources. I have tried to accurately credit the sources relied upon to construct narratives. Any failure in this regard is my responsibility. In tribute to George Santayana's warning that "those who cannot remember the past are condemned to repeat it," people who do read history are condemned to interpret it. *An Informal History of American Medicine* is an invitation to reflect on the meaning of medicine in our society.

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FOREWORD TO SECOND EDITION

How should second editions be characterized? The second edition of *An Informal History of American Medicine* is both modified and expanded. Each of the original 25 chapters has been revisited. Portions of narratives that were obstruse or vague have been clarified to the best of my ability. Over the past 13 years, colleagues and friends have suggested topics to include in future generations of the book. I have considered these recommendations carefully and found the proposals interesting as they provide perspective on what people desire to know about the practice of medicine not easily found in textbooks. A new chapter "Competition – a Tale of Two Departments," has been added. The chapter deals with the single most common question I get asked about practicing medicine in a competitive environment. It provides what may be a unique view of how academic departments cope with adversity.

Curtis Margo, Tampa, Florida
November 6, 2022

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CHAPTER 1

THE COLONIAL LANDSCAPE

Indigenous People

Thousands of years before European settlers reached North America, an indigenous people, whose forbearers were said to have migrated over the Bering landmass, inhabited the continent. The hundreds of Indian nations scattered across its lands had little in common beyond how different their cultures were from that of Europeans. Physically dissimilar from the Mongoloid people to whom they were supposedly related, most Native Americans lived within nomadic communities or small permanent settlements. Soon after Columbus made his first journey to the Western hemisphere—and many generations before the inevitable conflict between White and Indian cultures signaled the destruction of Indian civilization—a pestilence descended on North America.[1] Its agents are now known to be many, but for the first inhabitants of North America this deadly and pernicious attack was a singular evil.

On Columbus's second visit to the island of Hispaniola, he brought livestock he did not know was infected with influenza. Perhaps one of the oldest of human diseases, influenza is initially acquired from pigs or waterfowl and spread by humans through the secretions of the respiratory tract. In small populations the virus runs a limited course, either by inducing protective immunity after an abbreviated illness or by killing its host before it can infect others. But in Hispaniola there had been no contact with this or similar forms of contagious disease before the Spanish arrived. The virus spread through the virgin population of the island before laying waste to the Caribbean basin with amazing speed.[2] Traders eventually carried it to Florida, where—like a harbinger of more deadly things to come—the virus flourished in other highly susceptible populations.

Influenza was just the first of many lethal infections brought to the New World by Europeans. During the first and second decades of the sixteenth century, two waves of smallpox swept across the Caribbean islands before the virus emerged on the continent near the Yucatan Peninsula. This plague caused death and destruction in the Indian

communities on an unprecedented scale. Native Americans were terrified by the mysterious fever that disfigured the face and body with thousands of boils before suffocating its victims from within. With no protective immunity, Indians of all ages were defenseless against the disease. Individuals in large families and close tribal communities would often develop symptoms of infection simultaneously, leaving no one well enough to care for the sick, or to provide food or water for those recovering. It was not unusual for an entire tribe to perish from smallpox, a tragic measure of how immunologically susceptible the population was to common European pathogens. Some disagreement persists over how the first case of smallpox entered the New World.[3] The most likely source was a crew of sailors with foul-smelling pustules that entered the port of Veracruz aboard the ship *Panfilo de Narvaez* in 1520. Within a year, smallpox had spread throughout present-day Mexico and Central and South America. The number of lives lost from early pandemics has been estimated in the millions, although reconstruction of these remote events involves considerable guesswork.[4]

As Spanish explorers and their domestic animals made their way into the interior of the continent, they shared an assortment of pathogens with each new population of Native Americans they encountered. The general direction of spread was north from Central America through present-day Mexico. Only the scarcity of population centers and rarity of travel slowed the pestilence. Once Europeans began to inhabit the east coast of North America in sufficient numbers, Native Americans found themselves assaulted by mysterious diseases on two fronts. By the middle of the sixteenth century, tens of thousands of Mesoamericans had been killed by pneumonic and bubonic plagues, typhus, typhoid fever, measles, and venereal disease. Recurrent pandemics of smallpox and influenza would continue to decimate Indian nations across the entire continent for decades to come.

During the first half of the eighteenth century, five smallpox epidemics were reported in New Mexico. Half the Catawbas of South Carolina died during the smallpox outbreak of 1759. The same proportion of Cherokees perished when the tribe first encountered the virus in 1740. They barely escaped annihilation a generation later when immunity fell below protective levels. Primitive communities such as these were unprepared for the consequences of large-scale epidemics. The infrastructure of Native American villages buckled under the pressure to maintain social order, while some disappeared forever. When left without young men to hunt or elders to lead, smaller communities risked extinction. Neighboring tribes might accept survivors, but outsiders were never enfranchised and commonly risked enslavement.

The practice of medicine varied considerably among different tribes. Most medical men learned to treat fractures and dislocated joints through experience, finding mechanical stabilization a time-tested method that allowed bones and ligaments to heal. Common sense would likewise guide the treatment of flesh wounds and other injuries. But tribal doctors believed illness was the result of supernatural forces and, therefore, relied almost exclusively upon a spiritual approach to treat disease. Try as they might, shamans could not rid bodies of the demons that caused rheumatism or stroke. Herbal medicines were used in many tribes, but no plant extract at the time could alter the course of contagious disease, cancer, or heart disease. Indian magic was ineffective in combating the pestilence brought by White men, but shamans were spiritual leaders who served other important functions in their communities. Tribal doctors were father figures, men of character, who held villages together through trust and leadership.

It is estimated that in the hundred years prior to 1619 as many as 90 to 95 percent of the Native American population succumbed to infectious disease.[5] With a population between five and ten million in 1492, the Indian communities of North America found themselves struggling for survival at the time European settlers began arriving in large numbers along the east coast.[6] With many tribes depleted of warriors, Indians were in no position to thwart White occupation.[7] Several years before the Pilgrims arrived in New England, local tribes had been severely affected by smallpox brought by early European explorers. The outbreaks stressed the social network of several Indian communities along the coast, reducing their options in how to deal with the new arrivals at Plymouth. The ranks of younger males had been depleted to the point that tribes did not have the capacity to defend their land from the intrusion of White settlers even if they wanted to. In an era preoccupied with religious delusion, the Pilgrims likely construed the outbreak of smallpox that heralded their arrival as an act of divine providence.

It took time for the American Indian to associate the great pestilence with Europeans because the agents of disease were invisible and transmitted by a variety of vectors (e.g., air, animals, water, etc.). Native Americans, after visiting port cities or trading posts, carried germs with them to the hinterlands, where they spawned derivative epidemics. Perplexed at first by how these pale-skinned strangers could inflict fever and death from great distances, they eventually understood the connection between White men and disease. Once tribes accepted that Whites had the power to cause grave illness, they attributed it to witchcraft or sorcery. Such malicious and deadly curses must have been seen as acts of incomparable evil.

Historians have paid scant attention to the destruction caused by contagious disease in Native Americans during the post-Columbian era, preferring to concentrate upon the later struggle brought about by cultural differences between Indians and European settlers. From their earliest encounters with indigenous tribes, Whites demonstrated little respect for Indian values or traditions. The reluctance of the American Indian to adopt Christianity or to accept the European concept of property ownership only aggravated the cultural divide. Since Europeans regarded Indian society as backward and Indians themselves as savages, it made mutually solicitous interaction nearly impossible. Although cultural differences would persist and eventually lead to the near extermination of the indigenous people of North America, contagious disease continued to play an important role in the ongoing battle over land and personal freedom. Because the Indian populations had already sustained an insurmountable setback from contagious diseases by the time the British colonists arrived, Native Americans lost any advantage that numerical superiority might have offered.

As time passed, survivors developed immunity to common pathogens. Eventually, Native Americans would acquire the same resistance to infectious diseases as Whites, but by then the damage to Indian culture had been done. Indian societies, without steel and machinery, proved to be no match for the new Americans who wanted land for farming and hunting. Within two hundred years, the remaining Natives would be confined to small reservations on land that Whites did not wish to own. White Americans disregarded their common humanity with Native Americans while microbial pathogens were not nearly as intolerant, showing little discrimination among humans of any race.

Medical Organization

Far from monarchial oversight, Europeans found North America bountiful but harsh—both physically and psychologically. The trappings of old age were not easily attained in British colonial America unless an individual exercised a modicum of cautious behavior and learned to keep a safe distance from strangers. It also helped to possess good fortune and parents who had outlived their contemporaries.

Colonists along the eastern seaboard saw their high rates of birth offset by high rates of infant and childhood mortality. Death from puerperal fever or excessive blood loss during childbirth exacted a toll upon families and depleted communities of women in their reproductive years. Widowed fathers, often forced to give away children they could not raise, were a forgotten casualty in this cycle of harshness. The inhabitants of the New

World had to plan their lives according to grim realities: They were defenseless against infectious disease and forced to anticipate being periodically ravaged by epidemics of smallpox, malaria, yellow fever, and influenza. If these diseases were not enough to dampen colonial spirits and thin the ranks of senior citizenship, much of the population was nestled in the wilderness where settlers had to cope with Native Americans and the violence spurred over property and possession. Wounds acquired in battle or from farming accidents—often small and seemingly innocuous—frequently became infected, resulting in blood poisoning and death. Random attacks of malignant fever, acute bellyaches or pleurisy could leave a child orphaned, or a husband or wife widowed at any time. Such events were constant reminders of the capricious nature of health.

Any feelings of helplessness that the colonists may have had were compounded by the patchwork of healers referred to as "doctors." With the colonies isolated from European centers of learning, medical school was an indulgence few young men could afford. Because of the shortage of formally trained physicians, other types of healers filled the void.[8] With social consent, the appellation "doctor" was given to healers regardless of their education, credentials, or training. They came from a variety of backgrounds and worked independently of one another. Those with some form of training, no matter how trivial, tended to recognize a loose hierarchical order among fellow healers. This tacit distinction was by no means universal. As the divisions between healers widened and the distinction between groups blurred, economic tensions increased as they vied for patients. Because there was no common ideology that united healers into one professional community, their relationships were guarded and distrustful.

The heir apparent to professional "doctoring" (other than the few European medical school graduates who came to live in North America) was the apprenticed-trained physician. These men were often illiterate. They usually learned their trade locally from other apprenticed-trained doctors. Receiving little or no formal education and having few if any textbooks to study, the apprentice learned by observing. With training dependent upon the skills and knowledge of a single mentor, the quality of education could vary greatly. Although apprenticeships could last up to seven years, apprentices had, in fact, limited exposure to anything resembling a well-rounded clinical practice. The experiences of most students were confined to the opinions of just one doctor, who was more likely to treat his apprentice as a common laborer than a future colleague. Though understandable for a frontier society, the apprenticeship system

created medical provincialism while inhibiting the advancement of liberal education and scientific learning.

The typical apprentice was an indentured servant who willfully entered into a contract because he thought the obligation not excessively long and the potential rewards sufficiently tangible. For several years, most apprentices performed menial tasks, including running errands, cleaning equipment, washing bottles, and sweeping floors. If performance was satisfactory, they would be taught to mix drugs, apply plaster casts, hold a bleeding cup, and identify herbal remedy plants. It would be towards the end of servitude that many apprentices were allowed to participate in the pulling of teeth, delivering of babies, and lancing of boils. Preceptors who worried about local competition may have found it to their advantage to teach apprentices as little as possible, knowing a few botched procedures in private practice could force a recent graduate to move elsewhere.[9]

The apprenticed-trained physician, having gone through years of menial labor, may have believed he was the legitimate beneficiary of medical authority. This opinion, however, was not that of colonial society. The title "doctor" could be worn by anyone who wished to assume the role. In an environment that placed no restriction upon who could practice medicine, the apothecary, old-world barber, or midwife could serve as community doctor without fear of public rejection or legal rebuke. Having been freed from the yoke of old-world tradition, colonists wanted no tests of competence, university degrees, or certifications of training as prerequisites to practice medicine. The absence of professional guilds and the lack of governmental regulation made the practice of medicine a free-wheeling endeavor with medical assistants, druggists, and bonesetters joining the ranks of physicians willy-nilly.

Women, as the head of households, made up most of the ubiquitous medical workforce, practicing what was loosely referred to as "folk medicine." Mothers and wives spent considerable time preparing for and dealing with the multitude of maladies that afflicted the colonial family. Often known as "domestic healers," they were, by default, the only medical resource available for many families. Their formal training was nonexistent and therapeutic arsenal paltry. It consisted principally of herbal or kitchen remedies designed to treat everything from gastrointestinal hemorrhage to consumption. More than a nurse, the domestic healer dealt with injury and disease that would challenge a modern-day surgeon or infectious disease specialist. Pragmatic and self-reliant, domestic healers were available for family and friends, yet were not directly involved in the commercial enterprise of medicine. Since they seldom sold their services, the domestic