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Dolan, Brian

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*Perspectives in Medical Humanities, Supplement 2*

# HOSPITALS Through History

Brian Dolan, PhD





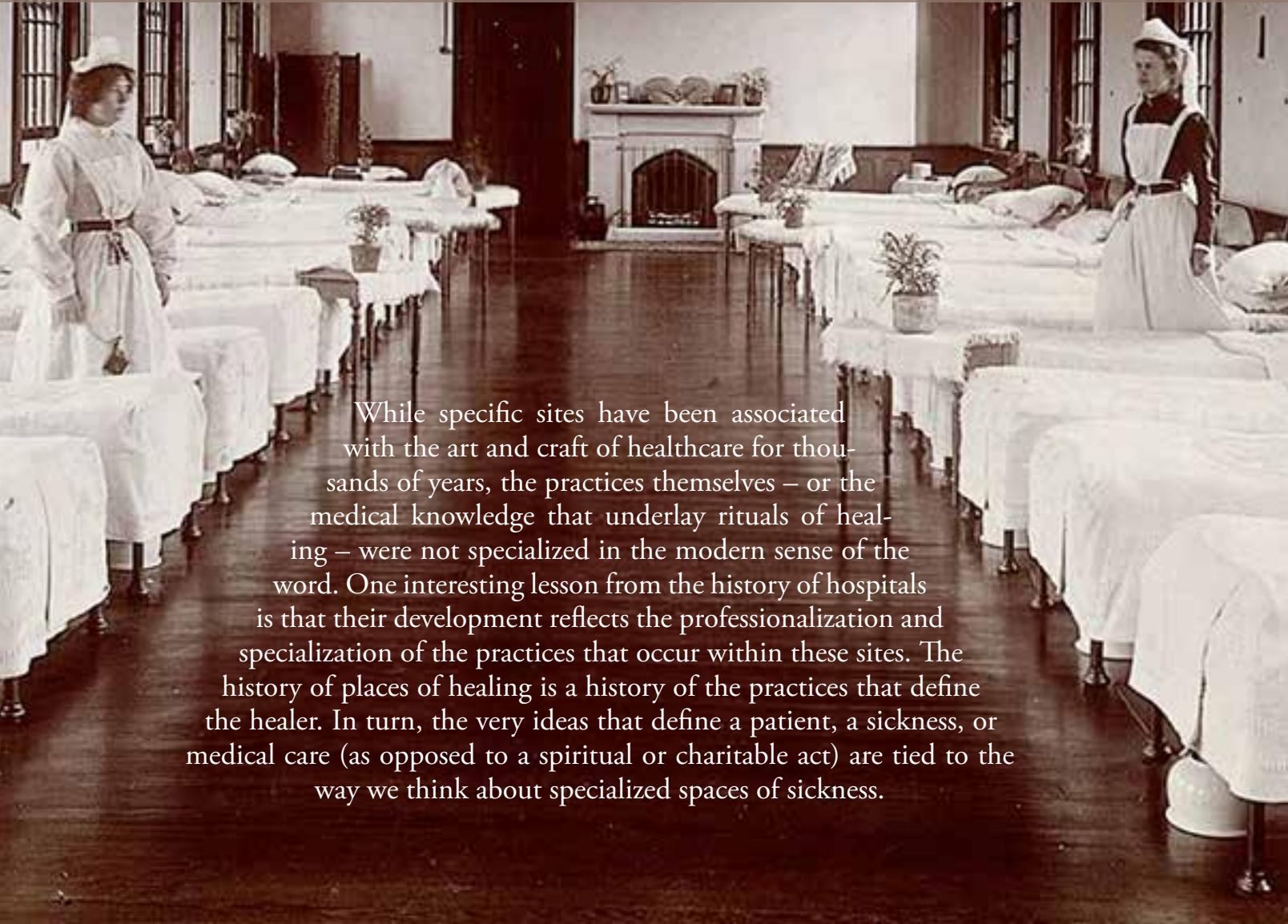
# THE CULT OF ASCLEPIUS



Fig. 1: Frescoe in the Hospital of Santa Maria Della Scala



In the United States, the existence of hospitals as centralized organizations for urgent healthcare is taken for granted. For medical students, imagining a career in medicine is often imagining what it would be like to work in the wards. One of the privileges many medical schools enjoy is access to a “teaching hospital,” either a university medical center or community hospital where students receive clinical training. In the course of medical education, students across the country will also be placed in preceptorships in private practice clinics, specialist care centers, professional office buildings, and some even in shopping malls. The institutions of medicine are diverse, complex, and rarely run the same way as one another. Yet despite the diversity and degrees of specialization in modern medical centers, the fundamental idea that rituals of healing should be located at designated places stems back to the ancient world.

A historical black and white photograph of a hospital ward. The room is filled with rows of beds, each with a white sheet and a small table beside it. Two nurses in traditional uniforms and caps are visible, one on the left and one on the right, standing near the beds. In the background, there is a fireplace and a window. The overall atmosphere is that of a busy, organized medical facility from a past era.

While specific sites have been associated with the art and craft of healthcare for thousands of years, the practices themselves – or the medical knowledge that underlay rituals of healing – were not specialized in the modern sense of the word. One interesting lesson from the history of hospitals is that their development reflects the professionalization and specialization of the practices that occur within these sites. The history of places of healing is a history of the practices that define the healer. In turn, the very ideas that define a patient, a sickness, or medical care (as opposed to a spiritual or charitable act) are tied to the way we think about specialized spaces of sickness.



## Temples and Xenodocheia

The healing arts have long been intertwined with mysticism, religion and alternate belief systems regarding sickness and health. We know of many ancient associations between healing rituals and religious practices and beliefs. Take, for example, the small city of Epidaurus that once existed on what is now the Peloponnese peninsula in a southern region of Greece. In the fifth century BCE (Before the Common Era) it was determined that this is where Apollo's son Asclepius was born. This thought provided comfort to a growing population that was displaced by war and ravaged by plague. Around 430 BCE, Epidauran priests constructed a sprawling temple in Asclepius's honor where the sick, dying, birthing mothers, and visitors could lodge, feast and offer sacrifices to the god in the hope of prolonged health.

Within a main shrine sat a statue of Asclepius, a middle-aged bearded man wearing a tunic tossed over his left shoulder, resting next to his dog. Plaques commemorated miraculous cures. Soon after, another Asclepian temple was erected near the Acropolis in Athens, then another in Pergamom, and then in Rome. Being not only shrines to worship the god, they offered a sanctuary for residents surrounded by a sacred wall surrounding spring baths which cleansed their bodies. Historic accounts suggest they were hugely popular, with over three hundred temples founded throughout the Mediterranean world and the Roman Empire by the new millennium. The practitioners, visitors and supplicants formed what is referred to among classicists as "the cult of Asclepius." [1]

Fig. 2 (Opposite): Claybury Asylum, Woodford, Essex  
Fig. 3: Asclepius with his serpent-entwined staff, Archaeological Museum of Epidaurus

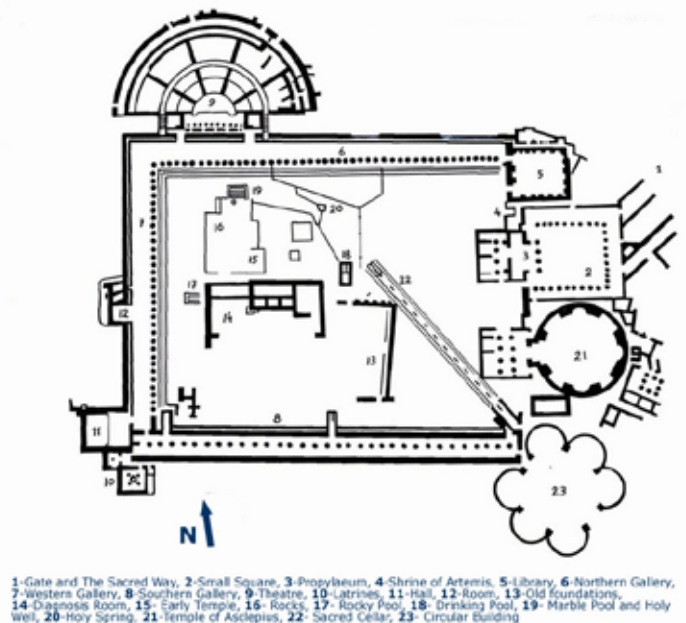


These temples, known as *Asclepieions*, became an “international institution of worship,” according to medical historian Guenter Risse. “In an effort to expand their healing options, which ranged from divine intercessions by Apollo, opinions of healer seers, magicians, surgeons, athletic trainers, and herbalists, the ancient Greeks may also have targeted human disabilities as the proper concern of a former healer turned hero and now a major deity: Asclepius.” [2] Devotees of the healing arts, called Asclepiads, were now associated not only with divine powers and certain rituals of practice but temples and dormitories of worship and recovery. While very much like temples to other gods, encompassing common acts

of homage and piety, the design and chosen location of Asclepieions – near the seaside or scenic groves – made them more akin to “health resorts,” to use classical scholar Alice Walton’s analogy.

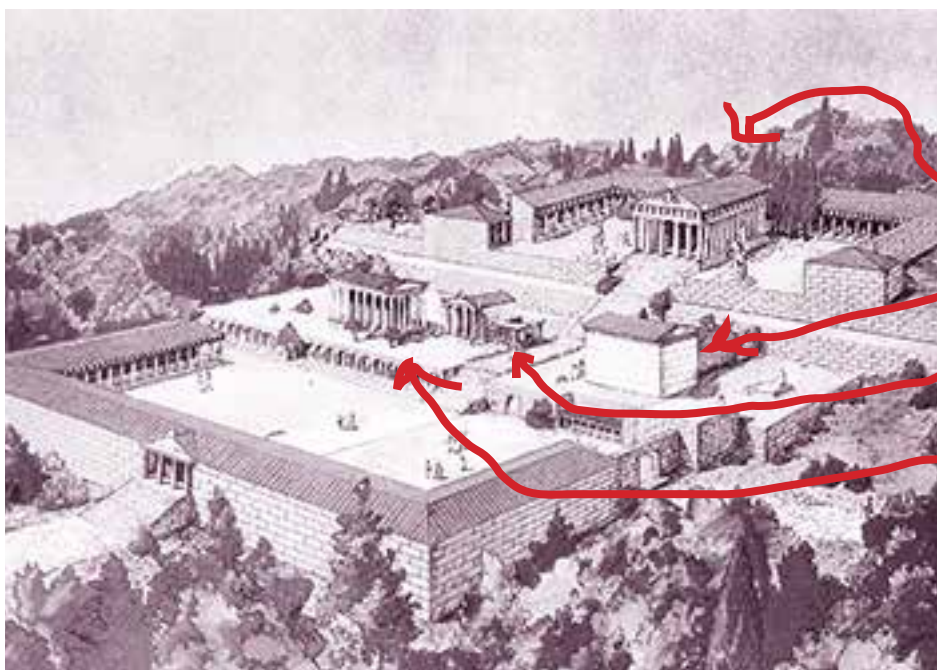
An important point here is not to over-determine the languages of divine worship in these shrines dedicated to healing nor to assume they existed solely within religious rituals. The pan-Hellenic Asclepian cult provided welfare and care according to a social ideology that was not directly linked to any one particular religious cult. The tenets of philanthropy – providing food to the hungry, a refuge for the homeless, shelter for travelers, and beds for the sick – were principles adapted as much by the evolving medical discipline as by advocates

of Judeo-Christian moral duties. In fact the very rituals of care practiced by Asclepiads are notable for relying less on prayer than rationalized care, acts that – while beginning to be separated by space – were not mutually exclusive. Simultaneously, the population in the ancient world worshipped gods, dreamt in temples, and followed health regimens as spelled out in the rational writings of Hippocrates. Such a seemingly varied set of beliefs and practices has been characterized as expressions of the “polarizing mind” of the Greeks, though as Cicero said, “few patients owe their lives to Asclepius rather than Hippocrates.” [3]



Figs 4 & 5: Google earth view of Pergamum’s Sanctuary of Asclepius, or Asclepieion, on the outskirts of modern Bergama, in western Turkey.





Large Temple of Asclepius

Small Temple of Asclepius

Alter of Asclepius

Temple of Apollo



Figs 6 & 7: Top, rendition of an Asklepieion on Kos, a Greek island off the Anatolian coast of Turkey. Built in 357 BCE, the sanctuary was one of the main seats of the Asklepiadai, supposed descendants of Asclepius, who were a hereditary order of priests and guardians of the secrets of medicine. The rich court physician Xenophon (who helped to poison the Emperor Claudius), on his return to Kos, lavished the sanctuary with statues he had collected in Rome. In the sixth century, all was overwhelmed, either by an earthquake or in 554 when Anatolian hordes ravaged the island. The Knights of St. John used the ruins as a quarry. Below, a modern tourist attraction of its ruins (Wikipedia photo).

Certainly the church has historically brought a powerful organizational structure to institutions of healthcare. Religion's philanthropic commitments have created spaces in which the poor and impoverished are helped. In the fourth century, the Syrian church – reacting to a vacuum left by the impoverishment of the local municipal government strained by surges in population growth – organized relief programs

around *xenodocheia*, the name for hostels reserved for the poor. *Xeno* means traveler or foreigner, *docheion* means place of reception. Translated into what we commonly refer to as hostels, *xenodocheia* grew to undertake care of the sick, the homeless, widows, and orphans. [4] Appearing in every city of the Empire from early encouragement by Pope Gregory I (“Gregory the Great,” ca. 540 - 604) and administered by bishops,

throughout the Middle Ages the *xenodocheia* complemented the monastic system of poor relief, where monasteries facilitated physicians for the sick and redistributed resources accumulated by monks.

Fig 8: Albucahis (Al-Zahwari) blistering a patient in the hospital at Cordova, 1100 AD.





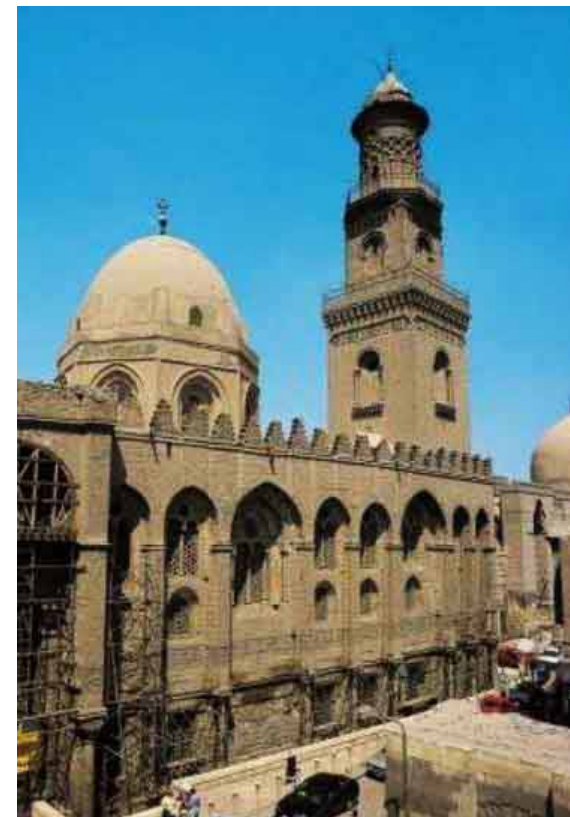
## From Hospitality to Hospitalization

The very etymology of the word hospital reinforces the emphasis on physical recovery and welfare that came to dominate its history, and is suggestive of its origins in xenodocheia. Today we don't usually think of "hospitality" in regard to hospitals. We reserve that for hotels, a hostelry, or, minimally, a hostel. Yet hospitals, and likewise hospices, as well as these other venues, derive from the Latin stem *hospes*, from whence the monastic term *hospitium* or *hospitalis domus*. Medieval French turned *hospitium* into *hospice*, and then English turned it into *hospital*. But over the course of its linguistic evolution, "it" – the place of rest and recovery – also adapted specialized functions depending on what sort of guest it had. Thus friends will *host* friends, hotels with receive guests, and hospitals treat patients (from the Latin participle *patiens*, meaning suffering; the word patient historically meant someone suffering—not necessarily the case today).

Over the course of the next eight hundred years, hospitals not only provided care specifically for the sick (as opposed to tired travelers or the

destitute), but began dividing space and service according to different types of illness. The concept for this relates back to an Islamic hospital built in Cairo, Egypt, in 1283 by al-Mansur Gilafun:

Every class of patient was accorded separate accommodation: the four halls of the hospital were set apart for those with fever and similar complaints; one part of the building was reserved for eye-patients, one for the wounded, one for those suffering from diarrhea, one for women; a room for convalescents was divided into two parts, one for men and one for women. Water was laid on to all these departments. One room was set apart for cooking food, preparing medicine and cooking syrups, another for the compounding of confections, balsams, eye-salves, etc. The head-physician had an apartment to himself wherein he delivered medical lectures. The number of patients was unlimited, every sick or poor person who came found admittance, nor was the duration of his stay restricted, and even those who were sick at home were supplied with every necessity. [5]



Figs 9 & 10: Al-Mansuri Hospital in Cairo, Egypt. Photographic image from Museum Without Frontiers.

The charitable mission that tied religious beneficence to the medieval origins of hospitals remained a dominant force in the maintenance of such institutions until the nineteenth century. From the time of the founding of the first hospital in the city of Paris in 651 – the Hôtel-Dieu – until it mostly burned down in 1772 (rebuilt thirty years later), medical care was driven by what historian Colin Jones called “the charitable imperative.” [6] However, after the French Revolution of 1789, when religious faith in divine healing was less persuasive and the government lent its efforts to medical reform, a medical marketplace emerged that relied less on endowments and donations and more on state support (particularly for military

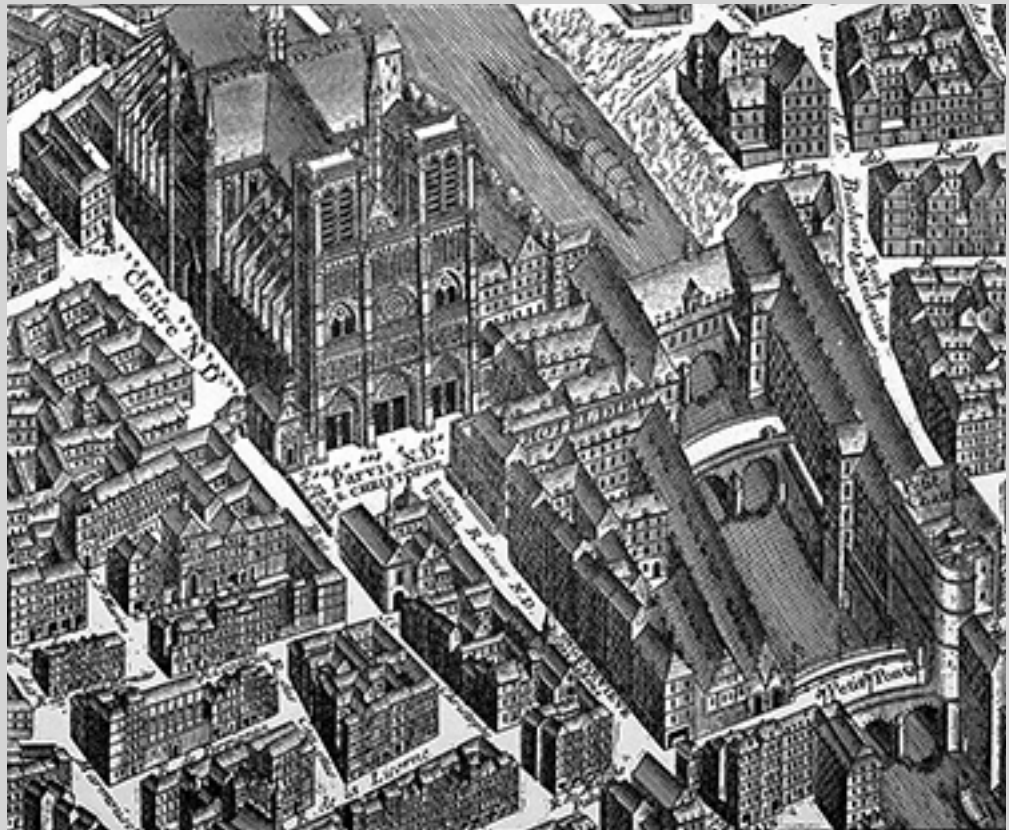


Fig. 11: Aerial view of Hôtel-Dieu next to the Notre Dame Cathedral in Paris, depicted before its destruction by fire in 1772. Originally built around 650 CE, the “Hostel of God” is one of the oldest institutions in Europe for the care of the poor and sick. In 1580 it was established that physicians would tend to patients twice a week, leading to the development of regular medical house staff. By the end of the eighteenth century, Paris was the largest city in the European continent, but overcrowding and unhygienic conditions created an alarming mortality rate. The French Revolution, beginning in 1789, deposed the monarchy and displaced the function of the church in hospital duties.



Fig. 12: Religious nursing orders at the wards of Hôtel-Dieu. The French revolutionaries converted religious buildings into more wards and expelled the Augustinians (a Catholic religious order), dispossessed the Brothers, and dispersed the Sisters of Charity. Nurses, traditionally organized through religious orders, saw their lives, vocations, and notions of hospital management radically change. The Hôtel-Dieu, and some twenty other city hospitals, grew under the professionalized management of a new medical order. [10]



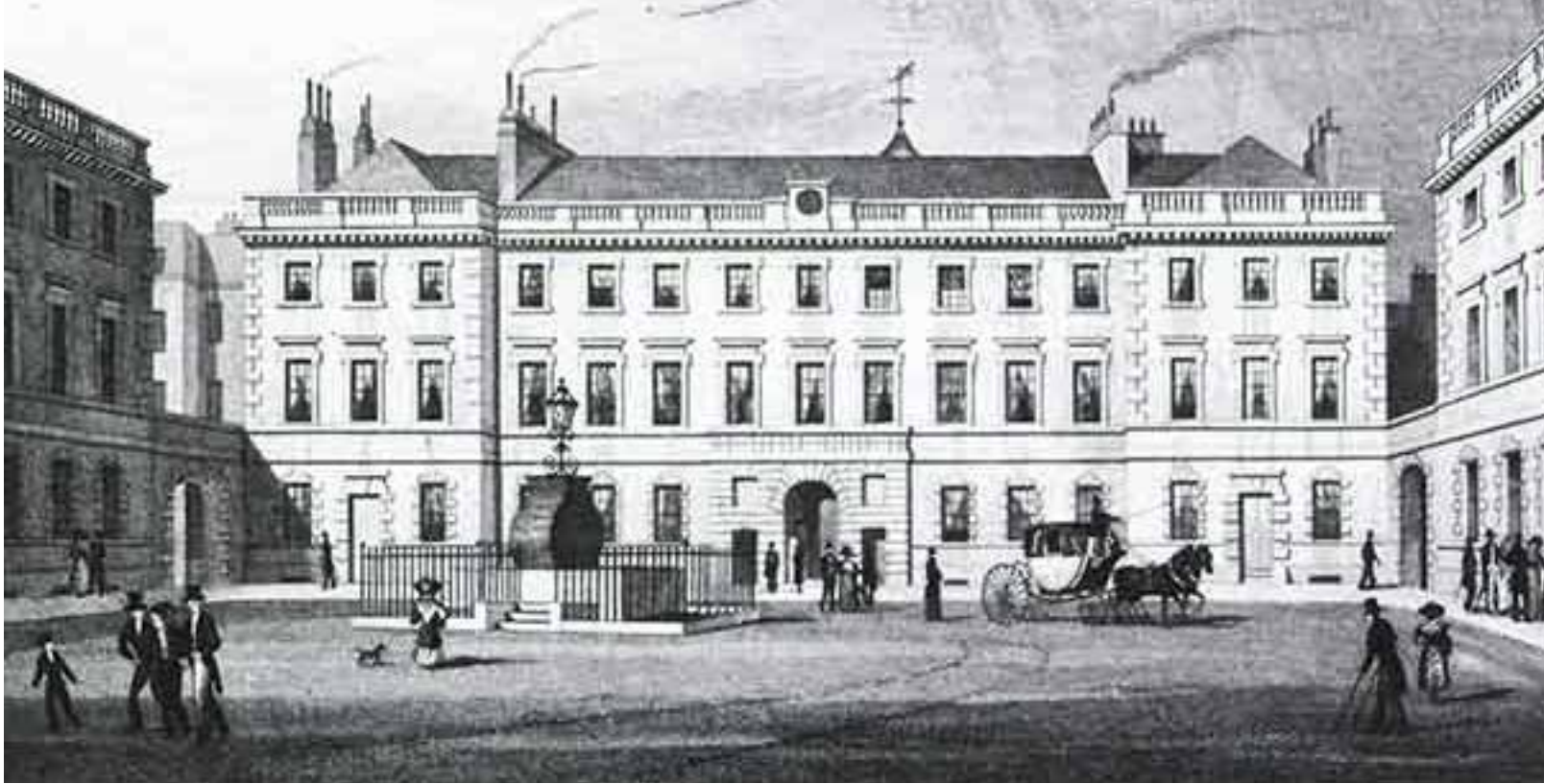


Fig. 13: St. Bartholomew's Hospital, the oldest hospital in Britain, founded in 1123, and which today remains on the original site. The Great Hall and other wings were built in the 1730s and 1740s.

hospitals) and paid services.

In England, few hospitals exist today that can trace their brick and mortar origins to medieval times. Monastic institutions and lazarettoes (hospitals that cared for leprosy patients until its decline in the fifteenth century) were dissolved by Henry VIII, with the exception of St. Bartholomew's and St. Thomas's hospitals in London which survived through special petition. After the Reformation (when the Church of England was formed as an alternative to the Catholic Church), institutionalized health-care was scant. Even the existing few secular hospitals in London were very small, accommodating a few hundred patients—a mere gesture to serve a population that reached 200,000 by 1600. However, the

medical profession itself received a boost when Henry VIII chartered the College of Physicians in London in 1518 (becoming known as the “Royal College” under Charles II)—a board that controlled examinations, licensing, and governing practice in London.

Justices of the Peace were empowered to raise compulsory funds for the relief of the poor, a group defined in two ways. First, anyone who was too young, ill, or too old to work, but otherwise could, were the “deserving poor” and were cared for in almshouses or sent to the “poor house” – a Dickensian facility providing housing to down-trodden. In the United States such “workhouses” were on farms where residents were put to work. Second, those who were able-bodied but did

not work were the “idle poor” and were whipped publicly in streets. In 1601 the Elizabethan Poor Law was passed which imposed a tax that would raise funds to support the institutionalization of the deserving poor.

After Henry VIII turned Britain toward a Protestant future, the charitable conscience shifted away from organized and centralized church functions and into local parish and municipal government concern. Consequently, particularly beginning in the eighteenth century, local communities rallied support to establish general hospitals to care for the “sick and lame” as an alternative to the Poor House. Through philanthropic contributions that created what historian Keir Waddington called the “benevolent economy,”

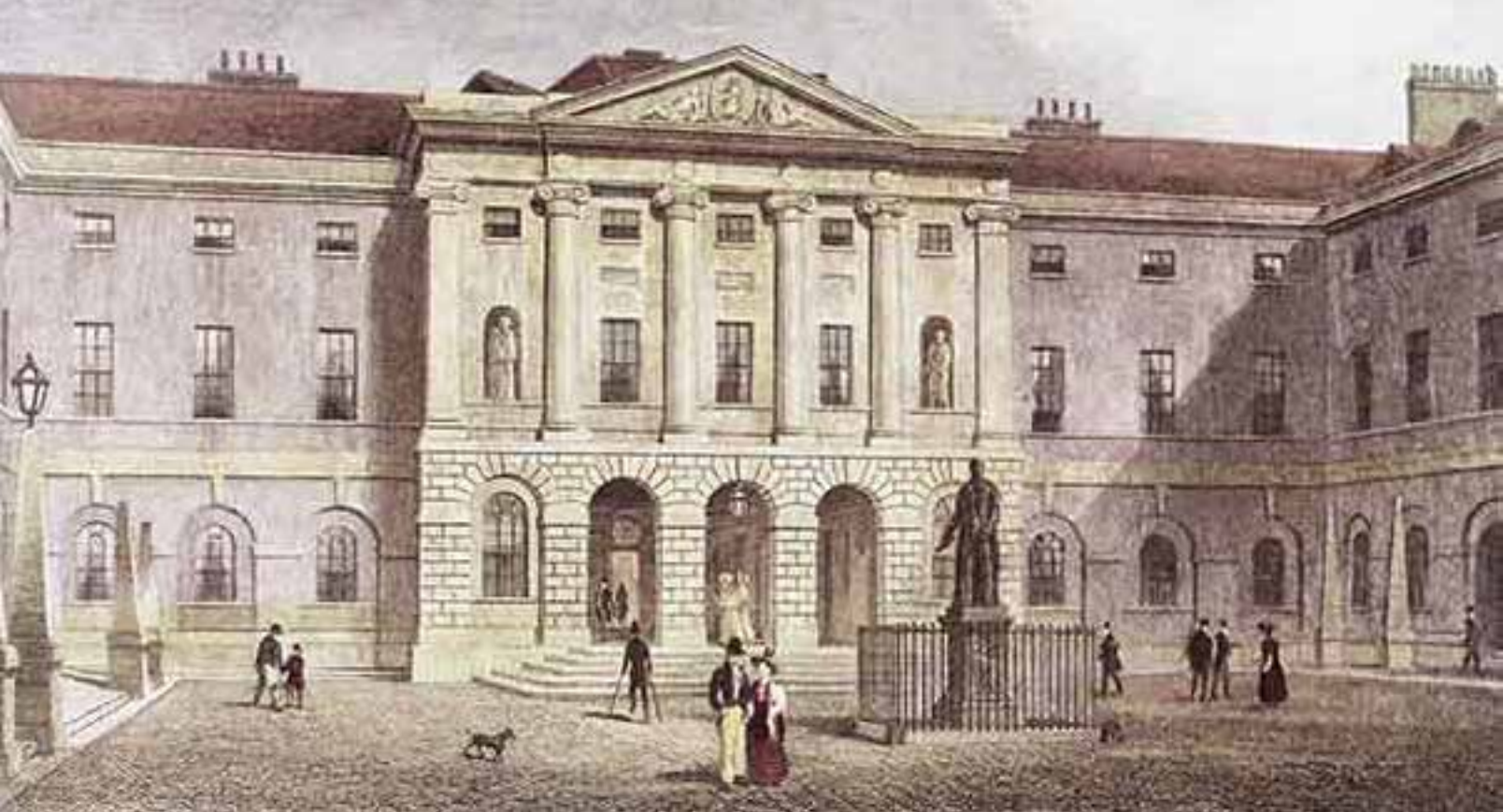


Fig. 14: Guy's Hospital, founded in 1721 by Thomas Guy, a publisher of unlicensed bibles and illicit stock investor. Exterior view of main entrance with the statue of the hospital's founder by Scheemakers.

*voluntary hospitals* multiplied, establishing Guy's Hospital and the Westminster in London, the Edinburgh Royal Infirmary in Scotland, and, more provincially, Addenbrooke's Hospital in Cambridge and the Bristol Royal Infirmary. [7] Later in the eighteenth century, spurred by concerns over factory workers' health in the heyday of the Industrial Revolution, hospitals were founded in northern cities such as Manchester, Birmingham, and Glasgow. [8]

Similar voluntary, philanthropic, and Evangelical initiatives led to the creation of specialist hospitals devoted to maternity care, orthopaedics, eye, and ENT (ear, nose, and throat) medicine. Appalled by

the inhumane treatment of infants left abandoned on the docks of London by destitute families, the shipbuilder and successful merchant Captain Thomas Coram funded the establishment of London's first Foundling Hospital in 1739, which, in an act of prescient entrepreneurship, raised additional money through charity concerts offered by Handel and an hosted a gallery with works by artists such as Hogarth. In 1843, the Hospital for Women in Soho Square became the first gynecological hospital in London, specially prepared for the "delicacy of treatment" and "nervous sensibility" of women patients. [9] While special hospitals for women and children were justified

largely through social ideologies of biological differences and special needs, other facilities driven by scientific developments caused many defenders of general practice to criticize the narrow approach to disease they fostered, accusing specialists of breaking the body into pieces and into disease fragments at the expense of treating the whole person.

The creation and administration of specialized hospitals spurred tensions between the different stakeholders who supported them. Questions of who controlled the type and quality of practice – the physicians, the nurses, the wealthy patrons, the politicians, or the board of governors – often led to



## Establishing Specialist Hospitals

Fig. 15: Engraving designed by William Hogarth depicting the Foundling Hospital, a home for abandoned children. Founded in 1739 by marine captain Thomas Coram. At that time, mortality rates were extremely high: 74% of children born in London died before age 5. This institution accepted all children and is a product of what Hogarth called "the golden age of English philanthropy."



Fig. 16: The Hospital for Women, Soho Square, London. Established in 1843 through public membership subscription, where donors were permitted to recommend a certain number of patients for admission and care free of charge. In 1869, a new wing was opened by Princess Mary Adelaide to accommodate patients who could afford to contribute towards the cost of their maintenance and treatment, and in 1877, when a system of training nurses was established in the Hospital.



Fig. 17: The Hospital at Bethlem (Royal Bethlem) at Moorfields, London. First built in 1247 as the Priory of the New Order of St Mary of Bethlem. Originally a base for passing church ecclesiastics, the first record of admission of psychiatric patients was in 1403, and later, in 1436, it sought donations for the "sick and insane." Moving to its location at Moorfields in the seventeenth century, it became principally associated with care for the mentally ill, and the moniker "Bedlam," a medieval morphing of Bethlem, became a general reference to "madhouse." The hospital was moved to Lambeth, London, in 1815.

# Hospitals and the Environment of Disease

Given the long history of hospitals as privileged sites for the care of patients, one could reasonably ask if there was ever any perceived problem with gathering all the sick in one place. Today, nosocomial infections, or healthcare-associated infections (HAIs), are a recognized problem by the Centers for Disease Control and Prevention, which produced a study showing that 1 in 25 hospital patients required inpatient

antimicrobial drugs to deal with infections acquired on site. Our understanding of these infections is based on our knowledge of bacteria and microorganisms, and how drug-resistant gram-negative bacteria harm immune-compromised patients.

But taking the historical view, understanding infectious disease as a result of bacteriological or virological spread is relatively recent – stemming from late

nineteenth-century laboratory investigations represented in the pioneering work of scientists such as Louis Pasteur and Robert Koch. But before this, assumptions about disease causation referred to environmental conditions, such as bad air, “miasma,” or a broad concept of “contagion.” The idea that the air itself might become bad, putrid, or “fetid,” and make people sick, stretches back to antiquity, with a famous work in the Hippocratic

Plan No. II.

GROUND PLAN OF THE SOUTH EASTERN WING  
OF THE  
**ROYAL VICTORIA HOSPITAL, NETLEY.**  
SHOWING ONE SIDE OF EACH WARD COVERED BY AN EXTERNAL CORRIDOR.

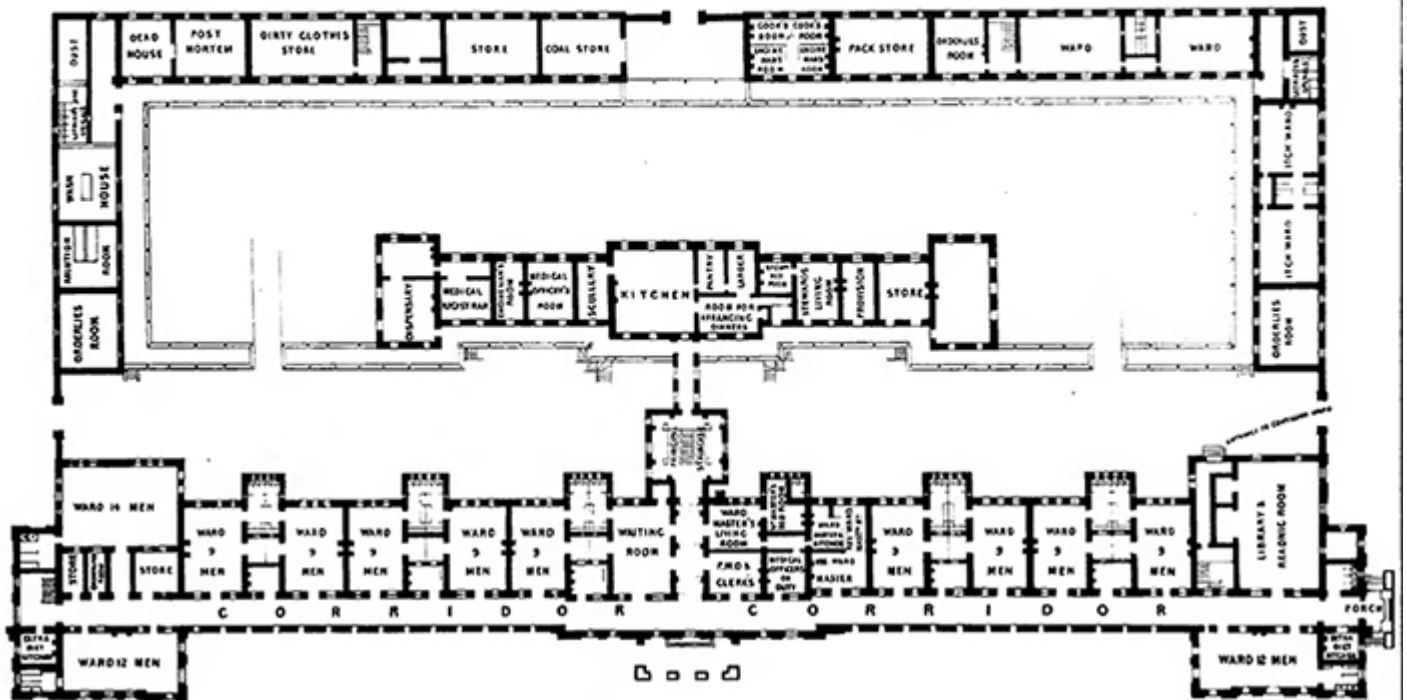


Fig. 18A: Hospital Plan from Florence Nightgale's *Notes on Hospitals*



corpus called “Airs, Waters, Places.” Disease (dis-ease), particularly with symptoms expressive of pulmonary disorders, was often attributed to bad air. Sometimes the therapy for the patient was traveling away from the source of bad air, away from an urban environment, swamplands, fens, or hot and humid regions. This all seems quite vague, but in the eighteenth century instruments were developed that purportedly measured the “goodness” of air, something discussed more thoroughly in the module as part of this series on “lungs.” But two developments emerged as a result of medical interest in good and bad airs that are relevant to the history of hospitals.

First, given the idea that air itself might become bad, the concern about the quality of hospital air emerged. As a public health exercise, chemists and physicians studied the quality of air in institutions and warned of its possible effects on patients. In France in the 1770s, Antoine Lavoisier – famous for having identified the chemical properties of atmospheric air and giving us the terms “oxygen” and “hydrogen” among others – took air samples from hospitals using an instrument called a eudiometer. As a result, he drew up recommendations for hospital ventilation and advised on plans for rebuilding the Hôtel-Dieu. Shortly after Lavoisier’s experiments, more research was



Fig. 18B: TB patients at Adirondack Cottage Sanitarium, Saranac Lake

undertaken in Britain to see if the chemical properties of different kinds of air had medicinal qualities for sufferers of lung disease. In the late eighteenth century, tuberculosis – then called “consumption” in reference to the way the disease consumed the patient, extinguishing life – was a leading cause of death across Europe and America. One physician, Thomas Beddoes, established a “Pneumatic Institute” where patients were treated with the administration of air (particularly nitrous oxide) dispensed through carefully prepared balloons. Yet the very idea of bringing consumptive patients together in one place alarmed contemporaries who thought that the air would become contaminated and foster disease.

For the next hundred years, hospital architecture (as well as the

construction of other institutions of close quarters including schools and prisons) accommodated airflow and ventilation. However despite these early interests, inconsistent public health policy and weak support for hospital development led to many examples of overcrowding and poor sanitation. Addressing this in 1859, Florence Nightingale published *Notes on Hospitals*, an influential tract on the importance of hospital architecture to the care of patients. With regard to tuberculosis patients, special hospitals were constructed called “sanatoria,” which were built in geographical areas like the Swiss Alps, the Rocky Mountains in Colorado, or the Adirondacks in upstate New York, where the high altitude air was considered pure and salubrious.

An interesting feature of sanatoria

was that their function bridged the transition between pre- and post-bacteriological science. Sanatoria established throughout Germany beginning in the mid nineteenth century, for example, had physicians who enthusiastically embraced a new treatment for tuberculosis put forward by their compatriot Robert Koch, a German physician who gained immense prestige in 1892 as the discoverer of the mycobacterium tuberculosis. Koch's original tuberculin was a glycerin extract of the tubercle bacilli and offered as a remedy that was widely applied to patients without clinical trials. Its ineffectiveness was an immediate blow to the new science of bacteriology and led to popular movements to expand sanatoria to encourage convalescence and open-air therapy. [33] Eventually organizational and structural problems with these hospitals which were understaffed and poorly equipped earned them a bad reputation and in the mid-twentieth century were portrayed as dehumanizing institutions akin to coercive asylums or prisons, leading to their demise. [34]

## Women's (and Children's) Hospitals

The sanatorium, sometimes thought of more as a 'resort' than a hospital, was unique both because its geographical location was considered important to support the health of the patients and because they concentrated specifically on one disease, tuberculosis. But throughout the nineteenth century, other specialist hospitals were established focuses on particular diseases, such as urology, ophthalmology, mental health, and orthopedics. In London alone, over 80 specialist hospitals were founded between 1800 and 1900, although not always with the approbation of the whole medical profession, some of whom saw the narrowing of services as reductionist and overly commercialized. Still other





hospitals were established which provided healthcare to patients who were otherwise excluded from services provided by voluntary (philanthropic) hospitals because their healthcare needs were morally objectionable, such as treating venereal disease, or not “medical,” such as childbirth. Hospitals for women fell into a category of specialized practice that was created in part because of perceived uniqueness of women’s health. It was within women’s hospitals that the specialist practice of gynecology developed.

Maternity hospitals, called “lying-in hospitals” in the early nineteenth century, first appeared in America with the founding of the Boston Lying-In Hospital (1832, an antecedent of the Brigham and Women’s Hospital). The first specialist women’s hospital in Britain was the Hospital for the Diseases of Women established in London in 1842. Their credibility and social acceptance was linked to the increased physician staffing fulfilling requirements to provide hospital service for licensing. After the introduction of anesthesiology in the 1840s, more surgical interventions were worked into the formal hospital setting, further solidifying their role in providing service to a wider population, not only the “deserving poor.” Founded through

the efforts of Dr. Protheroe Smith, the original rented building offered two wards and eleven beds. During its first operational year, it admitted twenty-eight in-patients and seventy out-patients. [35] Seeing a need to expand, Smith attempted to raise philanthropic support but the reference to Diseases of Women in the name evoked venereal disease and prostitution in the minds of the public, and so the name was changed to Hospital for Women.

The founding of additional women’s hospitals in Europe was in large measure justified on the basis of the sanitary conditions they offered for surgical procedures. Therefore the history of hospitals is closely tied with contemporary developments in medical practice (such as obstetrical surgery) and medical theory (regarding “germs” as causes of disease). To be sure, a detailed history of hospitals reveals differences of opinion within the medical establishment about appropriate techniques and theories, and even of the idea that hospitals were sanitary and safe (mortality rates were closely examined and hospitals received substantial criticism for them).

Another example of how hospital architecture changed in response to emerging medical theories of health-care is linked to the development of

the “women’s and children’s hospitals” as specialized sites. In the late nineteenth century, when obstetrics and gynecology had strengthened the idea that the hospital was the proper place for child delivery, newborns were put into glass “isolation cubicles” to protect them from germs. In the first few decades of the twentieth century, however, new theories regarding childhood development were advanced that stressed the importance of mother-child bonding and social interaction. Thus playrooms were provided in wards for hospitalized children (one of the first being in Buffalo, New York, in 1911). By the 1950s, recommendations were made that wards should be designed to accommodate admitting the mother to the hospital with the child, limiting any isolation or separation. The evolution of the “women’s and children’s hospital” commenced, with examples like the New York Infirmary for Indigent Women and Children in 1857 (founded by Elizabeth Blackwell, the first woman to receive a medical degree in the US), and the New England Hospital for Women and Children (Boston, 1862), which pioneered the training of nurses and female physicians. [36]

Fig. 19: The New Hospital for Women, Euston Road, London, f. 1890 by Elizabeth Garrett Anderson.

Fig. 20: Rudolf Virchow (center, with beard) observing an operation on the skull in a Paris Clinic, 1900.



## The Birth of the Clinic

Many terms in English vocabulary possess a semantic history whose exploration uncovers little-known nuances. Modern usage of the term 'clinic' often refers to a physical space, whether a class or a specialized medical institution, but almost five hundred years ago, 'clinic' referred only to a person; more specifically, an ill or bed-ridden individual. Etymology informs that 'clinic' is derived from the Latin "clanicus," which is derived from the Greek word (klinikos), which relates to a bed. Jeremy Taylor, in a seventeenth-century religious text, clearly defines the term 'clinic' as a noun, meaning a person with an illness. The term surfaces over two hundred years after Taylor's text in a fictional novel set in England. In this narrative, a physiologist, during conversation with dressers, refers to "the bodies of any of [his] clinics." So by the late nineteenth century, the term still applied to sick people, but specifically, as patients. During this time period, however, usage of the term 'clinic' starts to become noticeably interchangeable between

patients and the medical spaces they might occupy.

During the mid-to-late nineteenth century, instances of the term 'clinic' in medical journals increase exponentially. Within these texts, 'clinic' operates in two ways. First, 'clinic' refers to the process of teaching medicine or to the class of students whom follow a medical instructor. This allusion to teaching is retained today in, for example, sports, where something like a "golf clinic" refers to demonstration of technique to students. 'Clinic' also refers to the physical space where that particular medical instruction occurs.

By the late nineteenth century, some medical clinics featured sophisticated spaces for teaching medical students. Other clinics during this period kept records and published their findings in student handbooks in an effort to further educate medical students. Sir William Osler, in his *The Principles and Practice of Medicine*, repeatedly refers to findings and observations made at both his clinic

and the clinics of doctors with whom he kept a correspondence.

The Mayo Clinic offers a prominent example of how the term 'clinic' operates today. While the non-profit organization started as William Worrall Mayo's small private practice in the mid-nineteenth century, today the Mayo Clinic operates through the collaboration of over 55,000 physicians, nurses, students, scientists and other associated health staff. Their mission is "to inspire hope and contribute to health and well-being by providing the best care to every patient through integrated clinical practice, education and research." Far from the seventeenth-century meaning of a bed-ridden, sick person, and even further from the Greek definition that evokes a bed, today's usage of the term 'clinic' reflects necessary semantic negotiations that occurred concurrently with the establishment of medical spaces for treating and learning how to treat illness.

– Contributed by Sara Robertson



conflict in hospital administration. [11] Philanthropy, while literally referring to the love of humanity, does not always breed humility.

The politics of healthcare as well as social conscience influenced the shaping of institutionalized healthcare. Patrician patrons left it to the state to run asylums for psychiatric patients. Bethlem Hospital (a.k.a. “Bedlam”) was one of the oldest hospitals in London, privately founded in the thirteenth century as the priory of St. Mary’s of Bethlehem, and became one example of state-funded support

for “distraught and lunatic people.” The stigmatism of mental illness, thought by medical theory at this time to be a moral disorder, encouraged “polite society” (the wealthy) to steer clear of hospitals of this sort.

In the 1890s voluntary hospitals contained about 26% of all hospital beds, rising to a little more than a third by 1938, with 20% provided through the Poor Law, and 47% through local government. [12] In the 1930s and 1940s, the ideal of comprehensive, universal healthcare gained support, leading to the reform of the British health services.

The crisis brought about from World War II forced an extension of government control of hospitals, increasingly unable to rely on charitable contributions, and the Labour party’s victory in government in 1945 allowed for sweeping reform. Aneurin Bevan’s National Health Service Acts brought the voluntary hospitals into public ownership and altered the course of the history of hospitals, as well as healthcare, in Britain. [13]

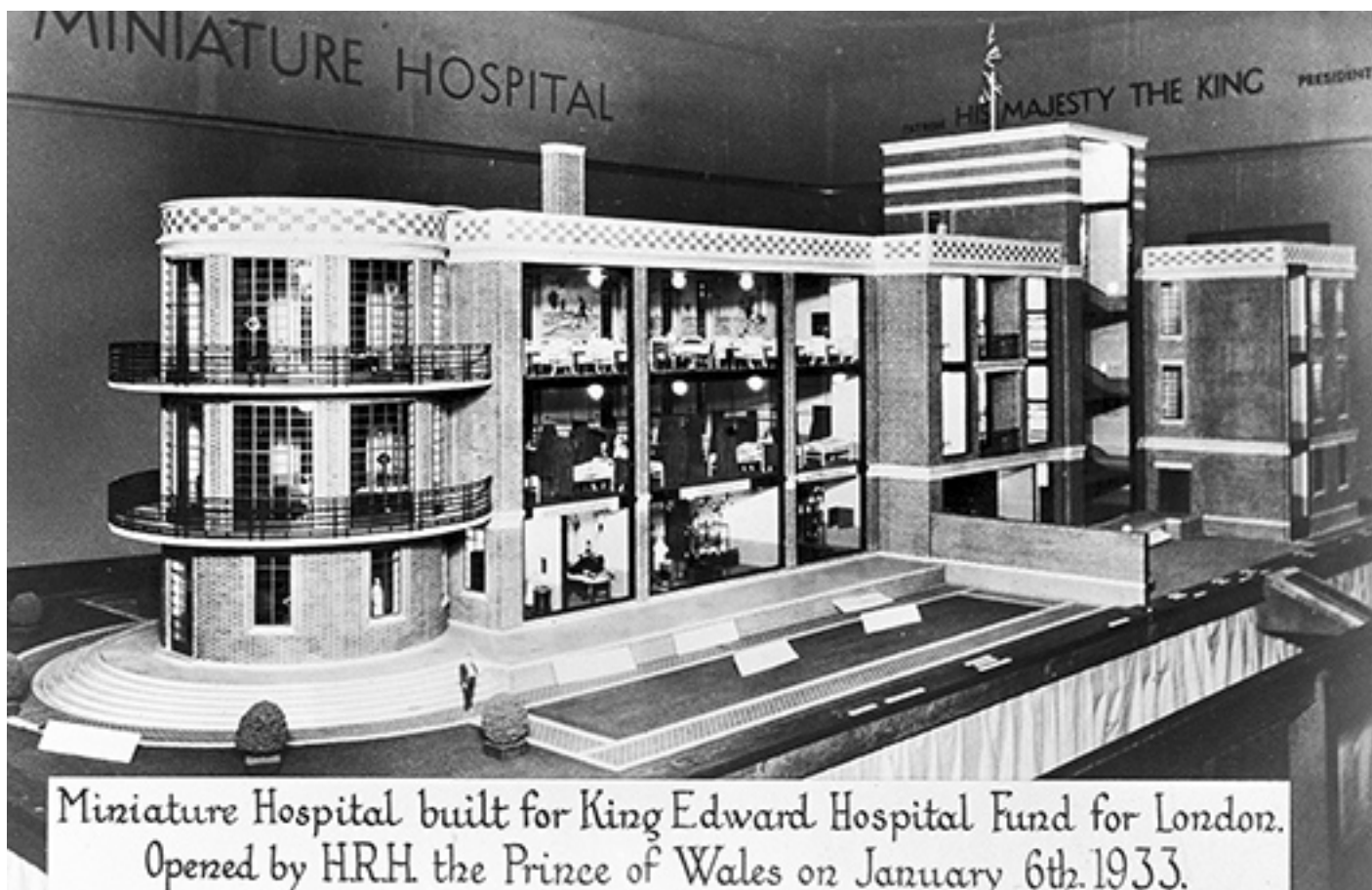
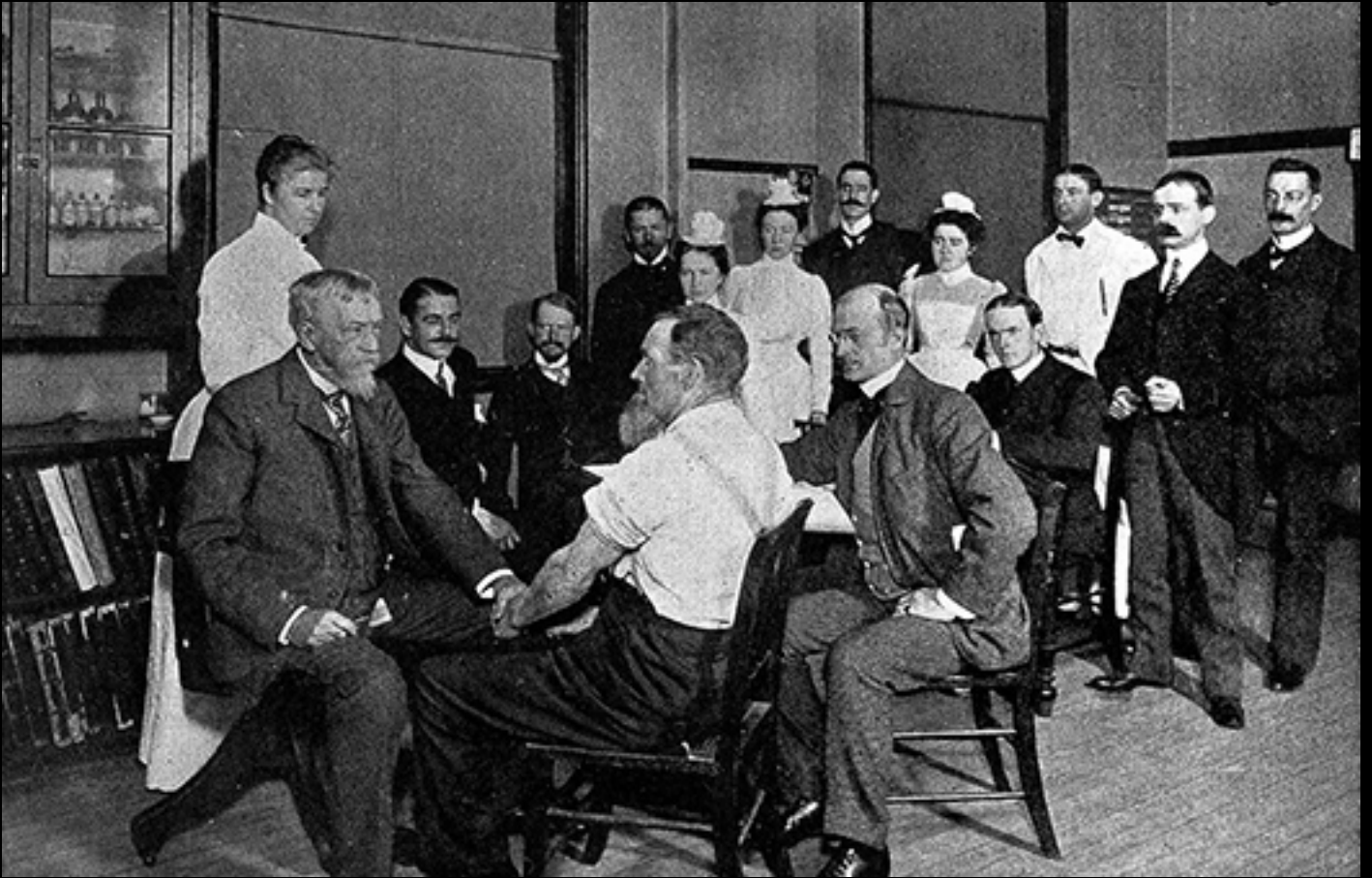


Fig. 21: A Model of a Modern Hospital, 1833.

# Teaching Hospitals



The legacy of voluntary hospitals is notable for being the place where most medical education in Britain was first developed. Prior to the emergence of voluntary hospitals, medical training was largely based on apprenticeship. Apothecaries were required to spend five years as indentured pupils while surgeons often served as “mates” in the Army. Physicians pursued a different path. They were required to graduate with a degree in the arts and learn classical scholarship so they could read Galen. The two oldest universities in England, Oxford and Cambridge, offered medical degrees to students for a graduating fee, without requiring any practical training. Universities in continental Europe, however, pioneered a new way to learn medicine.



Early in the eighteenth century, Hermann Boerhaave, known as “the medical instructor of Europe,” introduced clinical instruction. Students were taken to two wards in a local charity hospital, using selected patients as case presentations. In 1770, the medical school in Vienna followed suit, when hospital reforms provided space for trainees to “walk the wards.”

Edinburgh University was Britain’s response to modern medical education, introducing rigorous scientific instruction in chemistry, botany, and anatomy—with chemistry experiments and cadaver dissection leading to increased popularity among students, admitting as many as 200 students a year in classes. [14] Edinburgh also provided clinical instruction, though interestingly only a third of enrolled students pursued this aspect of training, foreshadowing a diminishing

interest in clinical as opposed to scientific pursuits that led to clinical medicine to lag proportionately behind population growth in the nineteenth century. [15]

Until the nineteenth century, private anatomy theaters and certain hospital surgeons in London provided the extent of medical instruction. While devoid

**“It was only in the hospital that the three pillars of the new medicine – physical examination, autopsy, and statistics – could be developed.”**

– Historian Erwin Ackerknecht

of a university until University College was established in London in 1826, which began offering medical courses in 1834, hospitals were the first to introduce clinical education to aspiring physicians. Between 1725 and 1815, nearly 12,000 pupils had registered to attend hospital wards and follow practitioners on rounds. [16]

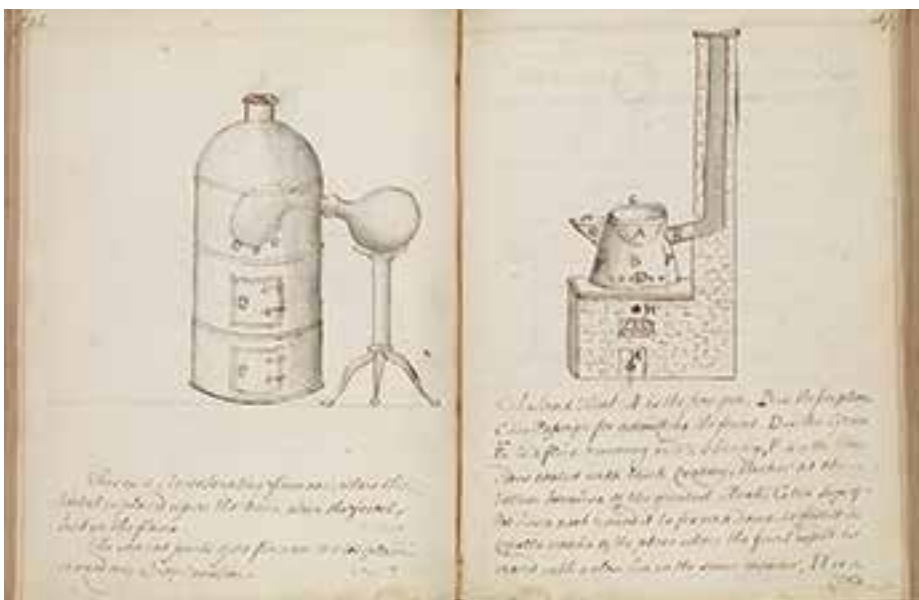
Hospitals played a pivotal role in

medical training in Paris, however, modernizing medical practice by inventing what the historian Erwin Ackerknecht called “hospital medicine.” Clinicians in the Paris hospital system saw a unique opportunity for rapid clinical observation and experimentation among a critical mass of patients—all in one building, representing a sample of a diverse urban population. As he put it, “it was only in the hospital that the three pillars of the new

medicine – physical examination, autopsy, and statistics – could be developed.” [17] Furthermore, as the sociologist Ivan Waddington suggests, the Paris hospitals also forged a new form of doctor-patient relationship. Unlike the eighteenth century when a class of patrician patients manipulated the “medical marketplace” and demanded desired goods and services from their physicians, patients were now passive, somewhat powerless, subjects in the system, laid bare for group examination and experimental treatment. It created a new structure of “client control.” [18]

Fig. 22 (opposite): S. Weir Mitchell examining a Civil War veteran at the Clinic of the Orthopaedic Hospital, Philadelphia, 1929.

Fig. 23: Lecture notes from an Edinburgh University student attending William Cullen’s chemistry class.





## BATTLEFIELD MEDICINE

All wars bring injury and disease, to both civilians and combatants. Throughout history, societies have dealt differently with the challenge of providing care at or near the front lines of battle. The chosen arrangements generally reflect the economics of the armed forces, military and medical technology, and prevailing medical and social norms. This paper is focused on care delivered at or near the front lines of battle, though military hospitals and

clinics also provide care to enlisted men and women in other venues and during times of peace. [19]

During the Bronze and Iron Ages, armies and weaponry became increasingly vast and complex. Armies traveled with animals, including horses and elephants, which also required medical attention. Poor nutrition and exposure to extreme temperatures compounded the effects of injury and illness. Though few written records of early battlefield medicine remain,

Egyptian papyri discuss measures taken to contain dysentery, and there is some evidence that Assyrian military manuals also contain instructions meant to limit the spread of infectious disease. The Greek *Iliad* and *Odyssey* both also describe wound management on the battlefield, delivered by specially trained soldiers.

As armies became increasingly formalized and the use of temporary mercenaries declined, battlefield medicine was similarly transformed.



During the reign of Emperor Augustus (27 BC-14 AD), the Roman Army began to offer comprehensive medical care to soldiers, as part of a larger effort at recruitment and professionalization. As Guenter Risse explains, “Care in a *valetudinarium* [institution for the care of sick and wounded soldiers] was part of the bargain struck between the emperor and military rookies,” especially in the northern reaches of the empire. [20] In the construction of the *valetudinaria* attention was paid to clean water, quiet, and cleanliness; the architecture was standardized by the 70s AD. Care was provided both by trained professionals and by some fellow soldiers with basic first aid skills. Army service provided an opportunity for young men to train

as physicians.

At various times throughout history, war and wartime medicine have also catalyzed change in the larger medical culture. Conditions at Scutari, a large field hospital serving British troops during the Crimean War (1853-1856), impelled many reforms which later became the norm for hospital sanitation and patient care. These were implemented and later popularized by Florence Nightingale, the British nurse and reformer. Nightingale and her nurses improved nutrition, ventilation, sanitation, and careful administration and record-keeping, all of which contributed to lowering rates of infection and death at the hospital.

War technology affects the nature and volume of the care that must be delivered at the battlefield. The changing weaponry of the nineteenth century brought with it new and graver types of injuries. During the War of 1812 (1812-1815) and the Napoleonic Wars (1803–1815), early amputation, even at the front, was common. However, heavier rifle shot introduced during the American Civil War (1861-1865) meant that wound shock was more likely. Amputations were often therefore delayed, but additional

surgeons and support personnel were needed at the front to stabilize wounds. General anesthesia also became more common. These factors resulted in a considerable expansion of the medical capabilities on both the Union and Confederate sides. Clara Barton, who would later found the American Red Cross, was a battlefield volunteer, bringing food, comfort, and supplies to wounded troops. Novelist Louisa May Alcott and poet Walt Whitman also famously served as Civil War nurses and would later chronicle their experiences for contemporary and future readers.

No war better exhibits the complex interplay of military and medical technology than World War I. During this war, the machine gun, poison gas, bombs, and aircraft carriers affected the numbers and types of wounds suffered by soldiers. These weapons as well as dispersing battle to a wider spread of locations. Influenza and sexually transmitted infections contributed to much morbidity and mortality among soldiers. Conversely, however, the war served to facilitate the refinement and dissemination of wound debridement techniques, topical antiseptics, and imaging technologies like the roentgenogram.



Fig. 24 (Opposite page): Union Soldiers in a Hospital during the Civil War.

Fig. 25: Florence Nightingale with her candle making the night round of the wards at Scutari hospital during the Crimean War, 1855.

Developments in medical therapeutics can have a profound impact on the health and survival of soldiers. The availability of antibiotics and the enforcement of hygienic procedures like handwashing lowered the ratio of soldiers dying from infectious disease from 1 in 4 during World War I to 1 in 10 during World War II. [21] Faster modes of transportation also meant that more soldiers could be transported to more centralized and better-equipped military hospitals for treatment.

The popular image of the field hospital was indelibly shaped by the 1968 novel *M\*A\*S\*H* by Richard Hooker, which was later adapted into a movie and a sitcom. By placing care in tents rather than in buildings, Mobile Army Surgical Hospitals, were designed to bring physicians, surgeons, and nurses closer to the front lines than they had been during World War II.

As present-day warfare has become increasingly decentralized and noncombatants less protected, the role of medical personnel has

changed. According to a report on the website of Doctors Without Borders, clandestine facilities in Syria, for example, have been set up in caves, homes, farms, and bunkers. Tunnels, like those used by both sides during the Vietnam War, are being used to transport supplies. [22]

– Contribution by Lisa Stern



Fig. 26: Nurses work with veterans at Walter Reed Army Hospital following World War I. Image courtesy the National Library of Medicine.



## The Veterans Affairs Hospitals

Throughout the twentieth century, each successive war that the U.S. has fought has resulted in fewer deaths among American soldiers. However a relative increase has occurred in the amount of soldiers living with physical and mental trauma. War creates disability, and the management of these patients has long been closely bound to how the state has organized medical care. Stemming back to the American war of independence, the Continental Congress encouraged enlistment in the military by creating the nation's first pension law. The first Federal pension legislation was passed when the Constitution was ratified in 1789. With little money to provide wounded soldiers, but with vast stretches of land at their disposal, the government offered free allotments. However, for soldiers fighting for the Union during the Civil War, which started in 1861, the first significant changes to veterans' policy were seen.

The General Pension Act, which provided payments according to a soldier's rank and disability, the Homestead Act, which made land available for \$1.25 an acre, and the National Cemetery System, were all established in 1862. In his second inaugural address in 1865, President Lincoln called upon Congress "to



Fig. 27: Korean War veterans receiving Purple Heart medals, 1950

care for him who shall have borne the battle and for his widow, and his orphan." This was later adopted as the VA's motto. The pension acts saw a series of reforms over the following decades, as the amount of veterans increased, and more wars waged.

In 1930, President Hoover signed the executive order creating the Veterans Administration, consolidating three preexisting Bureaus – Veterans' Bureau, the Bureau of Pensions and the National Homes for Disabled Volunteer Soldiers. In 1945, at the end of World War II, Major General Paul Hawley, chief surgeon for the European Theater, was appointed to direct VA medicine. As stated within

the VA's archive, "Hawley led the formation of a separate department of medicine, outpatient treatment for veterans with disabilities not related to military service, and the creation of resident and teaching fellowships in VA hospitals. He also established a policy of affiliating new VA hospitals with medical schools. In 1946, Hines Hospital in Chicago was the first VA facility to affiliate with medical schools, signing up with Northwestern and the University of Illinois. The appointment of VA medical staffs was removed from civil service rules in an effort to attract doctors and other professionals in larger numbers. It was under Hawley's direction that VA's hospital-based



Fig. 28: Cartoon lampooning VA wait times. Rick McKee, *The Augusta Chronicle*

research program was begun.” [23] At this time, the VA was operating 97 hospitals with a total bed capacity of 82,241 patients. Within two years, 29 new hospitals were opened. In 1950, when the “Korean Conflict” began, the number of VA hospitals was 151, with 128,000 veterans receiving medical care daily.

Chemical warfare during the Vietnam War created the need for special access to medical care. At first, the only allowable claims related to Agent Orange were for a skin rash, chloracne. The VA in 1991 recognized two other ailments, soft-tissue sarcoma and non-Hodgkin’s lymphoma. The Agent Orange Act of 1991 provided care for disabilities resulting from exposure to herbicides used in

Vietnam during the Vietnam Era.

In July 1993 the VA announced that Vietnam veterans suffering from Hodgkin’s disease and porphyria cutanea tarda (a liver disease) would be entitled to disability payments based on their presumed exposure to Agent Orange and other herbicides. This decision followed the release of a National Academy of Sciences study which concluded that sufficient evidence existed establishing an association between herbicide exposure and five specific conditions.

This instance, as well as others cited by disability studies scholars, points to a troubled relationship between patients bound to government care by virtue of the service they provided to the government.

As evidenced by veterans’ lobby groups, fighting for better health-care, the dual identity as soldier and patient is both politically and socially charged. As explained by historian David Gerber:

Disabled veterans have simultaneously realized the dangers of accepting state paternalism. They have been held up to society as heroes, and a welfare system has been established in their behalf. While disabled veterans recognize the benefits conferred by both of these sources of special status, they see a downside as well. Like most people with disabilities, what disabled veterans have most aspired to is socioeconomic independence and a self-determined life bounded by personal relations and work. Being a ward of the state is at odds with that aspiration, especially in a society that promotes the values of self-help and personal autonomy. [24]

The continuing surge in the number of veterans needing care at VA hospitals and the challenges recruiting physicians to staff the hospitals has resulted in much press about unacceptable delays and disparities in access to care. However, has this one example suggests, healthcare in organizations like this raises many other complicated social, political, and personal issues that impact the wellbeing of the patients.



# The American Hospital



Fig. 29: Johns Hopkins Hospital, 1890

**T**wo Edinburgh graduates founded the first medical school in America at the College of Philadelphia in 1765. Two years later the second medical school was established – in New York City – and in 1782 Harvard set up its medical college. By 1900, 151 medical schools were founded in America (there are 134 today). [25]

Throughout the nineteenth century, American medical education was shaped strongly around laboratory science—a sign of the significance weighted to analytical approaches to disease over clinical observation. While from the very beginning instruction included clinical lectures at the Pennsylvania Hospital, until the mid-nineteenth century when the body that became the American Medical Association established new curriculum guidelines, it was possible to receive a medical degree without every stepping foot inside a hospital. By 1921, however, every medical college had an affiliation agreement with a local hospital. In 1789 the

Public Hospital of Baltimore was established for low-income patients. Exactly one hundred years later, it became the now prestigious Johns Hopkins Hospital.

One of the challenges of placing students in wards was the objection raised by patients. Medical schools tried to work around this by having students wear white coats and refer to them as “young physicians.” [26] Yet for hospitals and medical schools alike, the incentive beyond developing bedside skills was financial. The history of hospitals in America is a history of economic struggle. While hospitals such as the New York Hospital and Massachusetts General Hospital were founded through

philanthropy as charitable hospitals along the lines discussed in Britain, the spread of public hospitals was slow. During the Great Depression, occupancy rates rose while funding dwindled. After World War II, the population spread to suburban areas, where healthcare needs were addressed through smaller clinics, family practitioners, and private insurance. It was not until the federal government provided funding support for hospital construction following the passage of the Hill-Burton Construction Act in 1946 that hospitals, particularly in underserved rural areas, was stimulated. [27]

Fig. 30: Bellevue Hospital, New York City, ca. 1890



## City and County Hospitals and the Hill-Burton Act

City hospitals in the nineteenth century largely served charity patients, “‘living specimens’ accustomed to being pushed, shoved, poked, and, finally, dissected,” to quote historian Charles Rosenberg. [28] Industrialization, immigration, and urbanization increased Americans’ contact with the institution of the hospital, and they contributed to the rising prominence of the city hospital around the turn of the century.



After World War II, the county hospital experienced its greatest visibility due to an influx of state and federal funding from the Hospital Survey and Construction Act, commonly known as the Hill-Burton Act, passed in 1946 and named for its sponsors, Lister Hill, Democratic senator from Alabama and Harold Burton, a Republican senator from Ohio. The legislation, administered through the U.S. Public Health Service, aimed to provide care to medically under-served populations, which were most often rural areas, by “filling the gaps rather than subsidizing the entire [healthcare] system.” [29] Just as a need for hospitals in urban areas prompted the creation of city hospitals, lack of care in rural areas fostered creation of county ones. Half of the new facilities built following the Hill-Burton Act were in the South where some 75% of the population was African-American, in what constituted over half the rural population of the United States in 1940; this was also the region with the highest rates of morbidity, mortality, and war-time draft rejection. [30]

\$3.7 billion in federal funding and \$9.1 billion in matching state and local funds caused a boom in hospital construction that resulted in a massive increase in hospital admissions and Americans’ experience with the hospital system. [31] Despite the “separate-but-equal” clause that was included in the legislation, at least one historian considers Hill-Burton the first successful act of the civil rights movement because it, “...both met the South’s immediate health needs and provided a transitional infrastructure to promote the acceptance of black patients and health professionals into the mainstream health care system until integrationists achieved their goals in the 1960s.” [32]

The history of city and county hospitals allows historians of medicine to investigate larger questions about the history of health and health sciences in the United States. Differences between geographic regions, urban and rural areas, the professional elite and those outside of it, as well as the roles played by funding and policy decisions become apparent in investigating this topic. Moreover, it presents a unique lens with which to view many issues of race, class, and gender in medicine that remain underrepresented areas of scholarship.

Fig. 31: Unidentified nurse, ca. 1960

– Contribution by Meg Vigil-Fowler



The history of hospitals reveals themes that complement many of the points we will see again highlighting the intertwined existence of religious, philanthropic, economic, and professional interests that impacted the evolution of ideas, practices, and institutions of medicine. Since the time of Hippocrates, medicine was seen as a vocation, a calling to public service, like the priesthood itself. We see a moral dimension to healthcare—sometimes articulated as acting in the service of a god, or sometimes using a patient’s physical illness to encourage piety and moral probity.

What about money? Today, medical centers struggle with the intent to do no harm and provide care to all in need, yet the economic reality is that hospitals are often constrained by the patient’s ability to pay. Current debates, more political than medical or moral, about Medicare provisions and reimbursement force hospitals to weigh the risks of incurring “bad debt” (losses for medical care to underinsured) against public beneficence. But the essence of this concern is not new, nor is our reliance on the philanthropic conscience of donors, as much as

the state or the marketplace, to help provide that care.

It is worth remembering as one walks through the wards as a student on clinical rotations, learning to apply physical exam skills and collecting patient histories in hospital settings, that one is walking in spaces that were carved out from thousands of years of concern about health, illness, and education. The very function of hospitals and the definition of patients – and how they are treated, ethically and medically – has changed through time, as has our understanding of their diseases or what brought them to the hospital to begin with.



Fig. 32: Nurse standing in a corridor of the clinical study center at San Francisco General Hospital in 1964

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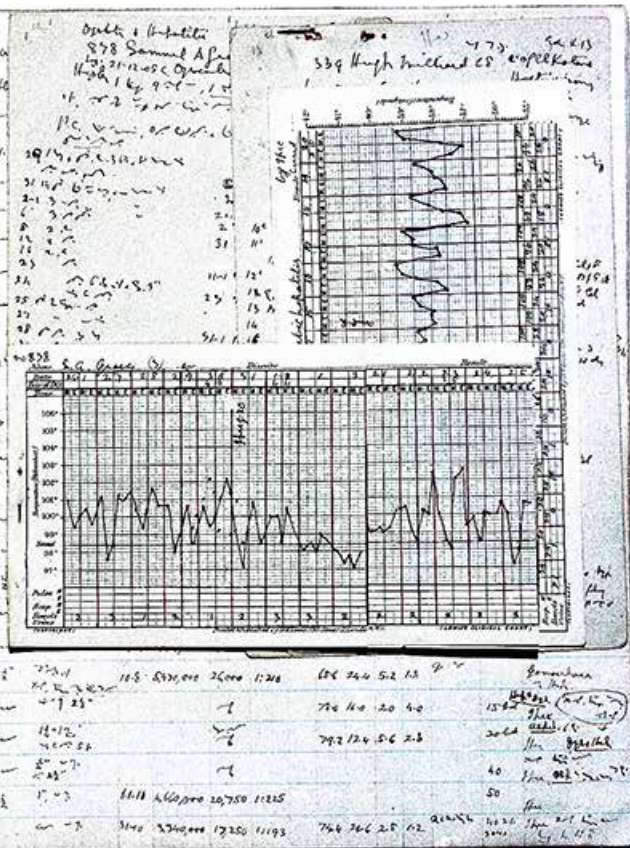


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