ACESO

JOURNAL OF THE BOSTON UNIVERSITY SCHOOL OF MEDICINE HISTORICAL SOCIETY

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Contents

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ACESO:
JOURNAL OF THE BOSTON UNIVERSITY SCHOOL OF MEDICINE HISTORICAL SOCIETY

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About the Cover

The Morning Toilet
Robinson Memorial Maternity
Massachusetts Homeopathic Hospital, undated ca 1900

Jennie M. Robinson Memorial Hospital was completed in 1916 and was endowed by Wallace F. Robison in commemoration of his wife. The Robinson was the largest maternity hospital in New England at the time, and the endowment was meant to make the institution self-supporting and able to provide services to those who would otherwise be unable to afford them. The original facility had 70 beds, with two lower outpatient floors, three upper inpatient maternity department floors, and one private patient floor with 8 of 12 rooms equipped with individual baths. Over the century of service, thousands of newborns entered the world in this building, including Sylvia Plath who was born there in 1932. In 1929 the Massachusetts Homeopathic Hospital became part of Massachusetts Memorial Hospitals and eventually merged into the Boston University Medical Center, now part of Boston Medical Center.

Today, the two once proud entranceways to the Robinson are sealed shut and the patients' rooms turned into offices and incorporated into the Boston University School of Medicine Robinson Building. Once bustling, the steel grey doors of the Maternity entrance now overlook the loading dock ramp. The waterstruck brick and limestone trimmings show the age of this century-old building.

The undated photograph from the archives of the Alumni Medical Library of Boston University School of Medicine show us an intimate portrait of daily life in the Robinson. The pristine uniform of the unknown nurse captured in a moment of serene focus as the bright eyes of the young infant stare out at us.

JOIN THE ACESO STAFF

Interested in getting involved with *Aceso*? We are actively looking for new Editors and Graphic Designers to join our staff. We are recruiting for this upcoming semester so spread the word!

Editors take part in shaping the overall direction of *Aceso* and review the articles submitted by our writers. This position requires the staff member to have excellent writing and strong spelling skills.

Design Editors and graphic designers create the cover, layout the format, and manage the artwork of *Aceso*. This position requires either some art or design experience.

If you are interested in applying for one of these positions, please email us at **aceso@bu.edu** and let us know what position you are applying for.

About Aceso

This journal is named for a Greek goddess Aceso, the daughter of Asclepius and sister of Panacea. Her name comes from the Greek word *akéomai*, which means "to heal." She represented the act of the healing process itself. Unlike the other gods, she personified medicine from the patient's side, a process that involved both the ill and the physician. Rather than a magic cure, personified by Panacea, Aceso was more involved in overall care and the realization that healthcare and well-being took time and the effort of an active process.

Letter from the Editor

The Things We Take Away:

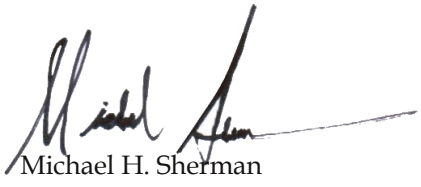
It is my pleasure to introduce the second edition of *Aceso: Journal of the Boston University School of Medicine Historical Society*. I sincerely hope that you will enjoy this publication as much as the editors, writers, and I had in assembling this journal. I would like to personally thank the Boston University School of Medicine Alumni Association and Dr. Gennady Gelman for their generous financial support of this publication.

The art and practice of healing has always been one of the fundamental parts of our society. Each and all of our cultures have struggled with disease and injury in their own uniquely human way. From Ancient Rome to modern Durban (Forming a Healthy Principate, pg 6; Dengue in Durban, pg 40) humanity has confronted healthcare. In a myriad of variations medicine and its infinite permutations has been practiced since the beginning of our civilization, and will likely be practiced until its end. Though there have been unprecedented advances made in medicine in the last one hundred years since this issue's cover photo was taken, one thing has always remained the same: Us. The tools, targets, and places may change, but the struggles we wrestle with have been fought before, and will be fought again.

Medicine, like so much of the Boston Medical Center campus (Beautiful BCH, pg 19) has changed over time. The hospital sometimes feels like a living thing itself, a strong powerful force of collective effort. On the medical floor there is a sound created by the ever-present activity that fills the air with a constant low hum. It is a sound so pervasive that it is sometimes only noticed by its absence or by the initiate. The whisk of gowns, low sighs of oxygen masks, whine of alarms, and the slow beat of the monitor. This noise transports me like Proust's tea-soaked Madeleine, "Whence did it come? What did it mean? How could I seize and apprehend it?"

One of the main goals of *Aceso* and the Boston University School of Medicine Historical Society is to foster the appreciation of the humanities at an institution dedicated to the study of science. As a profession we rush from one room to the next, from one case to the next, from one person to the next. The frenetic pace of modern medical practice is astounding. In a place so dedicated to the now, it is worthwhile to be reminded to look up from the chart or computer screen and really see around us and take pause. With Aceso, it is our intent to awaken the reader to the common ground we all share – not just with each other, but with those that have come before us and those that shall come after us.

To me this is never more evident than when we realize that we always have more in common with each other than we have different. I see this truth reflected throughout history. Whether it is in the letters of Abelard and Heloise or the letters from servicemen thanking a hospital for pictures of their newborn children (Pictures of Babies, pg 26), there is a common ground we all share. Here in the practice of medicine we have a rare chance to be a direct witness to this common humanity on a daily basis. We are privileged to have a front-row seat to a world that so few see. As medical providers are we more than just passive actors on this stage, technicians to provide a service and be done? What do we or what should we take then from the practice? I challenge you to be more than a technician of medicine, but to look up: "Whence did it come? What did it mean? How could I seize and apprehend it?"



Michael H. Sherman
BUSM Class of 2015

ACESO SUBMISSIONS

Are you interested in History and Medicine?

Aceso: Journal of the BUSM Historical Society is accepting submissions for next year's issue. We are looking for contributions in the fields of:

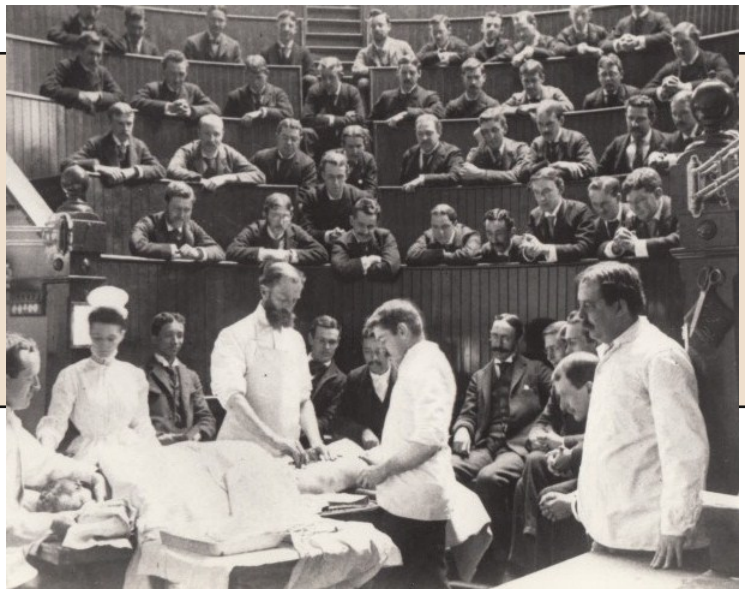
- Medicine in Antiquity
- History of Public Health and related fields
- History of Medical Education
- History of BUSM
- History of BMC and Boston City Hospital
- History of Medicine in Boston
- Biographical Essays
- History of Medicine
- Ethics/Editorials
- General Medical History
- Book Reviews
- Medical Education

Boston City Hospital Baseball Team, 1935

If you have an interest in these topics or a suggestion for another topic and would like to write an article please contact us at: **aceso@bu.edu**

About the Art

Unless noted, pictures throughout this issue are from the archives of the Alumni Medical Library of Boston University School of Medicine. Special thanks to A'Llyn Ettien for allowing us to access the archives.



BCH surgical amphitheater ca 1902

Forming a Healthy Principate:
Medicine and Public Health during Augustan Rule

David Wells
Boston University School of Medicine
MD Candidate, Class of 2016

The history of medical practice has been a dynamic one, constantly changing to incorporate new discoveries. Many of the procedures of antiquity can be deemed barbaric, even tortuous, in comparison to today. Until the rather recent advent of modern medicine, great discoveries and advancement in medicine and public health were few and far between with notorious cure-all elixirs, unsanitary procedures, and the infamous act of blood-letting reigning for centuries. The unscientific nature of medicine at these early times made it worthy of ill-repute and mistrust, which can be easily seen in the attitudes of Roman society during the periods of the patrician-ruled Republic (753 - 27 BCE) and the Augustan Principate (27 BCE – 14 CE). During this time, medicine was an exclusively Greek province, meaning that a *medicus*, or doctor, was often a slave captured from Greece; only rarely did a Roman undertake the profession. [1] As in the case of many things that were introduced to Roman society through the process of Hellenization, such as the expansion in wealth and luxury, Greek medicine was met with much distrust by the more conservative. One such man, Cato the Elder, gave Greek doctors the title of *carnifex*, a term used to describe both butchers and executioners, due to the dubious nature of medicine at the time. Cato felt so mistrustful of physicians that he even made a point of forbidding his son from seeing them. Ancient medicine was an intricately interwoven fabric of observation and superstition, but was a necessary step in the eventual development of the scientific process. Indeed at the very time, though an understanding of pathogens and epidemiology had

not been developed, it was still understood that healthy practices were necessary for a well-maintained urban infrastructure.

The Augustan Principate, as a major transition from the Senate-dominated Republic to a consolidated rule, was a period innovative in its blended emphasis on old traditions and improvement. Due to this departure from the status quo, the approval of the populace was essential in order for Augustus to present himself as a savior of Rome rather than the despotic ruler Julius Caesar had been. In his emphasis on improving the Roman state through his religious piety, his efforts at improving the infrastructure, and his direct measures to encourage the presence of doctors in Rome, Augustus made considerable progress in increasing the health and wellness of Roman citizens, whether intended or not. Augustus, in many ways, paved the way to the advancement of medical science and public health, though medicine's religious ties were still much intact.

Aesculapius was one of many in the Roman pantheon to be considered a god of healing. He acted as the patron saint of all doctors, and was widely venerated throughout the ancient world with sites near most major cities, notably Epidaurus, Pergamum, and Rome. [2] While many of the major deities that Rome adopted during its Hellenization had their myths modified to be incorporated into the existing Roman theology, Aesculapius is unique amongst many minor foreign deities, having been directly invited into the Roman pantheon. This is also a history far different from the numerous cults which were generally met with great suspicion by the Senate for their encouragement of non-Roman values, such as the Greek god of wine and inebriation, Bacchus. Ovid, a poet during the Principate, describes this event in his *Metamorphoses*. In the midst of a great plague afflicting Rome around 293 BCE, the Romans appealed to Apollo who replied that they should seek out his son Aesculapius at Epidaurus in Greece. [3] Upon arriving at Epidaurus, the Romans convinced Aesculapius to desert the city in order to return with them to cure Rome of its plague. [4] As such, the healing god transformed into a great serpent and accompanied the Romans back to their great city, and upon reaching Rome the great snake took refuge on Tiber Island. [5] Ovid concludes his tale saying:

This is where the serpentine son of Phoebus / Disembarked from the Latian ship, and resuming / His celestial form he came to the Romans / As the god who brings health, and ended their sorrows. [6]

The legend surrounding the foundation of the cult of Aesculapius in Rome is an intriguing one for several reasons. For a foreign god, Aesculapius was popularly worshiped throughout the ancient world and a cult of some sort was found at nearly every major city and often many small ones. [7] Some have argued that the mistrust that his distinctly international status garnered was partly why his temple was located on Tiber Island, on the outskirts of the city rather than in Rome itself. [8] Others have argued that this may in fact indicate some basic knowledge of public health since in a vast majority of cities, both Greek and Roman, temples to healing gods were often found a distance from the city, possibly recognizing the benefits of keeping the infirmed separate from the healthy populace. [9, 10] Furthermore, Aesculapius, even though he was a foreign deity, was portrayed as being invited into the Roman pantheon rather than infiltrating it like those previously mentioned. Regarding the acceptance of Aesculapius, Vivian Nutton, a scholar on ancient medicine states, "Medicine was Greek and it had been imported into Rome only with the approval and authority of the Roman Senate." [11] Aesculapius, despite his foreign association, became an accepted symbolic and a literal healer of Rome during its plagued times. Though the adoption of Aesculapius certainly reflected a burgeoning public focus on public health, explicit Augustan policies were perhaps better conveyed through direct imagery including the renewal of ancient traditions and iconographies.

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Augustan cultural renewal, his program which included reviving antiquated religious customs and restoration of temples in Rome, helped to reveal his associations with the healing deities. In his *Res Gestae*, an autobiographical record of his achievements, Augustus brings attention to this demonstration of piety, directly celebrating his restoration of eighty-two temples in Rome. [12] While it is not clear whether he included the temple of Aesculapius on the Tiber in this calculation, Augustus did contribute to the god's temple in Epidaurus, restoring many decaying buildings and dedicating new temples to Aesculapius, Hygieia, and Apollo. [13] Additionally, after Augustus had been healed by his personal physician, Antonius Musa, a statue to the doctor was erected on Tiber Island next to the statue of Aesculapius, according to the ancient historian Suetonius. [14] While Augustus' associations with Aesculapius and medicine in general are clear, their overall effect on his public image or on the health of Rome are more obscure. Nevertheless, Augustus employed more tangible reforms to improve the wellbeing of his Principate.

Much of Rome's success in the ancient world can be attributed to its well-organized and well-maintained military. As such, this was one sphere that was not overlooked during Augustan reform efforts since the health of legionary soldiers was so vital to the wellbeing of the empire. Indeed, Augustus' measures were conceived when the memory of the

vast numbers of Civil War casualties that had marked the ending decades of the Republic were still fresh in the minds of many Romans. It appears that Augustus employed a number of reforms to increase the overall health and fitness of his military including the avoidance of unhealthy sites for camps, better waste disposal, and improved logistical provisions for legions throughout the empire. [15] Additionally, enlistment procedures became much more selective, even involving a medical examination. [16] Furthermore, Augustus created the first professional medical corps and established the use of *valetudinaria*, or camp-hospitals, in the field. [17] These changes could have improved the overall health of a Roman legion, decreasing disease prevalence while also increasing the availability of treatment for a wounded soldier in the field.

While Rome enjoyed the successes of Augustan military conquests, measures were also taken to increase the wellbeing of the citizenry. During 23 BCE, Augustus suffered a serious illness which Suetonius described as "abscesses on the liver [which] reduced him to such despair". [18] While the exact pathology is unclear, his physician, Antonius Musa, prescribed cold compresses after which the *princeps* recovered. To show his gratitude for the intervention of his doctor, in addition to the statue mentioned earlier, Augustus granted tax immunity to all medical practitioners, a practice repeated by later emperors. [19] In addition to the granting of this privilege, Augustus confirmed another measure introduced by his adoptive father, Julius Caesar, which granted citizenship to all foreign doctors who were practicing in Rome, giving legal benefits to physicians. [20] These privileges bestowed on physicians by Augustus would have served to encourage health on the medical front, though it was his acts which directly affected public health that may have benefited Rome the most.

Augustus himself also highlighted repeatedly one of his own great acts benefiting the health and happiness of Romans citizens: his control of the granary supply. Augustus found this action pivotal enough that he included it in his *Res Gestae*. [21] Suetonius noted how, "In times of food shortage [Augustus] often supplied grain to every man […] at a very cheap rate, or occasionally even free," an action that he remarks was for the improvement of public health rather than popularity, though these two ideas need not be mutually exclusive. [22] Following another grain shortage in 9 CE, Augustus assigned the management of the grain supply to a *prefectus annonae*, an equestrian directly responsible to the emperor, to protect from future famine. [23] The guarantee of a steady food supply improved the overall wellbeing of citizens while also being a very popular measure amongst Romans, much like the interest Augustan reform placed in public infrastructure.

Augustus confirmed another measure introduced by his adoptive father, Julius Caesar, which granted citizenship to all foreign doctors who were practicing in Rome, giving legal benefits to physicians.

Perhaps no other reform has had such a lasting and dramatic impact on Roman society as his public building projects. Directly instituted by Augustus, as well as his close associates Maecenas and Agrippa, these building projects not only improved the overall appearance of the city but also the infrastructure and consequently public health of such a large urban center. Though Maecenas, a close friend and political advisor of Augustus, is best known for his patronage of many of the Principate's greatest poets including both Vergil and Horace, he was also pivotal in carrying out the Augustan building program. [24] Specifically, Maecenas was involved in the reform of Rome's funerary practices, partly through a civic beautification project. In his first book of satire, Horace describes a large cemetery, located near the Esquiline gate, that acted as an open pit for mass burials with bones and rotting flesh littered throughout the ground. [25] This would have been a horrific and acrid site of decay as well as a major concern for public health and the spread of pathogens. Around 40 BCE, however, Maecenas buried this field under thirty feet of soil, planting a *hortus*, or public garden, on top, a significant measure against such a nuisance. [26] Additionally, after the construction of Maecenas' gardens, there is little evidence of any additional public mass burials. John Bodel, a scholar on Roman burial practices, suggests that this is an indication of a move towards mass cremation in public *ustrinae*, or crematoria, as a means to dispose of the numerous corpses of the poor. [27] The movement away from large burial pits would have been greatly felt within the city, not only through removing such maligned sites as Horace describes, but also the subsequent betterment of public health. This was only one step, however, in a dramatic overhaul of public infrastructure carried out by the Augustan regime.

Some of the most lasting impacts of public works instituted during the Principate can be attributed to Marcus Agrippa acting as *aedile*, a type of city magistrate, and his work in managing the sewage and water of Rome. Numerous sources attest to the general disrepair of the public infrastructure in Rome, much of it due to decades of neglect because of civil war. [28-30] Sewage removal was one such system. The *Cloaca Maxima*, built centuries earlier during the early Republic, formed a complex sewer system beneath Rome, disposing waste from public latrines. Naturally, due to the passage of time, the great sewer was in much disrepair at the time of the Principate. In response, Agrippa cleaned the accumulated debris and restored the entire system. [31] Cassius Dio illustrated this point with the image of Agrippa riding a boat through the *Cloaca Maxima* to where it emptied into the Tiber in order to clear it. [32] Not only would his efforts have aided in the sheer stench created by the blocked

and overflowing sewage, but also would ensure a clear increase in sanitation and disease prevention through restoring its proper flow.

However, it would be Agrippa's water plan that would be one of the greatest, long-lasting achievements of the Augustan Principate. Astonishingly, though it had expanded greatly, Rome had not repaired the aqueducts supporting the city, or built a new line in one hundred years. [33] As a result, Augustus appointed Agrippa as Rome's first permanent water commissioner, a position he used to much effect and which continued after his death. First, primarily through his own expense, Agrippa repaired the *Aqua Appia*, the *Aqua Anio Vetus*, and the *Aqua Marcia*, even expanding the latter, an achievement noted by Augustus in his *Res Gestae*. [34, 35] Additionally, Agrippa constructed three separate lines, an impressive and unprecedented achievement in such short a period of time. One of these lines was the *Aqua Tepula* which was drastically reworked to improve both its total capacity as well as its drinkability, while two other lines, the *Aqua Julia* and the *Aqua Virgo*, were completely new introductions, greatly expanding the total water available to the citizenry and Augustan building program. [35, 36] The utility of these additions can be seen in the *Aqua Virgo* which is still in use today, its terminating point marked by the Trevi Fountain. [37] Altogether, Agrippa's water plan doubled the total supply of water brought into the city and marked a significant departure from traditional water infrastructure by being much more specialized, and therefore more efficient. [38] The end result of this vast expansion was not only greater access to water, but also ensured the beautification and sanitation of the entire city through the Augustan building project.

Augustus, in his program to restore and aggrandize Rome, left potent changes, some of which lasted well beyond him and even influence us today. While medicine and the natural sciences may not have been his central focus, these disciplines were met with his support through related measures. Additionally, while Augustus strove to be identified with order and tradition, his connection with public health and medicine would not have escaped everyone. Indeed it seems that Augustus did much to improve the public health in multiple sectors, including both the military and Rome's civilian population. He played a very active role both directly and through his colleagues, Maecenas and Agrippa, in restoring and greatly improving the public infrastructure. This had such a great effect that Rome relied on these improvement for generations to come and can even be found functioning today. Most important, however, is that these measures and emphases taken together would have provided Rome with improved public health during Augustan rule that would influence the millennia of scientific and medical progress that have shaped the modern world.

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Notes:

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[3] Nutton V. *Ancient Medicine*. Taub L, ed. New York: Routledge; 2004: 159.
[4] Ovid. Aesculapius. *Metamorphoses*. Lombardo S, Trans. Indianapolis: Hackett Publishing Company, Inc.; 2010: 15.725.
[5] *Ibid*, 15.822.
[6] *Ibid*, 15.824-827.
[7] Nutton, 106-7.
[8] Scarborough, 25.
[9] Compton, 303.
[10] Nutton, 107.
[11] *Ibid*, 161.
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[14] Suetonius. "Divus Augustus." *The Twelve Caesars*. Trans. Graves, Robert. New York: Penguin Group, 2007: 59.
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[18] Suetonius, 81.
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[21] Augustus, 5.
[22] Suetonius, 41-42.
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[24] Osgood J. Sense of Promise. *Caesar's Legacy: Civil War and the Emergence of the Roman Empire*. New York: Cambridge University Press; 2006: 346.
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[27] Ibid, 130.
[28] Evans HB. Agrippa's Water Plan. *American Journal of Archaeology*. 1982: 403.
[29] Osgood, 331.
[30] Zanker P. *The Power of Images in the Age of Augustus*. Shapiro A, Trans. Ann Arbor: University of Michigan Press; 1988: 71.
[31] Rowell, 126.
[32] Cassius Dio. *Historia Romana*. Foster HB, Trans. 2003. <http://www.gutenberg.org/catalog/world/readfile?fk_files=1476164&pageno=1>. Accessed May 8, 2012.
[33] Osgood, 331.
[34] Augustus, 80.
[35] Evans, 401.
[36] Osgood, 331.
[37] Rowell, 126.
[38] Evans, 411.

On the Origin of the BU Department of Orthopaedic Surgery:
Orthopaedic Residency Program #66

Robert E. Leach, MD
Boston University School of Medicine

G. Richard Paul, MD
Boston University School of Medicine

Dr. Robert Leach founded the Department of Academic Orthopaedic Surgery at Boston University Medical Center in 1970 and served as Chairman until 1994. From 1989, he was also Editor in Chief of The American Journal of Sports Medicine*, a position he held until 2002. During those years and until 2009 he continued to teach residents and medical students regularly at Boston University. He now teaches at a greatly reduced level. In retirement, he and his wife of 58 years, Laurie, travel a great deal. Bob continues to play tennis and pursue his avocation of rock climbing at Joshua Tree and Acadia National Parks. A large family of children and grandchildren provide many visiting opportunities. He believes he was lucky to practice orthopedics during the 1960s through the 1990s.*

Dr. G. Richard Paul, MD is Emeritus *Associate Professor of Orthopaedic Surgery at Boston University. He is a member of the American Academy of Orthopaedic Surgeons, American Orthopaedic Society of Sports Medicine, and the New England Orthopaedic Society. He served as Team Surgeon for the Northeastern Department of Athletics for 35 years and he served as Team Surgeon for the United States Football League's Boston Breakers. Dr. Paul also served as President of the Medical-Dental Staff and Hospital Trustee in 1982-1983.*

In the spring of 1999, Dr. Thomas Einhorn Professor and Chairman of the Department of Orthopaedic Surgery at Boston University School of Medicine and the Director of Orthopaedic Residency Program #66 asked me [Robert Leach] to present a history of the program, during the Alumni Day Symposium held at Boston Medical Center. This written history is an outgrowth of that talk. I have tried to contact many former residents and staff men from the earliest years in hopes of obtaining as precise a history as possible. As would be expected, many of the people previously associated with the program have passed on, and others were not able to remember events of much consequence. As a result much of this history comes from my own remembrances and personal experience, which started in August 1964. I did find some memos and letters concerning the

early years and did talk at length with some of the earliest residents. Help came from other sources particularly Dr. G. Richard Paul who has been associated with the program since 1967 and Dr. Willard Dotter, a long-term member of the Lahey Clinic dating back to the mid 1950s. Since no previous history has been recorded a few of these dates, names, and occurrences are surmises based upon the best available information.

Residents worked very hard in the 1940s taking calls virtually every night, for which they were paid the munificent sum of $66.00 per month.

One year after the formation of the American Board of Orthopaedic Surgery in 1934, the Boston City Hospital, under the orthopaedic leadership of Dr. Otto J. Herman, applied for and received approval for one resident education position in orthopaedic surgery, which would last for one year. In the same year, the Shriners Hospital for Crippled Children in Springfield, MA, under the leadership of Dr. R. N. Hatt was approved for one resident for one year. These two events were the genesis of what was to become Program #66. It was not until 1940 that the Lahey Clinic, whose orthopaedic chairman was Dr. G. N. Haggert, applied for a fellowship in orthopaedics, and they were granted one fellowship position lasting for a period of one to three years.

During the 1940s, the orthopaedic services at Boston City Hospital (BCH) and the Shriners Hospital were independent programs. Each hospital offered training in orthopaedics, but there was no integrated organized program of orthopaedic education. Residents worked very hard in the 1940s taking calls virtually every night, for which they were paid the munificent sum of $66.00 per month. However, there were many candidates for these positions. This situation stayed the same until 1947, when the Boston City Hospital suddenly had two residents and the Lahey Clinic had four residents or fellows who served one to two years. Fellows could stay one year while residents had to stay two. At the same time, Dr. Gary Hough, Sr., who had become Chief at the Shriners Hospital started taking two residents for one or two years. In 1948, Dr. Joseph Shortell, for whom the present Boston City Shortell Unit is named, became the Chairman of the Fracture and Orthopaedic Service at Boston City Hospital. Throughout the 1940s, these services at Boston City, the Shriners, and at Lahey were independent entities, each offering training in a particular orthopaedic discipline, but there was no organized program.

Gestation took a while, but it appears that Program #66 (as designated by the American Board of Orthopaedics Surgery) was officially born in 1950 when the Lahey Clinic and BCH joined their orthopaedic programs under the dual leadership of Dr. R. Sullivan, who had replaced Dr. Shortell, at BCH and Dr. G. Edmund Haggert at Lahey. Dr. Shortell, a much respected and revered surgeon, had died an early death. The orthopaedic residents from BCH and Lahey then obtained their children's training in orthopaedics at Shriners Hospital in Springfield and at the Massachusetts Hospital School in Canton, where Dr. Paul Norton, the inventor of the Norton Brace for scoliosis, was the chief. Dr. Norton also became one of the four chiefs who met to select the residents. Program #66 was formally approved by the American Board of Orthopaedic Surgery (ABOS) in 1950, and the residency was first listed in the AMA Directory in 1951. By 1952, the four institutions were full partners in the orthopaedic education of residents, and for reasons not immediately apparent, the administrative head came from Lahey. It may have been because Dr. Haggert was a nationally known figure. Thus, Program #66 was called the Lahey Clinic Integrated Orthopaedic Program and Dr. Haggert was the first Program Chief. The residents could obtain children's training at Shriners in Springfield or at the Massachusetts Hospital School in Canton. The children's training initially had residents going to both institutions. Later residents went to one or the other of those hospitals. There was a marked difference in the training at the two institutions with The Massachusetts Hospital School having a clientele that was largely composed of patients with severe chronic disabling diseases.

During the early 1950s, resident training programs in orthopaedics as dictated by the ABOS, included one or two years of general surgery, which could be taken at any accredited institution plus three years of orthopaedics, divided in this case between Lahey with one year of adult, Shriners or the Mass Hospital School for one year of pediatrics, and BCH for one year of trauma. There was also a pediatric rotation at the Lakeville Hospital where chronic conditions in children were treated. Whether a

resident went for his training to Shriners, Lakeville, or Canton (Mass Hospital School) was rather due to the "luck of the draw," and this created some discord amongst residents, some of whom preferred the Shriners training while other preferred to stay nearer Boston. When Program #66 was first organized, the general surgical service at BCH was in charge of fracture treatment. In 1952, Dr. Sullivan, who must have been dealing from a position of strength in the hospital, assumed control of the fracture service for the orthopaedic department. This was a most important event in the history of Program #66 and in Boston. Fracture care has always been one of the building blocks in orthopaedic education and is essential to an accredited training program in orthopaedics, but general surgery had also considered it their area of expertise.

As stated previously Dr. Haggert was the first Program Chief. Dr. George Hammond joined the Lahey Clinic in 1953 and was named chairman of the Orthopaedic Department at Lahey in 1957. Dr. Hammond had trained at the University of Michigan and first went to the Sayre Clinic in Pennsylvania. He brought special knowledge of the back and shoulder, and he was ably assisted by Dr. Willard Dotter, who had accompanied him from the Sayre Clinic in PA. Dr. Dotter practiced at the Lahey Clinic and was a valued teacher in the program for 32 years from 1955 to 1987.

It was in 1956 that the name of Dr. Alexander Aitken appears as Chairman of Orthopaedics at Boston City. Dr. Aitken was also a nationally recognized orthopaedic surgeon who created the classification of epiphyseal growth injuries, which later gave birth to the Salter classification. In talks with some older members of the Lahey staff, they stated that the program started with Dr. Aitken as the principal organizer, but this appears incorrect. From documents that I have personally seen, ABOS approval was obtained for Program #66 in 1950, and the Residency was officially listed in the AMA Directory in 1951.

Towards the late 1950s, Dr. Richard Kilfoyle became very involved in residency training in Boston, when he went to the Carney Hospital. Dr. Kilfoyle ran the Carney and the two children's hospitals, the Mass Hospital School and Lakeville Hospital, although Dr. Norton remained the titular chief at the latter two hospitals. Dr. Kilfoyle later went on to establish a separate, independent program based at the Carney Hospital using the Mass Hospital School and Lakeville for his pediatric rotations and both the New England Medical Center and Boston City Hospital for additional trauma and adult. This Carney program eventually merged into the Tufts University program in 1990 when virtually all programs were required to have a university base.

During the mid-'60s it was obvious that the program at Boston City was not doing well, because of the lack of a full-time leader.

While the situation at Lahey was stable it was not so at BCH. Dr. Aitken, who had come to Boston City Hospital in his later years, left that position in 1963. There were then a series of interim chiefs at City Hospital for several years, including Dr. Arthur Thibodeau of Tufts University, Dr. Robert Uehlein of Beth Israel Hospital, and Dr. Paul O'Brien of Carney Hospital.

While cooperation should have been essential to the success of the young program, integration was lax and communication between the hospital chiefs was minimal in Program #66 during the 1950s and '60s. There was virtually no crossover of personnel or teaching, and the only meetings they had in common were those in which the chiefs met to choose residents. Boston City had Saturday morning Grand Rounds to which all orthopaedic surgeons were invited, but the only person not usually at Boston City, who attended these, was Dr. Leach of the Lahey staff. During the mid-'60s it was obvious that the program at Boston City was not doing well, because of the lack of a full-time leader. In 1967, Dr. Charles Woodhouse became the Chief at Boston City Hospital, and what followed the next year and a half could only be described as tumultuous. Because of recurring problems, he was asked to resign and was replaced for a period of time by Dr. Paul O'Brien, whose primary affiliation was at Carney. But, Dr. O'Brien always had a strong affinity towards Boston City Hospital and did his best to maintain the service.

In Springfield in 1963, Dr. James Fisher became Chief at the Shriners Hospital succeeding Dr. Gary Hough, Sr. The Lahey Clinic staff was augmented by the addition of Dr. William Torgerson in 1963 and in late 1964 by Dr. Robert Leach, who came directly out of the Navy to join the Clinic. In 1967, Dr. Hammond retired as Chairman but stayed on to teach

and practice. Dr. Leach, who trained at the University of Minnesota before going into the Navy, was appointed Chairman at Lahey. In the years 1956-1970 the resident rotations remained essentially the same, except that in the mid-1960s the rotations at the Mass Hospital School and Lakeville were dropped, and all residents went to the Shriners for their children's training.

During 1967 Dr. David Segal and Dr. G. Richard Paul of whom more will be written later, became fellow residents, and they have continued an association with Program #66 which has lasted into the new millennium. During the 60s the Lahey Clinic was known for its reconstructive surgery with some emphasis on the conditions of the spine and shoulder, with Dr. Hammond being well regarded as an authority on conditions of the shoulder. Dr. Dotter was developing a foot and ankle practice. During 1966-67, sports medicine became an aspect of the program when Dr. Leach became the orthopaedic consultant for the Boston Red Sox and team doctor for the professional soccer team, the Boston Beacons.

In November 1969, a significant meeting occurred when Dr. Albert Ferguson, Jr., the President of the American Board of Orthopaedic Surgery, made a two day inspection visit to Program #66. Of interest, his father, Albert Ferguson, Sr., had served as an associate Professor of Fracture and Orthopaedic Surgery at Boston City Hospital during the 1930s. The present Dr. Ferguson, Jr. went on to become the Chairman and Professor of the University of Pittsburgh Orthopaedic Program. At the conclusion of his visit to Program #66, he informed Dr. Leach that the program could not remain free standing without a university affiliation. He said that the Board would not allow this in the future. He proposed to Dr. Leach that he either go to Tufts University or to Boston University and that the program under his present aegis would be transferred to that institution with Dr. Leach as the Chairman. Dr. Leach's classic response to this was, "Can you do that?"

Following some negotiations on July 1, 1970, Dr. Leach left the Lahey Clinic and became the Professor of Orthopaedic Surgery at Boston University School of Medicine and co-director of the Fracture Service at Boston City Hospital with Dr. Henry Banks, who had become the new Chief at Tufts University. Dr. William Torgerson succeeded Dr. Leach as the Chief at the Lahey Clinc. Boston University previously had no academic or residency orthopaedic program. They did have several practioners who used the hospital and who ran one clinic, which was the extent of the medical school teaching at the time. The acting head, Dr. Joseph Kopell was a busy surgeon who did most of his work at Beth Israel Hospital. Dr. H. Sakellarides, who did primarily hand surgery, had a busy practice and remained for many years. In early July 1970, Dr. Charles Gregory of the ABOS visited UH and BCH and gave approval for the new Program #66 based at Boston University School of Medicine. A review of past history reveals that during the 1930s and '40s, Dr. Lot Howard had been the Head of Orthopaedics at Boston University, but somehow the department had disappeared. However, there had never been a training program of any sort.

The program could not remain free standing without a university affiliation. [...] Following some negotiations on July 1, 1970, Dr. Leach left the Lahey Clinic and became the Professor of Orthopaedic Surgery at Boston University School of Medicine

Following Dr. Woodhouse's unlamented departure from Boston City and Dr. O'Brien's efforts at holding the program together a triumvirate arrived, Dr. Henry Banks of Tufts University; Dr. Leach of Boston University; and Dr. Bart Quigley from the Harvard Surgical Service. Dr. Quigley was a General Surgeon with an interest in fractures and sports injuries. These co–directors rebuilt that service into a sound academic program. Residents from BU, Tufts, and the Carney Hospital all rotated through the Boston City Hospital.

Shortly after his appointment as Chairman at Boston University and co-director at Boston City, Dr. Leach was awarded the AOA American, British, Canadian Traveling Fellowship and in the spring left for six weeks. This was possible because Dr. Isadore Yablon from Montreal, Canada, joined the BU faculty. The fellowship eventually proved to be of great value to the program because Dr. Leach was in direct contact with some of his USA peers who would become the future leaders of American Orthopaedics, and it also provided knowledge of and contacts from the British Isles.

Dr. Yablon, who was taking over the reins short term, had a

primary interest in trauma, particularly ankle fractures and in basic research concerning articular cartilage degeneration. Also Dr. G Richard Paul having finished his residency became a full time staff member working at BCH and University Hospital plus working with the Massachusetts Crippled Children's Program with Dr. Arthur Pappas of Children's Hospital. Dr. Pappas soon left there to become the Chairman of Orthopaedics at the new University of Massachusetts Medical School in Worcester. Jewish Memorial Hospital became one of the BU non-resident affiliates, with Dr. Yablon becoming chief there. Sports Medicine and a captive patient population was further enhanced by the addition of Northeastern University athletic teams plus the teams at Bentley College and later on the Boston University athletic teams. Further building Sports Medicine occurred when Dr. Leach became the Boston Celtics orthopaedic consultant in 1968, a position which he took with him to BU.

During the years 1971-1974, Program #66 remained stable. Closer ties were developed between UH, BCH, and Carney Hospital whose orthopaedic service was directed by Dr. Richard Kilfoyle. Carney residents rotated at both UH and BCH. During this period the orthopedic residency training consisted of a one year internship, one year of general surgery training and three years of orthopaedic surgery training. The initial two years could be spent at any approved hospital of the resident's choice.

In 1974, the city of Boston decreed that for administrative and financial reasons only one medical school would be affiliated with Boston City Hospital. The three schools in place were asked to submit proposals. Harvard Medical School sent a letter basically stating that "they were Harvard," and therefore they should be chosen. Tufts University suggested that the three school system was working well and should be left in place. Boston University's Dean, Dr. Ephraim Friedman, presented a detailed proposal as to why BU should be the medical school of choice for Boston City Hospital. Boston University was selected to direct Boston City Hospital. Doctors Banks and Quigley had to leave the orthopaedic service in the hands of Boston University. Dr. Banks had done a superb job of directing the service, and before he left he cautioned Dr. Leach that Boston University would have to find another trauma service because he believed that Boston City was in such bad financial shape that it would soon close. However, Boston mayor, Kevin White, decided that BCH would not close during his tenure, and BCH started a gradual building program of tearing down old buildings and replacing them with new ones, which has continued into the 21st century. The two years, 1974–1976, were very tough in terms of the new program because the staff at UH and BCH was seriously depleted.

In 1974, with much urging from Dr. Yablon, the orthopaedic department offices were moved from the old Preston Building - a former Holiday Inn for Extended Care – to the ground floor of University Hospital in space previously occupied by the Emergency Room. The space included academic offices, secretarial space, and a small conference room. Dr. Yablon also saw his patients there, although other staff members continued to see patients in the Doctor's Office Building. At the same time the department had become so busy surgically that it was allocated an inpatient orthopaedic floor and two full time physical therapists who worked exclusively with orthopaedic patients on that floor.

In 1974, Dr. Leon Kruger succeeded Dr. Fisher as Chief of Staff at the Shriners Hospital when Dr. Fisher suffered a stroke, which required him to retire. Concurrently and as the result of interesting discussions and hard core negotiations between Dr. Leach and Dr. Kruger, Boston University orthopaedic residents were sent to Bay State Medical Center in Springfield for a six month rotation in adult and trauma. There were major misgivings on the part of some of the BU staff, which did not believe that the Bay State Medical Center rotation was a good idea. However, with the association between Dr. Kruger at Shriners and at Bay State, an accommodation was reached. Interestingly, over the years, Baystate proved to be a fruitful addition to the program. The residents accumulated a great deal of surgical experience with such men as Howard Crawford and John De Weese and were exposed to different thoughts and surgical procedures. During this time the Lahey rotation remained essentially the same, with an emphasis on reconstructive surgery.

In 1976, the program needed new energetic, attending surgeons and help at Boston City. The timing was perfect for a Program #66 graduate, Dr. David Segal, to return to Boston. Dr. Segal had been working in Israel after

finishing his residency and was looking for a temporary position in the United States. Advancement in the Israeli Academic system was notoriously slow and the belief was that he could better his academic resume here for a few years before returning. He was appointed Chief of the Department at BCH where he was a superb leader and teacher. This temporary position lasted nine years. The distinctive leadership styles of Dr. Leach and Dr. Segal formed an interesting contrast. It was rumored that Dr. Segal had graduated from the "Genghis Khan School of Diplomacy" and Dr. Leach was more from the British Polite School of Diplomacy. The arrangement was largely successful in terms of things accomplished for Program #66.

The orthopaedic department provided medical care for many athletic teams including: Boston University, Northeastern University, Bentley College, and eventually [...] the Boston Celtics, [and] two professional soccer teams.

The 1970s witnessed – for Boston - unusual institutional cooperation between the three Boston Orthopaedic Programs, plus a steady positive development of Program #66. There was a close working relationship with regard to residency training with Dr. Henry Banks at Tufts and Dr. Henry Mankin at Massachusetts General Hospital. Boston University Orthopaedics participated in an Orthopaedic Pathology Course and a Prosthetics Course in Boston each year. Dr. Kruger ran the latter course, which was well regarded.

For BU, clinical affiliations were developed at outpatient clinics in the Neighborhood Health Centers in East Boston and Roxbury. Dr. George Whitelaw, a former resident, was helpful in organizing and attending to these. The orthopaedic department provided medical care for many athletic teams including Boston University, Northeastern University, Bentley College, and eventually through the efforts of Dr. Anthony Schepsis, a new addition to the UH staff, the University of Massachusetts Boston, plus the Boston Celtics, two professional soccer teams, the Minutemen and Tea Men, and the professional tennis team the Boston Lobsters. Drs. Paul, Leach and Schepsis served as team physicians for the Boston Breakers of the short lived US Football League. The US Tennis Championship Tournament held yearly at the Longwood Cricket Club gave younger staff and residents exposure to sports in a pleasant setting. Other sports medicine additions, which had started in the early 1970s and continued on this way for approximately 29 years included rotations for medical students and residents at Mt. Snow and Stratton Mountain ski resorts in Vermont. This also afforded the staff and residents to enjoy working vacations. Dr. Segal organized and directed the orthopaedic outpatient clinics at Boston City and also took over the medical care and retirement examinations for the Boston Police and Boston Fire departments.

The growth of the Orthopaedic Training Program at Boston University and Boston City Hospital in the '70s attracted outstanding orthopaedic residents; amongst whom were Dr. George Whitelaw, Dr. Anthony Schepsis, Dr. Michael Corbett and Dr. William Creevy all of whom trained in Program #66 and went on to serve as attending physicians for many years. Dr. Schepsis continued to serve as the Director of Sports Medicine into the 21st century with Dr. Creevy at BCH. Dr. Stephen Wasilewski and Dr. Bernard Pfiefer also graduated from the program in the '70s and later joined the department at the Lahey Clinic where they contributed significantly as attending physicians. Dr. Paul continued to work at both hospitals and eventually took over the athlete's care at Northeastern University.

There was a small basic science research program at BU directed by Dr. Yablon in the 1970s with his primary interest being in the field of joint transplantation and the effect of the synovium on cartilage deterioration. He received small amounts of funding from the NIH but due to lack of funds and to some extent time, the research never really prospered despite Dr. Yablon's earnest efforts.

In the late 1970s, the ABOS changed its requirements for orthopaedic residents to one year of general surgery and four of orthopaedics. The BU resident rotations were 12 months at University Hospital, 12 months at BCH, nine months at Shriners, nine months at Lahey, and six months at Bay State Medical Center. These clinical rotations remained constant until approximately 1995, when the four years of orthopaedics changed to 24 months at The Boston Medical Center, which was comprised of BCH and UH, and 12 months at Lahey, six months at Shriners, and six months at the Boston Veterans Administration Hospital. The latter was mandated by the BU Dean,

which required dropping the Bay State Medical Center from the resident rotations. The VA had become a larger cog in the medical student teaching curriculum, which to some extent forced the Dean's hand.

In the early 1980s, the BU Orthopaedic department offices were relocated from the UH first floor to the Doctor's Office Building (DOB) on the 8th floor. This was both for the academic offices and where all patients were seen. Shortly after that due mainly to Dr. Yablon's efforts a radiology unit was added to the orthopaedic department, which improved patient care and service. This lessened the time waiting for doctors and patients and provided some financial reimbursement. During this period the Lahey Clinic had moved from the Kenmore Square area in Boston to Burlington, Massachusetts, where it combined its outpatient services and its own hospital into one campus. They added sports medicine and trauma to its previously highly regarded expertise in reconstructive surgery.

By the 1980s the Sports Medicine section of Program #66 was doing very well. Dr. Anthony Schepsis had joined the full time orthopaedic staff, and he provided another person interested in sports medicine by assuming a major role at the Boston University Athletic Department. Later on in 1991, Dr. Schepsis was joined by Dr. Timothy Foster, who had his initial contact with the orthopaedic department as a football player at Boston University. He graduated from BU Medical School and from the BU resident training program before joining the full time staff. Much later in 2006, these efforts would be rewarded by a sports medicine complex on the Boston University undergraduate campus. Dr. William Creevy joined the department around this time and provided both clinical expertise and administrative skills. He went on to earn a Master of Science in Health Care Management, which continues to benefit both the Orthopaedic Department and Boston Medical Center.

During the 1980s, the Lahey Clinic continued to be not only an integral part but a major partner in Program #66. The clinic had moved to Burlington where Dr. Wasilewski joined the staff and Dr. Pfiefer joined the clinic in 1984 after his military service and developed an orthopaedic spinal surgery section. 1984 found Dr. Torgerson retiring at Lahey, and Dr. Wasilewski was named as Chairman. He recruited Dr. William Healy from Johns Hopkins in 1985, who arrived with special expertise in several areas but particularly in joint replacement. The residents at Lahey now gained experience with joint replacement, sports medicine, hand surgery, foot and ankle surgery, and some fracture management during the 1980s and 1990s.

From 1986, and lasting a decade, the only constant for Program #66 seemed to be change.

From 1986, and lasting a decade, the only constant for Program #66 seemed to be change. In 1986 Dr. Segal left BCH to return to Israel, where he received a significant Orthopaedic Chairmanship. He was replaced at BCH as Director of Orthopaedic Surgery by Dr. George Whitelaw. Dr. G. Richard Paul continued to benefit the program particularly the resident teaching, with his large patient population, which gave residents a chance to watch and practice good orthopaedic surgical technique. During these years Dr. Leach, while clinically very active at UH was busy away from Boston being named as Head Physician for The USA Olympic team from 1980 through 1984 and to the US Olympic Committee as Chairman of Sports Medicine and Sports Science, 1985-1993. He was appointed to the ABOS in 1984 for 10 years, during which time he was the Treasurer and on the Executive Committee.

In 1989, Dr. Leon Kruger retired as Chief Surgeon at the Shriners Hospital, and he was replaced by Dr. John Roberts, formerly Professor and Chairman at Brown University and before that Chairman of the Department at New Orleans Children's Hospital. The Shriners Hospital was being completely rebuilt and a marvelous new structure was erected. When Dr. Roberts retired from Shriners in 1997, he was replaced by Dr. David Drvaric who had been the second in command for many years and has provided ongoing outstanding leadership.

During this time there was a great deal of building at the Boston University Medical Campus including a completely new hospital called the Atrium Building at University Hospital and a new inpatient facility at Boston City Hospital. In 1990, Dr. Wasilewski left the Lahey Clinic for private practice in Sun Valley, Idaho, and Dr. William Healy was appointed Chairman of the department at the Lahey Clinic; Dr. Healy brought about substantial revitalization of the Lahey Orthopaedic Department. During his tenure the Lahey Department grew to become a large multi-specialty group with sub-specialty expertise in all areas. This

has enhanced the clinical teaching of Program #66. By 1999, Lahey had subspecialty groups in joint replacement (Drs. Healy, Iorio), hand surgery (Drs. Margles, Gumley, Kasparyan), spinal surgery (Dr. Pfiefer), sports medicine (Drs. Wilk, Lemos, Smiley), orthopaedic trauma (Dr. Dube), and foot and ankle surgery.

The Lahey research work focused on techniques of total joint arthroplasty, treatment of difficult fractures, outcomes studies, and evaluation of hospital costs in orthopaedics. Shortly after becoming Chairman at Lahey, Dr. Healy was selected as one of the first Japanese Orthopaedic Association Traveling fellows by the American Academy of Orthopaedic Surgeons. (The coordination and selection of JOA fellows was moved from the AAOS to the AOA in 1999.) This was an important honor for the Lahey Department and for Program #66. Subsequently in 1998, another Lahey physician, Dr. Iorio, received the JOA Traveling Fellowship.

In November 1992, Dr. Leach told Dean Aram Chobanian that he wished to resign as Chairman. The Dean, however, asked him to stay on while a search for his successor was begun. An outside search did not find a suitable candidate, and in 1994 Dr. Isadore Yablon was named as Interim Chief of the Orthopaedic Department at BU. He continued in this position until May 1997. In the mid-1990s, University Hospital and Boston City Hospital merged to form The Boston Medical Center, which was the first merger of a private and municipal medical facility in this area. The arrangement worked far better than many people had predicted and continued to be successful until the financial woes of Medicaid and Medicare persisted after the 2008 debacle. Dr. William Creevy, having received his Master of Science in Health Care Management, became the Chief at BCH in 1996 and acted as Vice Chairman for Clinical Affairs for the department. New offices were acquired at the BCH complex completing the move from the basement of the Shortell unit where Dr. Banks, Quigley, and Leach had originally worked to Dr. Segal's 5th floor offices in the Ambulatory Care Center to the present space on the second floor of the Dowling Building at Boston City Hospital.

In the mid 1990s, the Veterans Administration Hospital in Jamaica Plain was put under the aegis of the Boston University Medical Center, and it was determined that the orthopaedic service would come under the direct supervision of the Boston University department. This program had previously been under the direction of Tufts, and this change of directorship had been delayed for several years but was eventually implemented by the new orthopaedic chairman at Boston Medical Center. The affiliation with the Veterans Hospital necessitated the termination of the relationship with Bay State Medical center in Springfield, which had worked well for 20 years. During this period, graduates of Program #66, Dr. G. Richard Paul, Dr. Anthony Schepsis, Dr. William Creevy, and Dr. Timothy Foster continued working and providing leadership for the resident teaching.

The most significant development in Program #66 since the reorganization in July 1970 was the appointment of a new Professor and Chairman of the Department of Orthopaedic Surgery at Boston University School of Medicine in May 1997. Dr. Thomas Einhorn came to BU from the Mount Sinai School of Medicine in New York City and along with his clinical skills, brought with him a strong background in both administration and basic scientific research. Within the first calendar year the department had many positive changes including a departmental practice plan, a well funded basic research program, and greatly expanded and modernized offices on the 8th floor of the DOB. Of interest, Dr. Einhorn was a former American, British, Canadian Traveling Fellow, which meant that both permanent Chairmen of the Department had won this honor. When he came to Boston University, Dr. Einhorn was an Associate Editor of the *Journal of Bone and Joint Surgery*, and he was later elected President of the Orthopaedic Research Society. In the years since his appointment the basic research division has received many major grants from the NIH and other funding organizations and much acclaim for its work. This was due to the direct efforts of Dr. Einhorn.

In 1989, an orthopaedic library located at the Boston City Hospital campus was funded through a donation by the Leach family and augmented by contributions by the BU Orthopaedic Alumni Association. Dr. G. Richard Paul had for some years been the organizing force behind the Alumni Association and was the key figure in this funding effort. This made it possible to well stock the library. In 1997, through the Leach family, funds were donated to establish the Leach

Visiting Professorship and Dr. Charles Rockwood of San Antonio, Texas, became the first guest lecturer in the fall of 1998.

Another major change came about in 1997 when Dr. Einhorn persuaded Dr. Paul Tornetta to come from the New York City/Brooklyn area to assume the position of Chief at Boston City Hospital and Vice Chairman for Academic Affairs. Dr. Tornetta and his staff have restored that hospital to a position in trauma similar to or exceeding its halcyon days of the '70s and '80s. His emphasis on patient care and attention to detail further enhance the program.

In over 60 years, Orthopaedic Program #66 has evolved from the time of a single resident at Boston City and one fellow at Lahey to its present status. While the inception of the program can be dated to 1950 and the Lahey Clinic and Boston City Hospital, its modern birth as a University program rightfully starts in 1970, with the association with Boston University. To its previous clinical excellence highlighted by the Lahey Clinic, University Hospital, and the Shriners Hospital, the new Boston University Orthopaedic leadership starting in 1997 has brought an outstanding basic science research program and sound administrative foundation. To this is added the strong trauma program at BCH and the constantly upgraded teaching program and patient base at the Lahey Clinic. Each of these pieces leaves Program #66 well positioned for the future, as I write this history in 2002. The over 130 members of the Boston University Orthopaedic Alumni Association attest to its past history, and they have provided excellent guest lecturers for the Alumni Teaching Day, a tradition established by Dr. Einhorn in 1998 and later named for Dr. G. Richard Paul. Program #66 has a solid past and is well-positioned by its leadership for a bright future.

Orthopaedic Program #66 has evolved from the time of a single resident at Boston City and one fellow at Lahey to its present status.

The Last Decade
By G. Richard Paul

The last decade has witnessed tremendous growth of the Department, in both the volume and complexity of the surgical procedures, the stature of the Department as a Level 1 Trauma Center, and the leadership role of the attending staff members in their respective specialty organizations. The attending staff, all of whom are fellowship-trained, and the resident staff routinely make presentations at regional and national meetings. The attending staff includes Thomas Einhorn (total joint arthroplasty), Paul Tornetta (orthopaedic trauma reconstruction), Bill Creevy (sports medicine and orthopaedic trauma reconstruction), Brian Silvia (total joint arthroplasty), Xinning Li (sports medicine), Tony Tannoury (spine trauma and reconstruction), Chadi Tannoury (spine trauma), Rob Nicoletta (sports medicine), Andrew Stein (hand reconstruction), Andrew Jawa (hand reconstruction), and Desmond Brown (pediatric orthopaedics).

The attending staffs of the affiliated hospitals in the residency program (Lahey Clinic Medical Center, Shriners Hospital for Children) likewise are all fellowship-trained and are leaders in their respective specialty organizations.

Current and former attending surgeons include: Robert E. Leach (founding chairman of BU Department of Orthopaedic Surgery, Editor *Emeritus* of *The American Journal of Sports Medicine*, Treasurer of American Board of Orthopaedic Surgery, Deputy Editor of *Clinical Orthopaedics and Related Research*), David Segal (founding member of Orthopaedic Trauma Association; Chairman, Department of Orthopaedic Surgery Hadassah Medical Center, Jerusalem, Israel), Thomas Einhorn (Editor, *JBJS Reviews*; formerly Deputy Editor of *JBJS*), Paul Tornetta (President, Orthopaedic Trauma Association; editorial staff of *Journal of Orthopaedic Trauma*), Tim Foster (Associate Editor, *American Journal of Sports Medicine*), William Creevy (VP, Boston Medical Center / CEO BUSM Faculty Practice Foundation), and William Healy (Chairman *Emeritus*, Department of Orthopaedic Surgery Lahey Clinic Foundation).

From a program that accepted one resident for one year of training in 1950 to a program that accepts five residents for five years of training in 2013, Boston University Department of Orthopaedic Surgery / Orthopaedic Residency Program #66 has evolved into a nationally prominent program which is training the future generation of leaders in orthopaedic surgery. ◆

Beautiful BCH:

A Photo Essay of 19th Century Views of the Boston City Hospital

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Class of 1968

Peters Otlans
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Dr. James S. Brust is a psychiatrist in private practice in San Pedro, California and serves as Chairman of the Department of Psychiatry and Medical Director of the Psychiatric Unit at Providence Little Company of Mary Medical Center in San Pedro. He is also Assistant Clinical Professor of Psychiatry at the David Geffen School of Medicine at UCLA, and teaches psychiatric residents at the Harbor-UCLA Medical Center.

In addition to full time practice, Dr. Brust is an independent historian, specializing in 19th century popular prints and photographs, occasionally crossing over into medical topics including Mary Lincoln. He has written over forty journal articles, several book chapters, and is a coauthor of the book Where Custer Fell, Photographs of the Little Bighorn Battlefield Then and Now *(University of Oklahoma Press, 2005). Since 1995, Dr. Brust has been acquiring and donating historical artifacts relating to BUSM and the Boston City Hospital,*

"One index of the intelligence and public spirit of a community is the way in which it provides for the needs of the sick and poor. Boston, in establishing and maintaining a Municipal Hospital […] has given proof of a humanitarian spirit and a civic intelligence second to no city in the United States," said early BCH superintendent George Rowe, MD. In addition to its symbolic value to the community, and the good medical care provided there, the original Boston City Hospital was a beautiful complex. Erected in 1864, just as popularly priced photographs were becoming widely available, photographers made and sold many images of BCH in its early years, which was a mark of civic pride on the part of those who purchased these pictures.

This article presents a group of 19th century photographs of the Boston City Hospital. Most are stereographs (also known as stereo views); double images mounted on a card, made by a camera with two lenses spaced the same distance apart as human eyes. When seen through a special viewer, they gave a three dimensional effect, very well suited for scenic, landscape, and architectural photographs.

Though some historical information is included in the captions, this article is in no way meant to be a comprehensive account of the hospital's early years, but rather an aesthetic look back at a public building complex that was as beautiful as it was helpful and important.

All illustrations in this article are from the collection of the Boston University Medical Center Alumni Medical Library, donated by author James Brust.

Figure 1: Anonymous (i.e. no photographer identified) stereograph, two albumen silver prints, each 3 x 3 inches, mounted on a 3 3/8 x 7 inch card (actual size shown). This is the typical appearance of a 19th century stereo view. In subsequent illustrations we have shown only one side of the stereograph, oftentimes enlarged to make the image details more clear (see Figure 2 for an enlargement of this view).

Figure 2: Enlarged detail of Figure 1. This is an early view, likely taken in the 1860s. It shows the three most prominent of the original buildings. In the center is the magnificent Administration Building with tall columns and stately dome, its apex rising to a height of 148 feet. [2] On the left is Pavilion I, the surgical pavilion with wards A, B, C, and D. On the right Pavilion II housed medical wards E, F, G, and H. Both were connected to the Administration Building by a curved, covered colonnade. Though not currently marked with interpretive signage about their origin, the two Pavilions still stand today, now named BCD (left) and FGH (right) after the wards they once contained (see Figure 14). The other original building was a boiler house directly behind the Administration Building, hence not visible in this photograph. The building seen in the distance behind the right colonnade is probably Pavilion III, built two years later (about 1866) to house septic cases requiring isolation. In the foreground is Harrison Avenue, at the time a dirt street. The beauty of the architecture and layout of these buildings is evident.

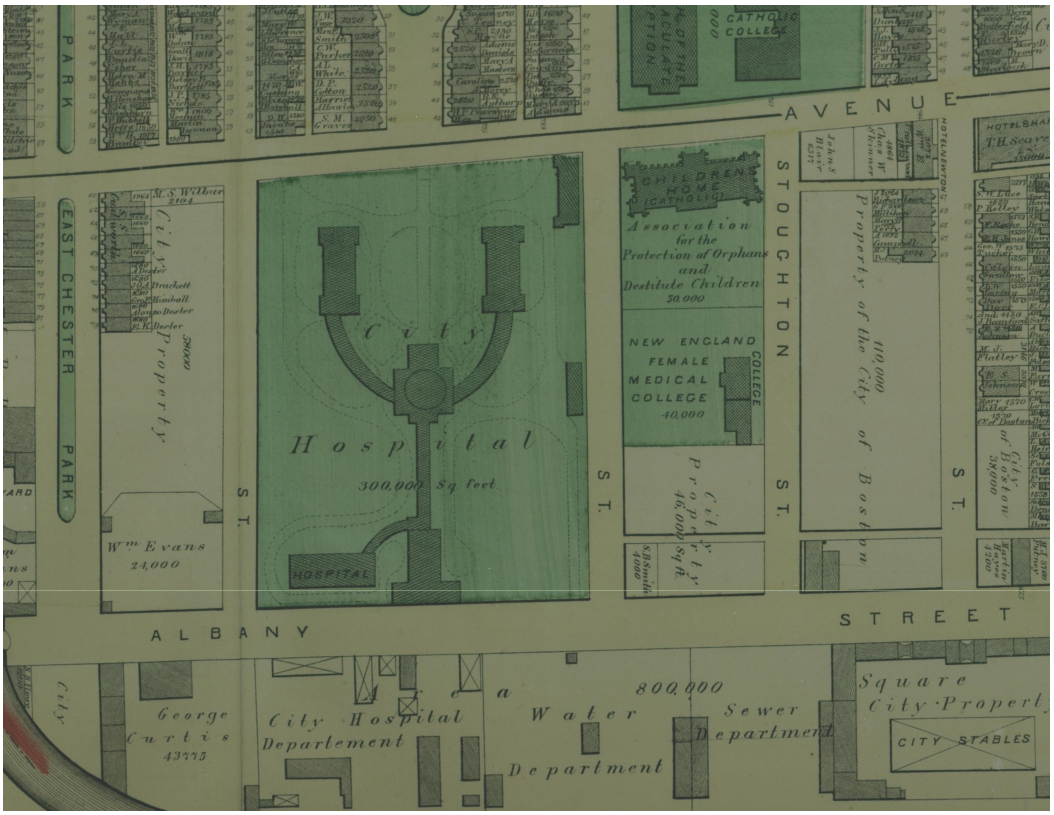

Figure 3: This map of BCH and the adjacent area by G.M. Hopkins & Co. gives a better view of the relative locations of the buildings shown in Figures 1 & 2, which form a "Y" shaped configuration in the area marked "City Hospital." The prongs of the "Y" are Pavilions I (right) and II (left) reaching up toward Harrison Avenue, which angles across the top of the map. The lower sections of the prongs are the curved, covered colonnades, which then connect to the administration building in the center, its dome represented by a circle. The lower section of the "Y" goes straight down to the boiler house that fronts on Albany Street. Pavilion III is the offshoot building to the left of the base of the "Y." Though published in 1874, this map must have been made a year or more earlier, as it still shows the New England Female Medical College to the right of the City Hospital grounds, even though it had become the Boston University School of Medicine the year before. But this was before the major changes to BCH outlined in Figure 8-10 below.

Figure 4: This elevated close up of the domed Administration Building, probably taken from Pavilion I, gives a better view of its architectural details. The boiler house with its smokestack, directly behind the domed structure, is visible from this angle.

Figure 5: A ground level closeup of the domed Administration Building and the curved paths leading to it. Unlike most architectural views of that era, this one contains people. On the right a woman in a long dress of that period approaches along the path, while in the background a man sits on the buttress on the left side of the wide stone stairway. They give scale to the image, but also remind us that this hospital was a place that cared for people.

Figure 6: Another relatively early view, this one taken on an angle that shows most of Pavilion I but only the front corner of Pavilion II. In the foreground, cobblestones have replaced the plain dirt seen along Harrison Avenue in Figures 1 and 2.

Figure 7: An unusual view taken from behind the Administration Building, looking toward Harrison Avenue. The curved colonnades lead to the backs of Pavilions I and II. On the far left, the front corner of the steam house is just barely seen. And though it doesn't show well in this scan, what appears to be a vegetable garden fills the space to the right of the domed building. At the far right, the Church of the Immaculate Conception, which still stands, is seen. Its corner stone was laid in 1859, thus predating BCH.

Figure 8: This is an important transitional view. On the right, the covered colonnade now runs only a short distance before meeting a new building, its construction scaffolds still in place. The same scaffolding is also seen on the left, though the actual new building on that side is outside the field of view of this photograph.

Over the hospital's first decade, the population of the city grew, and the demand for beds increased. In 1874, the trustees and medical staff convinced the City Council to appropriate funds to enlarge the medical and surgical wards. This was accomplished by constructing two new buildings between the existing Pavilions I and II and the Administration Building on either side. The covered colonnades were thus shortened on both sides as these new buildings filled most of the space they had occupied.

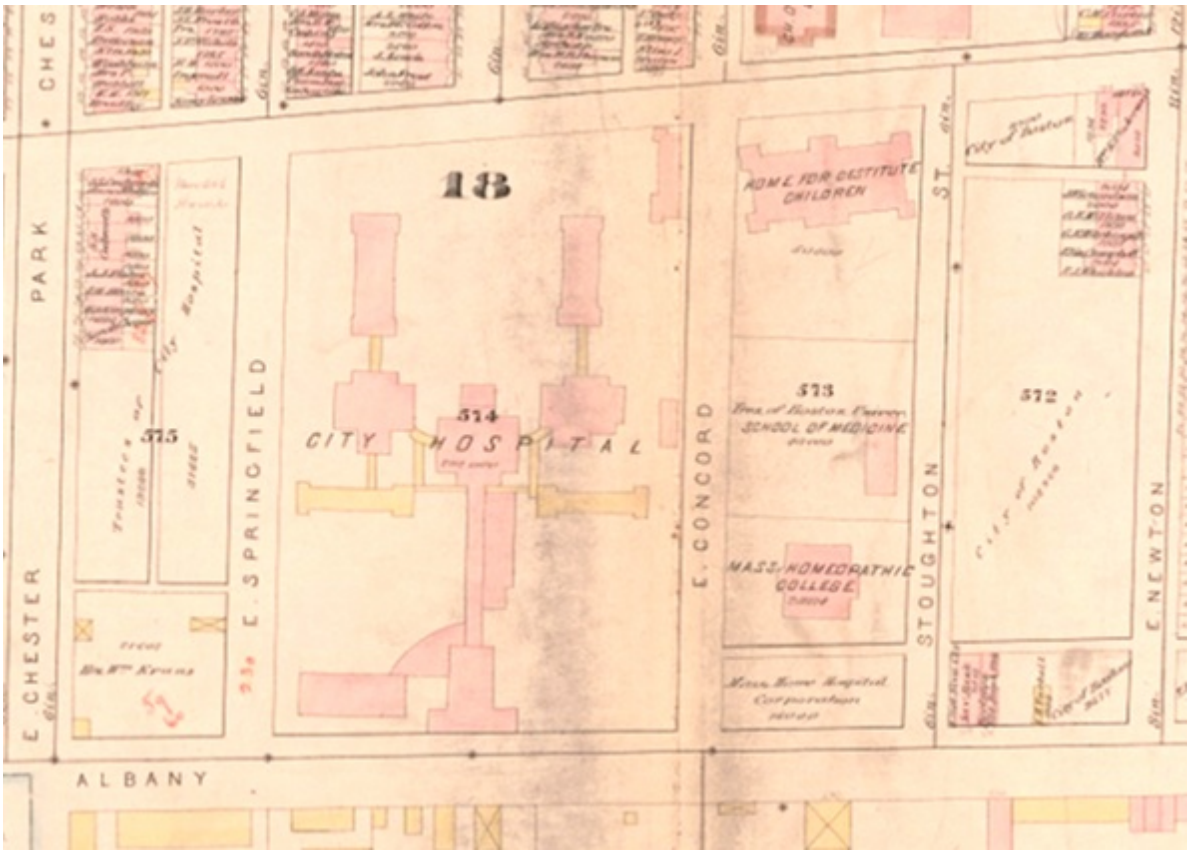

Figure 9: This map published by G.W. Bromley & Co. in 1883 shows the relative positioning of the two new buildings between the original pavilions and the Administration Building. As in Figure 3, Harrison Avenue angles across the top of the map. The words "City Hospital" are printed right through the two new buildings and the domed Administration Building.

Figure 10: This is perhaps the best 19th century view of the Boston City Hospital, partly because the original is a larger format, single 4 x 6 inch photograph which gives greater detail than a 3 x 3 stereo half. The two new buildings have been completed. It was said "they had the same general style as the two older pavilions,[…]and care was taken to place them agreeably in relation to the Administration Building." [3] The result was a clear cut aesthetic success. This front façade view of the Boston City Hospital, taken across Harrison Avenue from the entrance to Worcester Square (see the corner sections of pavement in the foreground on either side) inspired numerous engravings that appeared in books and periodicals, disseminating this image to a much wider audience (see Figures 11 and 12).

Figures 11 & 12: Two engravings of the front façade view of the Boston City Hospital, the top one from *King's Handbook of Boston*, [4] the other from *A History of the Boston City Hospital*. [5] Based on photographs like the one in Figure 10, this became the signature view of BCH. In the era before about 1890, when photographs could not be directly reproduced on the printed page, engravings such as these in books and periodicals brought this image to a wide audience.

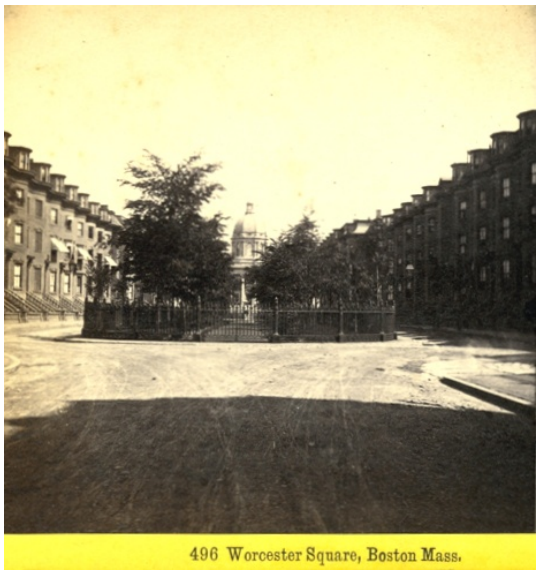

Figure 13: The Boston City Hospital became an architectural landmark for the entire South End. The subject of this photograph is Worcester Square, taken from the Washington Street side. But the most noticeable structure is the domed BCH Administrative Building across Harrison Avenue in the background.

Figure 14: Modern comparison photo on the bottom, taken by author James Brust in 2013. The view is across Harrison Avenue from the entrance to Worcester Square. The domed Administration Building was removed in the 1930s, the additional medical and surgical buildings added in the 1870s are no longer present, and no trace remains of the covered colonnades. But the original Pavilions I and II still stand, now named BCD (left) and FGH (right). Those letters were the names of wards in those buildings. These were the first two Boston City Hospital structures used for patient care when BCH opened in 1864. Thankfully they still stand --- they ought to be preserved, marked, and remembered.

◆

Notes:

[1] Cheever DW, Gay GW, Mason AL, Blake JB, eds. *A History of the Boston City Hospital, From Its Foundation Until 1904*. Boston: Municipal Printing Office; 1906. Page 1.

[2] Ibid, 8.

[3] Ibid., 11-12.

[4] King M. *King's Handbook of Boston, Profusely Illustrated*. Boston: Moses King Publisher; 1878. Page opp. 208. This book was enormously popular, and reissued on a yearly basis for over a decade, with this view of the Boston City Hospital in each printing.

[5] Cheever, frontispiece.

Pictures of Babies:
Massachusetts Memorial Hospitals' Outreach to Servicemen in WWII

A'Llyn Ettien, MLIS
Head of Technical Services
Boston University Alumni Medical Library

Unimpressive at first look, one plain manila folder in the Medical Library Archives contains what must be among the most interesting historical collections on the Boston University Medical Campus. Labeled "Servicemens' replies acknowledging pictures of babies 1943-45", the folder contains 163 letters, typed or handwritten, on yellowing paper ranging from irregularly shaped sheets to stationary with the imprint of organizations like the United States Navy, the American Red Cross, and many others. As the label states, these letters express the appreciation of servicemen in the U.S. military who received photographs of their newborn babies, and they come from as near as Dorchester, or as far away as India, China, England, the Philippines, and "somewhere at sea."

The letters are held in the archived records of the Massachusetts Memorial Hospitals (MMH), BUSM's affiliated hospital during the war years. That relationship has continued through several name changes (to University Hospital, BU Medical Center Hospital, and finally, after the merger with Boston City Hospital, to Boston Medical Center, today), making this collection part of just one chapter in the complex history of the BU Medical Campus.

Specific context is unfortunately scanty, with nothing in the Archives except the labeled folder and the letters themselves. We can see that the MMH Hospital Aid Association arranged to send a photograph of a mother and her newborn to the deployed father whenever a serviceman's wife delivered a baby at the hospital, but how many such babies were born, the operational dates, costs and organization of the program, and other information is unclear. Still, it's possible to gather plenty of fascinating details.

One imagines it must have been a satisfying task for the person responsible for typing a letter and sending the photograph on its journey: an opportunity to give good news and joy to someone who might be assumed to have special need of it. Judging from the responses, this service was often unexpected. The photos were received, in the words of two writers, as a "most welcomed surprise," and an idea "most novel and highly appreciated."

In retrospect a photo of his new baby may seem an obvious way to brighten a serviceman's day. Yet the above comments, along with another soldier's statement that "It is one of the best things I've heard of since I've been in the service," suggest that not every hospital had an Aid Association able to provide this encouragement. In fact, this may have been a special benefit to delivering at MMH. The program, one man writes, "is a very thoughtful and splendid idea, and if other hospitals […] only knew of the joy and happiness received […] I'm sure they would also adopt such a very fine policy."

Unfortunately, none of the photographs are archived, but we do have an example of the note that

"SOMEWHERE IN GERMANY"
20 March 1945

Aid Association
c/o Mass. Memorial Hospital
750 Harrison Avenue
Boston, Mass.

Dear Friends:

Words are inadequate to express my gratitude for the picture of my new Son, which I received today through your thoughtfulness and kindness.

Little do those at home realize how much this service means to a soldier far far from home. We "sweat out" the babies birth and the health of our wives, we wonder what the new edition to the family looks like, never knowing when we shall be seeing our loved ones in person, therefore when I received my picture today of them, and sent in the spirit that it was sent, it made me feel very very happy and fortunate.

It is a wonderful thing for us soldiers, that there is an organization such as yours, that performs this grand service for us expectant fathers over-seas, and I assure you that this gracious act will linger in my memory as one of the nicest thingsthat has happenned to me during this terrible war.

May I extend my most sincere thanks and the thanks of my wife for this wonderful service. It is indeed gratifying to know that there are friends and an organization such as yours, at home, that do not forget the little things which mean so much to us over here.

Closing with every kind wish and assuring you that the happiness you made possible for me today will never be forgotten, I am,

Gratefully yours,

John W. DuCett

John W. DuCett
Pfc, 330th Inf,
U. S. Army

Free

File copied

UNITED STATES ARMY

July-15-'15
Camp Lee Va

Dear Sir

I want to thank you very much for the picture you sent me of my wife and the baby. I'm sorry I did not write you before but it seems as tho your letter went from Maryland where I was stationed to California back to Virginia where I am now stationed, and I just received it Fri. the 13th. I have been fortunate enough to go home and see my family, but I appreciate the picture very much and want to thank.

accompanied them. A brief, matter-of-fact statement, it gives the date and time of birth, the child's sex and weight, and says, simply, "Thinking it would add to your happiness to have a picture of your new son [or daughter], a photograph is enclosed."

The pictures were not always unexpected: women, aware of the photograph and its purpose, may have mentioned it to their husbands in their own letters, and it must sometimes have been a matter of which envelope arrived first. One soldier says, "I was told that you were sending me a picture of my wife and baby and I've been waiting patiently ever since." (He goes on to say, "But may I add it was certainly worth waiting for.")

One letter observes that the photo was taken by Bob Keller, whom the writer knew as someone "active with the United War Fund for many years." No information about Mr. Keller is archived, but this suggests he was the photographer (or one of multiple photographers), retained by the Aid Association to visit the hospital and take the pictures. This must have been satisfying work, knowing that the photo would be welcomed by far-off fathers, helping to assure them of the substance and reality of a child they might not see for months. As one man wrote, "It was doubly reassuring to me after my long wait to see that he was well in addition to hearing it."

Others describe the pictures as "the most thoughtfull [sic] gift that I have received from any society […] during my army career," and "the best gift I have ever gotten." Many writers also mention that they will cherish the picture and carry it with them. This must have been wonderful encouragement for Aid Association members, providing clear confirmation that their work was appreciated.

At varying lengths and in the different words chosen by each writer, the letters explain how much it meant to men stationed in foreign lands or at sea to receive a picture of a child they had yet to see in person (and perhaps, in some cases, would not live to see). Some, written after a return home, suggest the strength of those feelings: even after returning to Brookline, Melrose, Wakefield and other local towns, with the adjustments of re-entry to civilian life, they felt it important to write a note to the hospital superintendent, thanking him and the Aid Association for the chance to see their new baby as soon as possible.

Today, when nearly every new mother delivering at BMC must own a camera and/or a phone capable of taking and sending pictures, it's unlikely anyone would much appreciate the hospital sending a photographer to snap a picture for a military parent. In the mid-1940s, however, when a much less casual relationship to photography prevailed, it must have been a remarkable and precious thing to receive that first image of a newborn child.

The mailing was not entirely selfless: the Aid Association did not miss the opportunity for promotion. The letter with the baby's birth information included a paragraph explaining that the picture was provided "due to the thoughtfulness of the members of the Aid Association […] made possible by use of the money the Association has provided." A pre-addressed envelope was also included, in stated anticipation that fathers would like to "acknowledge receipt" of the pictures. (This envelope remains attached to many letters, demonstrating the still-true fact that it's always good for the response rate to make replying as easy as possible.)

These letters thus represent a partly prompted response, perhaps as much as a spontaneous outpouring of gratitude. Indeed, at least one soldier declined to send a grateful note, which works to our advantage today: our example of the text that accompanied the photos is one of these Aid Association letters, returned with a crisp "Receipt acknowledged" scrawled at the bottom above the signature of the father. Whether this man was busier than others, less impressed with the art of photography, or simply not given to wordy declarations, is impossible to say. Regardless, his laconic reply is appreciated now, since it gives us the content of the letters sent along with the pictures; something we could otherwise only guess at.

Many letters are perfect examples of the classic thank-you prescribed by etiquette advisors, with specific, positive mention of the item received ("The picture came out swell") and how pleased the recipient is ("It really is a great thing to have a picture of the baby at such a young age"). If necessary, an apology is offered for the lateness of a reply, usually described as due to a delay in receipt of the picture, or difficulty writing ("I've just returned from a furlough, and it's been waiting here for me all that time," or "I'm living under combat conditions, and even getting the paper and envelope to write was a lucky stroke"). Another soldier, as long as he was writing, took the opportunity to request

3-31-45

Fri6

Dear Sirs,

I'm writing you this short note to thank you for the wonderful picture of my wife and daughter. To tell you in words how grateful I am is impossible. I know my wife is just as grateful as I am. I new as long as she was at the Mass. Memorial, she was getting the best of care.

I wish I could come up and thank you all personally, and perhaps when I get home I will.

In closing I want to thank you all again, for everything. May God Bless you all for your thoughtfulness and kind-ness.

Very truly yours,
George N. Bernstein

The Famous B-29 Superfortress

File
copied

Czechoslovakia,
June 28, 1945

Aid Association,
Mass. Memorial Hospital,

Dear Sirs:

I am very tardy in acknowledging the receipt of my wifes & baby's picture which you have been so kind to send to me.

It was a wonderful picture & I keep it with me at all times. I am sure all the fathers in the service appreciate what you are doing.

In closing, I thank you again for the picture.

Yours very truly,
Arthur R Legerstedt

assistance, citing Circular No. 17 and asking the Aid Association to let his wife know she shouldn't pay for medical services covered by the War Department.

Even if prompted by the written expectation that they would send a thank-you note, the personal phrasing and sincere pleasure expressed in many of these letters is clear evidence that the servicemen sincerely valued this program. While there is obviously a strong common theme to the letters, it's fascinating to see the variation in the way these men approached the task. Some are rather informal, signing off with a first name, while others spell out their full military title. Some have typed their letters, which is often more legible but which also conceals the sense of personality that can show through in the handwritten notes.

These latter pieces are neatly printed in block letters, or written out in elegant script, or quickly scrawled, as if the writer simply wanted to discharge a duty and move on. Some suggest ease and fluency with the written word, while others are somewhat clumsy, likely displaying varying levels of education and familiarity with the forms of the day ("I remain, very truly yours," etc.). This hints at the way in which wartime, like the experience of the faraway birth of a child, can blur socioeconomic lines; regardless of their hometown, civilian profession or level of education, all these men write as members of the United States military and as fathers of newborn children, all having benefited from the same hospital program.

Most writers, understandably hesitating to speak with confidence about a child they didn't yet know in person, maintain a certain reserve regarding their infants, generally referring to him or her as "the baby" and rarely mentioning a name. This makes especially interesting the letters in which men do talk about their children.

One writer, clearly thinking of his daughter as a specific person already, says he "can hardly wait for a leave and a chance to meet the young lady who I understand is already taking sunbaths and carrying on in similar shocking ways!" Another imagines his new son following in his footsteps, saying he is "indeed a happy father to have had a son who will someday take my place in the Marines."

These letters would likely not be especially valuable from a military historical standpoint. They tell us nothing about the course of the war, or the everyday experience of the men who fought. At most, they show some of the many places around the world in which U.S. servicemen found themselves during these years.

What they offer instead of news about battles and troop movements is a series of small glimpses of the ways in which life at home went on, and institutions attempted to share that continuity by allowing for enjoyment of a broadly human, yet profoundly personal moment. Civilians at home may never truly understand the soldier's wartime reality, but they can try to share their own news, to ground the wanderer and remind him of the world waiting for him. The existence of this program speaks eloquently of the way non-military institutions sought to support the servicemen abroad during the years of World War II, and highlights the uniquely intimate ability of a hospital to touch a person's life at the most vulnerable and momentous of times.

'You have a child,' the photos said. 'You may be far away, in an environment where something like birth is nearly irrelevant, but see, that world still exists: you have a child, and here is a picture of that tiny new face.'

There is evidence that the program was perceived in this supportive fashion. One man wrote "It is indeed gratifying to know that we in the service have people like you behind us," while another states, "You won't know what a consolation it is to see such goodness all around me." Finally, another man, speaking no doubt for many: "Let's hope & pray this war with Japan ends soon so the service men & women can return to the land & loved ones they adore."

At this remove in time, and with nothing more to go on, we can only hope they all made it safely home, and that their later lives, and the lives of their sons and daughters growing up in the busy years after the war, were happy ones. Some of those children likely still live in the neighborhoods and towns around Boston and the BU Medical Campus. Perhaps some of those photos are still tucked into old family albums, little slivers of history mutely speaking of the way life moves on even in the midst of war's uncertainty, and people reach out to others to offer what comfort and support they can. ◆

All quotes taken from letters in the folder "Hospital Aid Assn. WWII: Servicemens' replies acknowledging pictures of babies 1943-45" in the Boston University Alumni Medical Library Archives.

The Cincinnati Cholera Epidemic of 1873 as a Force in 19th Century Urban Community Dynamics

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Department of History
Western Kentucky University

Dr. Theodore Eversole is currently an Adjunct Assistant Professor of History at Northern Kentucky University and the University of Cincinnati. Originally from Cincinnati, Dr. Eversole received his BA, MA, and PhD from the University of Cincinnati in 1976. He went on to serve as an Assistant Archivist on the Albert Sabin Archives. Ultimately, his teaching career unfolded in England where he spent 30 years, retiring as Assistant Principal of Ivybridge Community College in Devon. After leaving Devon, he returned with his wife Trisha to Cincinnati where he continues to teach.

According to many historians of medicine, cholera was *la première epidémie du XIXe siècle*. The historiography of cholera is indeed vast, drawing the steady attention of a wide body of scholars who have since the 1980s increasingly focused upon the examination of cholera's epidemic consequences on regional or local areas. Equally important, cholera research also intersects with key historical areas such as transportation, migration, public health development, and urbanization. Given its broad variety of impacts, epidemic cholera provides a useful backdrop to better understand how its visitation could affect important emerging communities such as the Ohio River city of Cincinnati in the 1870s. [1]

One of the most feared diseases of the nineteenth century, cholera's causation remained a mysterious quest throughout most of the century. For the majority of these years, the medical consensus believed that miasma was cholera's principal causal agent. However, causes other than exposure to poisonous bad air, such as the actions of the sun, moon, and stars, among many other diverse theories, were often propagated in the era's medical correspondence to explain cholera's frightful presence.

Epidemic cholera first appeared in Europe in 1817, and was believed to have arrived from India spreading along trade, military, and pilgrimage routes. As the century progressed, the impact of commerce, population movement, and urban living combined to set the stage for a series of worldwide epidemics whose most significant waves struck between 1829 and 1875. The last major western epidemic reached Europe in 1892. Hamburg, Germany, a key immigrant embarkation point, particularly suffered during this visitation with over 8,000 recorded deaths. [2] As historian Charles Rosenberg asserted, "Cholera was the classic epidemic disease of the nineteenth century, as plague had been of the fourteenth. When cholera first appeared in the United States in

1832, yellow fever and small pox, the great epidemic diseases of the previous two centuries, were no longer truly national problems." [3] After mid-century the threat of cholera stimulated more coordinated community responses, especially as medical understanding evolved concerning the social conditions that increased cholera's virulence and death rates. As the nineteenth century progressed, the menace of cholera helped feed the urban reform impulse as local areas looked to eliminate the breeding grounds of infection.

During these years, cholera was clearly a scourge that brought panic wherever it appeared. The impact of the comma bacillus was truly devastating, and the speed at which cholera killed was particularly frightening. The onset of symptoms brought about bouts of rice water-like diarrhea, vomiting, and cramping, but it was the resulting, and often rapid, dehydration that was most shocking, frequently bringing death within a matter of hours. Upon death, bodies were frequently left curled into a fetal position and were subsequently buried in such a state. Those affected would:

shrink into a wizened character of his/her former self within a few hours, while ruptured capillaries discolored the skin, turning it black and blue. The effect was to make mortality uniquely visible: patterns of bodily decay were exacerbated and accelerated as in a time lapse motion picture, to remind all who saw it of death's ugly horror and utter inevitability. [4]

Nineteenth century treatments to meet such a horrible disease varied over the decades, and produced a constantly changing array of nostrums and remedies, including applications of vinegar, mustard, laudanum, and calomel as well as other ingredients drawn from the age's *materia medica*. Bloodletting and assorted baths were also tried, but all without effect. In terms of curative properties, death rates throughout the century showed little variation between those medically treated with these and other cures, and those totally lacking medical intervention.

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It would not be until 1883 that future Nobel prize winner Dr. Robert Koch (1843-1910) identified the comma bacillus as the cause of cholera. In doing so he helped to confirm a pathogenic explanation for this contagious disease. Yet even in the face of Koch's evidence, there were still prominent scientists such as Munich's Max von Pettenkofer (1818-1901) who as late as 1884 still professed a belief in miasma as cholera's causative agent. An additional step towards real prevention came in 1893 when Dr. Waldemar Haffline (1860-1930) produced the first successful vaccine for cholera, which offered a measure of hope for more systematic control.

Although effective treatments now exist, including vaccines and oral rehydration therapies, cholera remains a serious disease whose continued presence can be found in the Middle East and Africa, where serious epidemics occurred in the 1960s and 1970s. In 1991 cholera again struck the Americas, for the first time in 100 years, erupting in Peru where it spread to infect some 400,000 people worldwide and cause 4,000 deaths. Cholera's continuing ability to kill was once more evidenced during a 1994 outbreak in Zaire, which killed 50,000 refugees, and even more recently in Haiti where hundreds of thousands have been affected since the recent earthquake. [5]

As early as 1854, Dr. John Snow of London suggested that cholera's spread could be traced to contaminated drinking water. His investigations examined water collected from the River Thames, with particular attention given to those suppliers who drew their water from sections of river water not far from sewage outlet pipes. From his research, Snow produced convincing data, and suggested preventative courses of action; however, he lacked a universally acknowledged causative agent such as the microbe that could be attached to the contagion's spread.

Although Snow was on the right track, his work was slow to influence public health policy, or convince the medical community that infected water was a source of transmission. Nevertheless, in time epidemic diseases such as cholera did help establish boards of health. As the boards' presence became more readily accepted within city bureaucracies, they could focus their attention upon improving urban hygiene. The initial public hygiene drive was led by England's Secretary of the Poor Law Commission, Edwin Chadwick. In 1842 Chadwick published his *Report into the Sanitary Conditions of the Labouring Population in Britain* which drew an early link between urban

living conditions and disease. However, in Britain and elsewhere, the boards of health that were created during the 1840s and later were often temporary, lacked the full powers of sanitary enforcement, and failed to understand the actual nature of disease. Taken as a whole, such boards were fairly ineffective when an epidemic struck. In addition, local community leaders were fearful of the bad publicity a cholera epidemic could have on ordinary business activities. Nevertheless, even in the face of such limitations, by the 1860s the board of health concept had spread to the United States, and such boards would in future decades compel urban areas across the nation to subscribe to the general tenets of sanitary reform as a means of disease control. [6]

The Cincinnati Cholera Epidemic of 1873

Cincinnati's last major battle with cholera occurred in 1873. By the beginning of that decade Cincinnati was the third leading industrial city in the nation and a manufacturing and commercial base for an expanding nation, facts which gave substance to the city's claim to be the "Queen City of the West." Cincinnati's population of over 200,000 lived for the most part in densely crowded housing in the city's central basin, which stretched north from the edge of the Ohio River for over a mile. Cincinnati was also a transport nexus as it sat at the terminus of the Miami and Erie Canals, and after the 1850s its expanding railroad links tied the area to New York, Chicago, and points south. In addition, vibrant riverboat traffic provided both upriver accesses to Pittsburgh and downriver connections all the way to New Orleans.

By the 1860s new more salubrious suburbs were planted along the surrounding hillsides, which extended the city's radius by over four miles from the center. In addition, Cincinnati was a city of immigrants, part of the late 1840s national surge in immigrant arrivals. As the census from these years revealed, 27% of the local population was German-born, and the percentage of the work force that was German was over 40%. [7] It was these immigrant groups, many of whom lived in crowded and poor conditions, that often suffered the brunt of cholera's effects and took the blame for the spread of the disease.

Cholera had struck Cincinnati before, arriving first in 1832-34. This first encounter produced 831 deaths. Cholera returned, between 1848 and 1850 and claimed a further 4,114 lives, and appeared again in 1866 when it killed an additional 2,028 city residents. However, by the time of the 1866 epidemic, although as severe as before, the city had evolved in terms of its community responses. Alan I. Marcus' important research has indicated attitudes had changed and these new circumstances "stemmed directly from the notions of cities as social units and health as a discrete public problem." [8] As Marcus further stated, "The 1866 cholera outbreak made it politically inexpedient and dangerous to pursue city-state and interest group squabbles without first erecting health departments in some form." [9] Therefore, city boards of health did not simply appear but were a concerted response in light of political and popular pressures. In addition, after 1865 there was a clear move toward extending board powers to make for a more truly functional organization. According to Marcus' analysis, "two critical issues" had to be resolved: "the battle for medical primacy" and the "contest between city and state for municipal control." [10] Such political contests, as well as medical debates over cholera's causes, made preparation for epidemics more difficult. However, by 1867 a new city health law was passed that firmly established a health board with tax powers and staff to deliver improved sanitary control and enforce new health codes. [11]

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Although progress had been made in reforming health provision along with other aspects of city government, 1870s Cincinnati was wracked with numerous concerns, including political scandals and rivalries as well as economic divides, which created a generally unpleasant operating environment when significant crises occurred. The national economic recession of 1873 made matters worse and contributed to the growing labor unrest of the period, which saw the city average twenty-five serious strikes a year during the 1870s. Economic challenges, political discord, and lost markets to cities further west all added to a general spirit of urban malaise. As sociologist Jeffrey Haydu stated,

"Cincinnatians felt besieged by urban social ills, from intemperance and prostitution to violent crime and they criticized city officials for being too corrupt or incompetent to maintain order." [12]

Yet it was precisely in such political and social circumstances that Cincinnati's last major cholera attack occurred. The 1873 epidemic produced 207 deaths out of a total city mortality of 5,641 for that year. [13] Although the civic health framework had changed, as did city expectations, cholera remained a deadly threat to many local residents and a charged political issue for local governance.

Cholera's Arrival and Infestation

The 1873 cholera epidemic first erupted in New Orleans on February 9, 1873, and subsequently traveled north aboard the steamboat *John Kilgore*, which suffered three cholera deaths before arriving in Cincinnati on May 23, 1873. [14] The first fatal case with city origins was that of Philatine Gundlock, aged 45, of 57 Oliver Street, which occurred on June 14, 1873 in an area close to the crowded Over the Rhine area near the city center. By the end of July, 117 deaths had followed, and the disease didn't fully abate until October 18, 1873.

Dr. J. J. Quinn, the city health officer, believed, as reflected in his 1873 report, that "no connection can be established between the first fatal case of cholera and any steamboat, landing, railroad depots, imported cholera patients, or persons from a locality where the disease has been prevailing." [15] Furthermore, Quinn's viewpoints were seen as authoritative since he served as a representative of the city's official public health organization. Quinn's conclusion suggested that "cholera required certain geological and meteorological conditions for its development," and "resulted through the nervous system by exhaustion, fear, anxiety, or other depressing mental emotion; through the digestive organs by imprudence in eating and drinking; and through respiratory and circulatory systems, by inhalation of noxious vapors or of vitiated and impure air." [16] In addition, Quinn's report suggested that Cincinnati's 1873 bowel disorders were, perhaps, not even "true" cholera, and he further declared, "The epidemic furnished no proofs of contagioness. Indeed very few of the cases were at all reconcilable with the theory of contagion." [17]

In contrast the federal official inquiry into the epidemic, the *Cholera Epidemic of 1873* in the United States, differed in several substantial ways from Quinn's assessment of the epidemic. The federal inquiry was unequivocal in its charge that "the cholera epidemic was carried from New Orleans to Cincinnati by human beings," and argued that "the first cases of cholera occurred in Cincinnati after the arrival of the steamboat, *John Kilgore*, from New Orleans." [18] This document also concluded that the first cases had a connection to the steamboat landing and other cases broke out in the vicinity of the first and second cases. [19] The national report suggested the possibility that cholera was contagious and spread through specific contacts and city locations. This conclusion showed an early awareness of infectious transmission, a decade before Koch's confirmation, and further argued that "sanitary science" as seen in Europe was the solution to the devastating problems posed by cholera.

On the local level, there were others from the medical community who likewise contested Quinn's official version of the epidemic of 1873, and, in turn, endorsed the national report's verdict. For example, Dr. F. Dowling, a physician based at 9th and Linn streets close to many of the cholera cases, wrote in 1873, that the "present epidemic has passed along routes of travel, has been propagated by water contaminated with faecal matter, has attacked most freely those living in low and crowded portions of cities, has produced in its victims all the symptoms and results of true cholera, and is therefore, in our opinion, nothing else than cholera." [20]

Since it is now clearly understood that contaminated water is the vehicle most often associated with cholera's transmission, the state of Cincinnati's sanitation in 1873 had a direct bearing on the history of the 1873 epidemic. The official Quinn report stated that at the time of the outbreak of the disease in Cincinnati "the streets and alleys were clean, and the city [was] generally in a fair sanitary condition." [21] The idea was also promoted that "the water supply of Cincinnati (was) regarded as among the healthiest furnished any city in the union." [22] This "healthy" city water, for the most part, was taken from the Ohio River, and this water was assumed to be safe for it was gathered from the channel beyond reach of shore drainage. [23] In addition, to better distribute the city's water, 783 hydrants, and six

plus miles of new pipe were erected in 1873, giving Cincinnati 154 miles of total water pipe. For sewage purposes, the city, since 1858, was divided into two separate districts: the one lying west of Freeman, between Eighth and Bank, and the other comprising that portion east of Freeman, and also that west of Freeman and south of Eighth. In both instances, the Ohio River, the source of the city's water supply, was the final receptacle for the city's untreated waste. [24]

As was established six years previously, a full time, permanent board of health was empowered to oversee the city's general health and sanitation and by 1871 had divided the city into six health districts. To assist the board of health, it was the "duty of the mayor to detail from the regular police of the city, or to make new appointments for the purpose, such number of policemen as the board may require for the enforcement of proper sanitary measures." [25] This "sanitary squad" was in theory under the exclusive control of the city's board of health. However, during 1873, the board's control of the sanitary squad was transferred to the Board of Commissioners of Police, and efficient enforcement was apparently lost. It is unclear why the transfer occurred, but the police commissioners did not support the cleanup effort and disregarded Board measures. Furthermore, there were too few patrolmen assigned as sanitary inspectors so little was actually accomplished. This situation though did not go unchallenged at the time, for critics were beginning to see the need for specific educational qualifications for those undertaking sanitary inspections. [26] Professor Marcus linked this and other criticisms to a number of political issues that arose in the 1870s involving irregularities in the comptroller's office, police department, board of city improvements and board of education. [27]

Nevertheless, even in the face of political factions and failures, over 13,174 nuisances were reported during the epidemic year, in a city that purported to be in fair sanitary condition. [28] Besides problems involving control of the sanitary squad, the board of health also suffered in 1873 from a lack of cooperation with the board of the sewage commission, an essential agency in the development of an effective and coordinated public health policy. [29] It was also not until 1889 that the city recommended the compulsory connection of all houses to the municipal sewage system, a fact that greatly helped the board of health's regulation of the disposal of household waste. [30]

The Cincinnati press provided active coverage of the epidemic throughout its course. Only days after the first fatality, and in advance of many in the medical community, a report appeared which stated that "the disease was propagated by the excremental discharges of persons affected by the choleric poisons, aided by local causes." [31] The *Daily Gazette* went on to recommend whole scale purification, disinfection, and sanitary cleansing. [32] Local conditions were often vividly described and lamented. Reports appeared describing neglected privies, filth sodden grounds, foul cellars, poorly drained surroundings, foul and obstructed house drains, decaying and putrescent matter, both animal and vegetable, and unventilated, damp, crowded dwellings. Suggestions for house cleaning, such as the use of quick lime, coal tar, carbolic acid, and white wash were circulated. For privies, specific formulas for disinfection, using eight to ten pounds of sulphate of iron in five to six gallons of water, in combination with a pint of carbolic acid were also published. [33] As a personal hygienic advisory, the *Daily Gazette* suggested temperance, pure drinking water, fresh and substantial food, rest, and bathing as cholera preventatives. [34]

The *Daily Gazette* also warned that "to conceal the fact of the presence of cholera is criminal" and that although the "truth has cost businessmen of this city some money, it has saved the lives of many of our citizens." [35] In the midst of the epidemic, the paper also argued for the immediate connection of the city's sewers as a step towards improving the city's public health. However, the *Gazette* further explained the reason for the haphazard sewage system as being "not the policy in Cincinnati, because the city is not well regulated." [36] The press also used its pages to remind the public of particular problem areas, such as the open spring on Lock Street, between Sixth and Eighth Streets. Here in this densely packed and insalubrious section of the city was a neighborhood where the cholera epidemic of 1866 was ultimately traced. [37]

The general state of Cincinnati's housing in 1870 was regarded as deplorable. To further complicate the issue, the city was known as the most densely populated in the country per square mile. Cincinnati had 1,410 tenement

houses which were each home to six or more families, and most of these buildings were served by a single privy. Forty per cent of these families lived in one room, and eighty-three per cent of these rooms had but one window. [38] Under these conditions, 5,000 privy vaults were declared nuisances in 1873. The possibilities for infection from the ill contained and haphazard disposal of human waste were obvious. This reality was reflected in the fact that 142 out of Cincinnati's 207 cholera deaths, or sixty-nine per cent occurred in the tenement setting with dubious sanitary amenities, while only 22 deaths or 11% were recorded in the city's hospitals. [39]

In medical terms, the local therapies for cholera's treatment in 1873 varied little in substance from those used in earlier epidemics. Although prescriptive dosages changed over time, a combination of emetics, narcotics, poisons, and anti-spasmodals were employed. Doctors continued to proclaim their successes, on a case by case basis, in the many of the medical journals of the period. [40] The substances most often mentioned included: ipecac, aconite, sinapism, morphia, quinine, camphor, calomel, atrophia, and bismuth. [41] The serious problem of dehydration in cholera cases was generally not medically addressed; however, the 1873 epidemic did witness a rise in the use of the hypodermic syringe as a delivery agent for prescribed medicine. Besides pharmaceuticals, physical phenomena, such as electricity, were sometimes put forth as cholera cures. As often was the case in the past, cholera victims had to contend for survival not only with the ravages of the disease, but also with the ministrations of the doctors. Although the miasma etiology was steadily losing ground to the microscope and germ theory, many doctors in 1873 still followed the "bleed, purge, puke, and sweat" treatment methodology.

Although the response to the 1873 cholera outbreak may seem poorly handled, as were the responses to other water born diseases such as typhoid, it did produce some positive results as seen in the increasing demand for better public sanitation. When translated into concrete political action there were clear expansions in the regulatory powers of individual boards of health both locally and nationally. Several years before, in 1869, Massachusetts established the initial pattern of state health coordination and oversight. [42] In April 1886 the Ohio General Assembly finally followed suit and created the first state board of health with an annual appropriation of $5,000. In the process Ohio became the thirty-second state to have such a body.

The general state of housing in 1870 was regarded as deplorable. The city was known as the most densely populated in the country. Cincinnati had 1,410 tenement houses which were each home to six or more families.

The importance of clean water supply in the public health arena was finally recognized in the March 14, 1893 amendment to Ohio's 1886 board of health legislation. Here it was stated that "no city, village, corporation, or person shall introduce a public water supply or system of sewerage or change or extend any public water supply or outlet of any system of sewerage now in use, unless the proposed source of such water supply or outlet for such sewage system shall have been submitted to and received the approval of the state board of health." [43] From such concerns, regulation of sewerage treatment plants and garbage disposal facilities soon followed. Incorporated as part of the 1886 state board of health legislation was also the realization that an accurate state-wide system of collection, tabulation, analysis, and interpretation of vital statistics was necessary for establishing proper planning and procedures in public health policies.

Circumstances in the nineteenth century allowed for too much local variance, and thus contributed to an uncoordinated approach to crises caused by epidemic diseases. Even though this piece of legislation saw an early need for comprehensive health data collection, a completely satisfactory system of vital statistics procurement did not materialize until passage of the Ohio Vital Statistics Law of 1908. [44] It can be argued that, in general, cholera epidemics and their destructive impacts on local communities provided a critical initial mechanism for the regulatory trends later seen in the Progressive era's early twentieth century search for order.

Cholera's grim and deadly arrival helped communities begin to examine their social fabric. The lessons learned concerning the relationship of disease to impoverished urban conditions though were not totally understood and acted upon until the twentieth century. Nevertheless, in some progressive medical and political

quarters, cholera helped heighten reform awareness. In time, this association would be of tremendous benefit in later twentieth century struggles against other serious diseases such as tuberculosis, whose infectious rates increased in similarly unhealthy social circumstances. Here, as with the battle against cholera, the great bacteriologist Dr. Robert Koch would play an instrumental role. His discovery of the *tubercle bacillus* in 1882 helped set the stage for containing tuberculosis in the twentieth century. [45] Although great victories have been made in the battles against infectious diseases, such diseases remain leading causes of death worldwide. In the United States infectious diseases such as HIV, pneumonia, and influenza still appear in the top ten list of killer afflictions and, although advanced water and sanitation treatments have offered control, cholera continues to exist and remains a serious threat to life if untreated. [46]

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Notes:

[1] Chavalier L, ed. *Le Choléra: La Première Epidémie du XIXe Siècle*. La Roche-Sur-Yon; 1958. For a partial sample of the varied and growing range of Cholera studies include: Chambers JS. *The Conquest of Cholera*. New York: Macmillan Company; 1938., Eichenberg MJ. *Africa in the Time of Cholera: A History of Pandemics from 1817 to the Present*. Cambridge: Cambridge University Press; 2011., Evans RJ. *Death in Hamburg: Society and Politics in the Cholera Years, 1830-1910*. New York: Penguin Press; 2009, Hamlin C. *Cholera: The Biography*. Oxford: Oxford University Press; 2009., Hays JN. *Epidemics and Pandemics: Their Impact on Humanity*. Santa Barbara, California: ABC-CLIO; 2005: 193-201, 211-239., Hempel S. *The Strange Case of the Broad Street Pump: John Snow and the Mystery of Cholera*. Berkeley and Los Angeles: University of California Press; 2007., Kudlick CJ. *Cholera in Post-Revolutionary Paris: A Cultural History*. Berkeley and Los Angeles: University of California Press;1996., Snodgrass ME. *World Epidemics: A Cultural Chronology of Disease from Prehistory to the Era of SARs*. Jefferson, NC: McFarland; 2011., Snowden FM. *Naples in the Time of Cholera, 1884-1911*. Cambridge: Cambridge University Press;2002.

[2] McNeill WH. *Plagues and People*. Garden City, NY: Anchor/Doubleday; 1976:273.

[3] Rosenberg C. Urban Nature and Urban Reform. Louis S. Warren, ed. *American Environmental History*. Malden, MA: Blackwell Publishing;2003,141.

[4] McNeill, 261.

[5] Sherman IW. *Twelve Diseases that Changed Our World*. Washington, DC: ASM Press; 2007: 34. See also Berkelman RL and Hughes JM. The Conquest of Infectious Diseases: Who Are We Kidding? *Annals of Internal Medicine*. 1993;19(5): 426-428., Koch T. *Disease Maps: Epidemics on the Ground*. Chicago: University of Chicago Press; 2011:95-216.

[6] McNeill, 273. See also: Rosenberg CE. *The Cholera Years The United States in 1832, 1849, and 1866*. Chicago: University of Chicago Press; 1962, Johnson S. *The Ghost Map: The Story of London's Most Terrifying Epidemic and How It Changed Science, Cities and the Modern World*. New York: Riverhead Trade; 2006. For a more comprehensive discussion of the development of Cincinnati's Board of Health see Marcus AI. In Sickness and Health! The Marriage of the Municipal Corporation to the Public Interest and the Problem of Public Health, 1820 to 1870, The Case of Cincinnati [dissertation]. University of Cincinnati;1979:333-368. Also Marcus AI. *Plague of Strangers: Social Groups and the Origins of City Services in Cincinnati*. Columbus: Ohio State University Press;1991.

[7] Levine B. Community Divided: German Immigrants, Social Class and Political Conflict in Antebellum Cincinnati. *Ethnic Diversity and Civic Identity: Patterns of Conflict and Cohesion in Cincinnati since 1920*. Shapiro HD and Sarna JD, eds. Urbana and Chicago: University of Illinois Press; 1992:51.

[8] Marcus, 34.

[9] *Ibid*, 35.

[10] *Ibid*, 198.

[11] *Ibid*, 214.

[12] Haydu J. Business Citizenship at Work: Cultural Transposition and Class Formation in Cincinnati 1870-1910. *American Journal of Sociology*. 2002;107(6):1434.

[13] Mitchell EW. Cholera in Cincinnati. *Ohio State Archaeological and Historical Quarterly*. 1942; 51:292. The total number of deaths from the 1873 Cholera epidemic nationally were 7,736. Also see: *Annual Reports of the City Departments of the City of Cincinnati For The Year Ending December 31, 1873*. Cincinnati: Gazette Steam Printing Establishment;1874:382. For a discussion of Cincinnati's most severe Cholera Epidemic that of 1849 see: Eversole TW. The Cincinnati Cholera Epidemic of 1849. *Queen City Heritage*. 1983;41:21-30.

[14] Quinn JJ. *Cholera in Cincinnati in 1873*. Cincinnati: Gazette Steam Printing Establishment;1874:6.

[15] *Ibid*, 69.

[16] *Ibid*, 77.

[17] *Ibid*, 77.

[18] *The Cholera Epidemic of 1873 in the United States*. Washington: Government Printing Office;1875:350.

[19] *Ibid*, 350.

[20] *Ibid*, 350.

[21] Dowling F. "Editorial," in *Cincinnati Lancet and Observer*. 1873;16:506.

[22] Quinn, 69. River pollution was surveyed during 1871-72 and found not to be polluted. See: Roomann RR. *Urban Growth and the Development of an Urban Sewer System: City of Cincinnati, 1800-1915*. Cincinnati: Ronnhu Publishers; 2001:46.

[23] *City Annual Report*. Board of Health Section. 380.

[24] *City Annual Report*, 380.

[25] *City Annual Report*. City Water Works Report. 505.

[26] City of Cincinnati. *Civil Engineer's First Annual Report*. 1858;28. See Roomann, 48.

[27] Marcus, 230.

[28] *Civil Engineers First Annual Report*, 406.

[29] *Civil Engineers First Annual Report*, 408.

[30] Spruck MF. The Development of the Cincinnati Health Department, 1867 to 1972 [dissertation]. University of Cincinnati;1976:45.

[31] Spruck, 47.

[32] *Cincinnati Daily Gazette*. June 19, 1873;5.

[33] *Ibid*, 5.

[34] *Ibid*, 5.

[35] *Ibid*, 5.

[36] *Cincinnati Daily Gazette*. The Health of Cincinnati. June 17, 1873;4.

[37] *Ibid*, 4.

[38] Spruck, "City Health Department," 37.

[39] *Cholera Report US*, 336. See also: Spruck, 46.

[40] For a typical example see Freeman E. The Stimunant Treatment in Cholera. *Eclectic Medical Journal*. 1873;33:441-442.

[41] For a discussion of the standard drugs employed in this era, see Biddle JB. *Materia Medica*. Philadelphia: Lindsay and Blakiston;1873.

[42] Paterson RG. The Decline of Epidemics in Ohio. *Ohio Archaeological and Historical Quarterly*. 1946;50:324.

[43] *Ibid*, 325.

[44] *Ibid*, 326.

[45] A partially effective vaccine for tuberculosis did not appear until 1921. Although Koch is generally credited with the identification of the key bacteria, an Italian, Filippa Pacini (1812-1883), put forth the theory that a *vibrio* caused cholera almost thirty years before Koch. However, at the time his theory was not given serious consideration. The notion that germs caused contagion was suggested as early as 1546 by Girolamo Fracastoro (1478-1553).

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Dengue in Durban, 1927:

The Making of a Public Health Crisis

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On New Year's Day 1927, the editorial page in Durban's leading newspaper, warned of an epidemic in progress: "For weeks, for months past, it has gained in seriousness" and "will doubtless rage furiously throughout the holidays." [1] Since the beginning of the Christmas season, more than 6,300 holidaymakers disembarked from trains from the interior, alighting in the seaside town municipal boosters touted as "the Brighton of South Africa." [2] *The Natal Mercury's* editorial writers confessed: "Our visitors ought to have been warned," but "even the Press, who talked loudly about the smallpox, have been silent regarding the Charleston epidemic" — "wherever two or three and a gramophone are gathered together the disease may be seen in its most virulent form." [3]

The metaphor of epidemic illness was ripe for use in Durban, where the threat of widespread disease was a very recent memory. Beginning in mid-October 1926, the discovery of seven cases of frequently fatal smallpox — among the most feared crowd diseases from Europe — plunged residents and municipal authorities into an eight-week public health crisis. Aggressive measures stamped out the smallpox threat before Christmas, but not before "some 60 cases" and 15 deaths occurred — almost exclusively among the town's Indian residents. [4] Once subdued, health authorities shifted from protecting the public to protecting pockets, issuing statements that Durban was safe for travelers seeking sun and sea — and their coveted pounds and shillings. Puckishly framing the popularity of the Charleston in the language of a public health crisis called to mind the 13 smallpox-related editorials that recently appeared in the same space. [5] Perhaps readers shook their heads, chuckled quietly, or exhaled with relief at the comparative lightness of this affliction. An epidemic had been averted, no 'Europeans' contracted smallpox, and the holiday season's merrymaking and moneymaking were in full swing.

But while Durbanites and holidaymakers danced, another epidemic was beginning to mass. As the calendar turned over, dengue fever took hold in the warm, moist coastal plain in and around Durban. A tropical disease considered temporarily debilitating, but not deadly, dengue infections at first went unnoticed, then unremarked, but nevertheless built to epidemic scale. Amid the summer of 1927's heavy rains and

high heat, residents struggled to control the *aedes egypti* mosquitos that transmit dengue. Only in late May, after the arrival of winter temperatures, did the epidemic subside. Summary reports indicated that dengue "affected an area extending about 40 miles from Durban," rattled the local economy, and resulted in "about 50,000" estimated cases and 61 directly attributable deaths. [6] In contrast to the smallpox outbreak, the dengue epidemic disproportionately affected the town's white residents. Reports observed that "nearly half of the European population of Durban was infected," while dengue cases in the Indian and African communities were estimated among "only about one-tenth of their number." [7] Exactly five months after making light of "The Charleston Epidemic," the same editorial page offered neither mirth nor metaphor: "the two epidemics of the past twelve months have given it [Durban] a somewhat rude shock." [8]

One town. Eight months. Two very different diseases. Two markedly disproportionate burdens of disease. Two primarily affected communities with unequal standing in the race-stratified society of early twentieth century South Africa. And one question: what makes a public health crisis? Smallpox was one. Dengue became one. How and why, in 1927, was dengue recognized as a serious threat and made a notifiable disease? Based primarily on review of the daily editions of the *The Natal Mercury* (hereafter *Mercury*), I argue that the epidemic's scale, human suffering, and the public clamor of white citizens, contributed to the reconsideration of dengue. However, pressures grounded in short-term economic losses and Durban's longer-term industrial aspirations were the leading reasons why health authorities abandoned a *laissez-faire*, let-it-run-its-course stance and recognized dengue as a public health crisis.

Durban in 1927

In 1927 Durban occupied a location just west of the Indian Ocean's sand rimmed shoreline and north of the town's prized harbor (Figure 1). This location — between beach and bay — contributed to several overlapping municipal identities: recreation ground, transportation hub, and fledgling industrial site. Located on the province of Natal's subtropical coastal plain, Durban enjoyed long summers and short, mild winters. The town's favorable climate, warm waters, broad beaches, and horse racing venues made it a popular holiday destination for whites from South Africa's interior during the Christmas season, Easter break, and the southern hemisphere's June-to-August winters. [9]

From the Borough of Durban's founding in 1854, the town's fortunes were staked on its protected harbor and its capacity to welcome shipping. Durban was well situated along established trade routes. On South Africa's eastern coast, the town was favorably positioned for trade with the Indian subcontinent, sea traffic circling Africa via the Suez Canal, and European vessels rounding South Africa bound for Australia, for which the Suez route provided no advantage. [10] With coal arriving by rail from Zululand, Durban's harbor was an essential re-coaling stop during the age of steamships. By 1927, the railway that wended its way up over the escarpment had bolstered Durban's significance as a transport hub for three decades, connecting the town's docks to the lucrative mines and burgeoning city of Johannesburg located more than 500 km inland.

The town's favorable climate, warm waters, broad beaches, and horse racing venues made it a popular holiday destination for whites from South Africa's interior.

Durban had long been a collection point and processing center for agriculture products grown on Natal's subtropical coast, especially sugar. [11] But during the First World War, further industrialization began to occur, although the manufacturing sector remained small. [12] While town leaders anxiously desired more industry — and offered a superior port and competitive water and electricity rates — some industrialists chose other locations because land within the Borough was scarce and expensive and municipal rates were high. [13] In 1927, Durban's standing as an industrial center in its own right remained more aspiration than realization.

Populated by 123,000 people, the Borough was densely settled, hemmed-in by several of natural features: the ocean to the east, the top of the Berea Ridge to the west, the Umgeni River to the north, and the harbor and Umbilo River to the south (Figure 1). Three primary groups of people made their home within the confines of the Borough in 1927: 'Europeans' (59,600), Indians (21,286), and Africans (42,100). The majority of 'Europeans' were of English background — although the increasing presence of 'poor whites' was anxiously noted. Many lived on the sea-facing side of the Berea Ridge or other elevated slopes. [14] The Indian community centered on the flat land near Grey Street, on the western margins of the town center. [15] 'Barracks' near the Umgeni River, to the north, were home to many former indentured Indian laborers. Africans living in the Borough were mostly male workers engaged in casual labor, laundry businesses, rickshaw running, and contract work. [16]

Another 100,000 people lived in the seven peri-urban areas along the Borough's boundaries. [17] While the Durban Town Council and its municipal health department operated within the Borough, the greater Durban area and the population centers on the coastal plain to the town's north and south were administered by a patchwork of administrative jurisdictions. In each of the seven peri-urban districts, Boards of Local Administration and Public Health were the responsible entities. The 'native reserves,' home to a large portion of Africans in the province, were under the administration of the Native Affairs Department and in some settings included missionary medical presence. Finally, since the governance

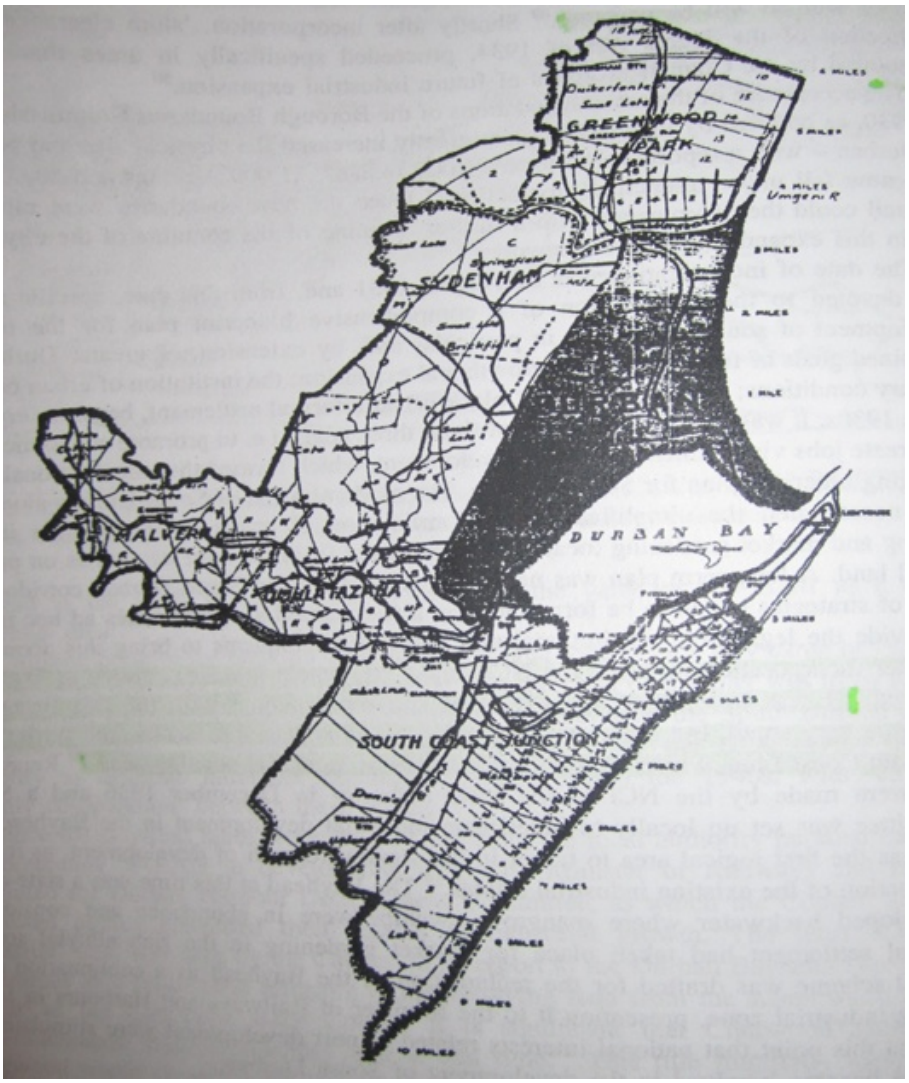

FIGURE 1: MAP of DURBAN from around 1930. The darkened space is the Borough of Durban. The surrounding areas are the peri-urban districts

structure for the Union of South Africa did not include the establishment of provincial health authorities, the national Union Health Department was responsible for the province's rural areas.

Crisis vs. Nuisance

Based on its long history of devastation in Europe and periodic epidemics in South Africa, beginning in the 1700s, smallpox — contagious, spread from person-to-person, and potentially fatal — was a public health crisis on day one. [18] The disease had no cure, spread primarily through the exhalations of symptomatic sufferers, and killed to up to 30% of people infected. [19] Smallpox was an illness to be prevented, monitored, and aggressively combated. [20]

The tactics and tools to prevent and fight smallpox were well established and had the force of law: compulsory notification of any suspicious cases, isolation of infected persons, tracing of all contacts, medical observation or quarantine, and vaccination of all infants before 13 months, children and adults every five years, and unvaccinated persons in and around a confirmed outbreak. [21] In mid-October 1926, it was the notification of a possible case of smallpox that prompted staff from Durban's municipal Health Department to visit the Indian Barracks at Umgeni — where roughly 600 people resided in close quarters. [22] To their dismay, they discovered "seven definite cases." [23] Six Indian residents and one African were ill and had been symptomatic and infectious for at least a week. [24] The subtitles in *The Natal Mercury* told the story: "ill for at least a week; police guard on Indian barracks; danger of future spread." [25] Isolation, contact tracing, quarantine, and vaccination began that day and continued until the last case cleared eight weeks later. The threat of smallpox put the machinery of crisis quickly into motion.

In contrast, despite episodes of dengue-like illness in 1896, 1902, 1914, and late the previous summer, when dengue fever appeared in and around Durban it went unremarked in the *Mercury* for seven weeks. [26] In an interview in late January 1927, Dr. Park Ross, of the Union Health Department, noted "a considerable amount of dengue," seemingly to dispel worries that recent increases in the incidence of fever indicated a gathering epidemic of influenza. [27] The news that influenza cases were few and mild was a significant assurance less than a decade after the 1918 influenza pandemic claimed 300,000 lives in South Africa. [28] Untroubled by the presence of dengue, Ross revealed that cases had been reported in the area before Christmas, and localized "epidemics" had occurred in three communities outside Durban, each located along a different train line leaving the Borough. [29] The primary message from health authorities was emphasized with a large subtitle: "No Cause for Alarm." [30] In early 1927, dengue was a nuisance, not a threat.

There are several reasons why health officials in Durban did not initially consider dengue "cause for alarm." Most significantly — at the individual level — although some sufferers experienced "severe prostration and debility," dengue was "seldom fatal." [31] In the early twentieth century, most dengue infections took one of two forms: either a mild, nonspecific febrile illness often indistinguishable from other fevers, or the more severe 'classical dengue.' [32] The more severe form, which occurred less frequently, earned the disease the name "break-bone fever" for its intense eye-socket, muscle, bone, and joint pain. [33] Vomiting, swollen lymph glands, and rash were also common and, like the fever, usually resolved within a week. [34] Full convalescence could take "three to four weeks" and was

marked by recurrent aches, general weakness, and suppressed appetite. [35] A large dengue epidemic could cripple a city — but widespread death was not found in its wake. [36]

The second and third reasons dengue was not considered a high-level threat are found at the population level and have to do with the severity and frequency of epidemic dengue. Past dengue epidemics in Durban do not appear to have risen to the level of crisis. In 1927, none of the specific references in the *Mercury* to the 1914 dengue epidemic call it a crisis, or spare ink to describe its toll. [37] Moreover, journalists and letter writers supplying examples of severe mosquito-borne disease recalled the 1905 malaria epidemic rather than the last visitation of dengue. The issue of frequency also lowered the priority level for dengue. Since people infected by the dengue virus were generally immune to future attacks, epidemics usually occurred at irregular intervals of a decade or more in non-endemic areas. [38] Because dengue was "seldom fatal," had not previously crippled the municipality, and occurred infrequently, Durban's health authorities approached the 1927 dengue epidemic as something to be endured while it ran its course, rather than an episode that demanded aggressive municipal action.

Reports filed after the epidemic estimated that nearly one in two 'Europeans' had contracted dengue, while perhaps one in ten Indians and Africans became ill.

There is one more crucial consideration: the mosquito. Three things must be present to transmit dengue: the introduction of the virus, usually through the presence of a person with an active infection; susceptible human hosts; and the female *aedes egypti* mosquitos that transmit the virus. [39] Unlike diseases spread person-to-person, like smallpox, a mosquito cannot be subjected to social control measures, nor interviewed for a list of contacts of every person it has bitten.

The *aedes egypti* mosquito is "highly adapted to humans and urban environments." [40] The species lives in or very near human dwellings; travels only short distances; prefers to feed on people; and seeks bloodmeals just after daybreak and again in the early evening hours, when people are active in and around their homes. [41] Probably to increase its chances of survival this particular mosquito is easily disrupted when taking a blood meal. [42] This "interrupted feeding" means that the same mosquito may bite several people in succession to complete its meal — increasing the opportunities for viral transmission, perhaps to multiple people in the same room. [43] Female *aedes egypti* mosquitos deposit their eggs — around 100 at a time — in containers common to many houses and yards: barrels, drums, gutters, buckets, pots, flower vases, plant saucers, old tires, and discarded bottles and tins, as well as treeholes and water collection points formed by the notches of other plants around the home. [44] In this way, dengue presented a more complex and protracted challenge than smallpox. While smallpox required motivating single acts of submission to vaccination — with the backing of constable and judge, if necessary — facing down the fecundity and appetite of *aedes egypti* required a whole season of vigilance on the part of individuals and community. Yet, when dengue appeared in Durban, the home-dwelling nature of the vector mosquito contributed to the Durban health authorities' *laissez-faire* approach to the epidemic. While municipal work crews treated swampy areas with oil to prevent the *anopheles* mosquitos associated with malaria, the fight against *aedes egypti* in houses and yards was framed as the responsibility of individual 'householders.' [45]

Emerging Crisis

Despite Dr. Park Ross's January assurance that dengue was "no cause for alarm," infections continued to rise. On February 19, the *Mercury* described dengue as "epidemic" in the borough, but the number of cases could only be reported as "numerous" because it was not a notifiable disease. [46] That summer, the remarkable spread of dengue was likely spurred by heavy rains in February and March that kept breeding locations filled with water, and high summer temperatures (particularly days over 30°C) that likely quickened the egg-larva-pupa stages of the species' lifecycle. [47] Those same high temperatures probably also contributed to dengue's spread in at least one other way, by shortening the length of the virus's incubation period *within* each mosquito — providing more opportunity for *aedes egypti* to spread the virus through bloodmeals. [48]

During February the pair of *Mercury* articles about the dengue epidemic were focused on informing the public and conveyed three messages: dengue was prevalent in the Borough, *aedes egypti* mosquitos spread the disease, and householders should employed anti-mosquito measures to curb the epidemic. [49] This advice included routinely inspecting the house and yard for breeding sites and emptying any water and covering water storage with a dense screen or applying a layer of oil or kerosene that would sit atop the water to keep mosquito larva from getting oxygen. [50] Advertisements in the newspaper reflected the growing presence of dengue in Durban. Print ads for household insecticides began to vie for customers desperate to rid their homes of mosquitos (Figures 2 & 3) and a coastal resort to the south specifically targeted dengue sufferers, promising a location in which they could recuperate with "every comfort and attention." [51]

By the middle of March, an estimate of 5,000 dengue cases in the Borough was floated in the press and an open letter addressed to "Mr. and Mrs. Householder" from "A Victim" pointedly scolded home-dwellers for lax mosquito control on their properties, echoing the health authorities' stance that the fight against *aedes egypti* was a matter of individual initiative and recognizance. [52] However, when the first of nine dengue-related editorials in the *Mercury* ran the next day, the newspaper reached

beyond the personal responsibility narrative, obliquely criticizing the municipality by ruing the "tendency in Durban" to view dengue "from a sort of fatalist point of view, as a seasonal fever which, if the town is lucky, will cause little serious illness and will in any event soon be over." [53]

The same editorial struck on the crux of the crisis-nuisance issue, what might be called, 'the dengue paradox': "the really unfortunate thing about dengue is that its effects are neither dangerous enough to make it an alarming disease or mild enough to allow anybody to treat it with indifference." [54] Hereafter, increased editorial pressure fell on the municipality, as the public conversation widened to include more than the personal and neighborly responsibilities of householders. From mid-March through May the *Mercury* criticized the municipal Health Department for inactivity and ineffectiveness. Just before April, municipal health authorities announced policy changes that included a promise to make dengue a notifiable illness before next summer, the training of schoolchildren to carry out anti-mosquito measures, and the preparation of a comprehensive prevention plan for the following year. [55] But before this change in public stance one insecticide brand moved to capitalize on the public dissatisfaction with the health department's passivity, cleverly laced their ads with a tagline that warned, "do not wait for the authorities to take action" (Figure 4). [56] The re-making of dengue into a public health crisis was underway.

Making a Public Health Crisis

A constellation of factors made dengue a public health crisis in 1927. The most visible ones were the epidemic's scale and suffering. By the beginning of May, the municipal health department estimated that 30,000 cases had occurred within its borders. [57] By June, the *Mercury* editors believed the true figure was "considerably higher." [58] Even unadjusted, this statistic represents a staggering burden of disease, affecting one in four residents in a borough home to 123,000 people. [59] A report in that ran in the *Journal of the South African Medical Association* that year claimed 40,000 cases as a conservative figure for the town of Durban and surrounding areas, and

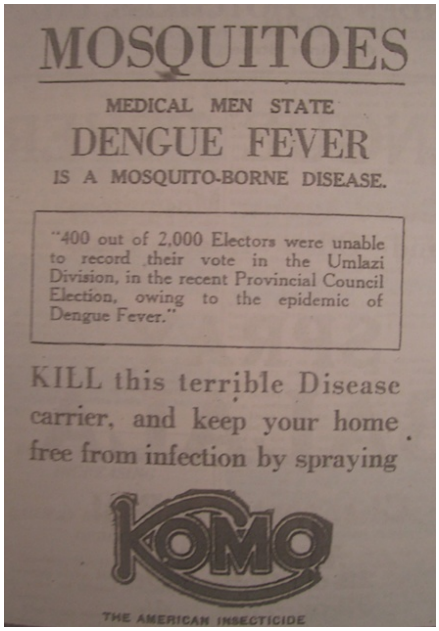

FIGURE 2: KOMO Ad, February 21, 1927.

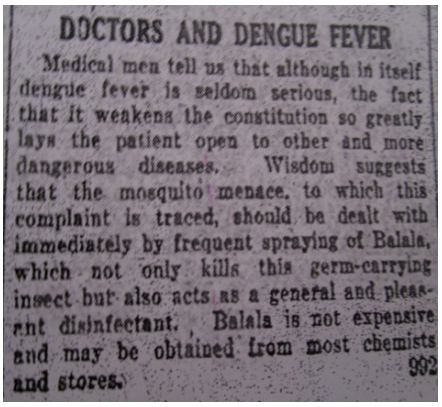

FIGURE 3: BALA Ad, February 24, 1927.

a subsequent international disease surveillance report fixed the estimated cases on the Natal coastal plain at about 50,000. [60] These are enormous numbers.

Behind these estimates were the experiences of communities like Putnam's Hill, that reported on March 1st: "The epidemic still seems to be raging in the district" and "is visiting every home in turn." [61] The following month, Durban's leading Anglican, Archdeacon Heywood-Harris spoke similarly about the town, remarking, "I doubt if there are many families in the borough that have entirely escaped." [62] In many homes — where the battle with *aedes egypti* over flesh and blood played out — the experience of a newspaper contributor, "Mother," could hardly have been unique: "at our house, we are in the throes of dengue: the son of the house, the cook of the house, and a visitor all laid low." [63] For many, the home was not only a key site of infection and affliction, but also a site of failure, frustration, and blame. The lament of one householder was probably widely echoed: "I have used KOMO [a brand name insecticide] galore, and in spite of this, one by one, we have gone down with it (five up to date)." [64] The scale of the 1927 dengue epidemic helped make it a public health crisis.

The municipal health department claimed "the vast majority of cases" were mild enough that "confinement to bed was not necessary for more than two or three days" and only "a small percentage" were severe. [65] If just 10% of estimated infections were severe, then 4,000-5,000 people on the Natal coast met with considerable suffering. One submission published in the *Mercury* in April, employed a descriptive literary approach to describing infection, using personification to convey the experience of severe dengue:

A skinny hand grips you at the back of the neck. Slowly the fingers press themselves into your cranium. Fire seems to burst from every fingertip. Suddenly, as though by lightning flash, they shoot and dance some demonical dance along your spine. The ice and flame antagonize each other in your back. In the darkness that has fallen you struggle to retain your backbone. It is of no avail. The bone, which has been your chief stay in life, crumbles and refuses to maintain you, even in a recumbent position. [66]

While tending toward melodrama, this description corresponds to the report of one Durban doctor that patients tearfully told him they felt like they were being thrashed. [67] Under these circumstances, boarding house keepers were

criticized for leaving sufferers alone "for days without receiving attention" and the archdeacon observed that dengue "overburdened people with domestic duties in ministering to the sick." [68] Despite low mortality, the visibility of pain and debility called into question the 'dengue paradox' and contributed to the epidemic's recognition as a crisis.

The specific population most afflicted during the 1927 epidemic also contributed to the elevation of dengue to a public health crisis. Most dengue-sufferers

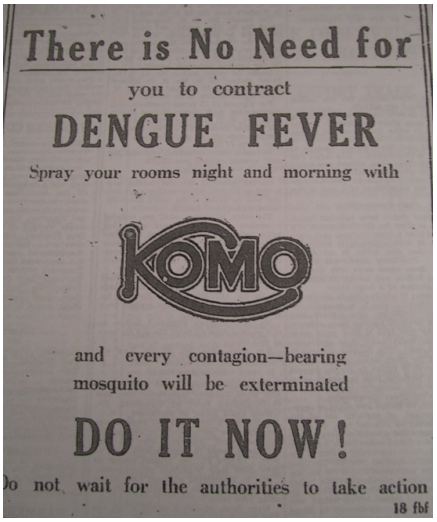

FIGURE 4: KOMO Ad, March 26, 1927 – "Do Not Wait for the Authorities to take Action."

were white. Reports filed after the epidemic estimated that nearly one in two 'Europeans' had contracted dengue, while perhaps one in ten Indians and Africans became ill. [69] The reported distribution of disease is notable. And a bit puzzling. [70] In tropical locations where dengue is endemic a discrepancy of this type between newer European arrivals and native-born residents could be explained as the result of immunity local residents acquired from childhood infections. [71] But dengue was not endemic in Durban, and there is little reason to believe that significantly more Africans than whites acquired immunity during the considerably smaller dengue outbreaks in 1926, 1914, and 1902. On the other hand, acquired immunity may have limited application to the lower incidence of disease observed among Indians. Dengue was endemic in many cities on the Indian subcontinent, so some Indians probably arrived in South Africa with hard-won immunity to dengue. But this explanation can only partially account for the differences noted in Durban, because, by the 1920s, two-thirds of Indians in Natal were born in South Africa. [72] Since the most obvious biological factors seem unlikely to account for the skewed distribution of disease, the reasons may lie elsewhere and invite further investigation.

The finding that whites were disproportionately affected by the epidemic corresponds to most mentions of the race of dengue sufferers in the *Mercury*. Further, discussion of the epidemic is largely absent from the Zulu newspaper *Ilanga lase Natal* and the Indian weekly *Indian Opinion*. [73] *Mercury* reports from neighborhoods or surrounding villages included comments like "quite a number of well-known residents are down with the complaint" (Sea View), "nearly the whole of the white population has been affected" (Tongaat), or "fresh cases are occurring chiefly among Europeans (Berea)." [74] The first insecticide advertisement that explicitly mentioned dengue to sell its product noted that "400 of 2,000 electors" in one constituency — electors being white property-owners — did not vote in a recent election "owing to the epidemic of Dengue Fever." [75] Because white Durbanites were so heavily affected, the pronouncements and debates in the *Mercury* were not about others and the perceived 'other,' but were engaged by the population suffering most from the disease. This differed markedly from the smallpox outbreak in late 1926, in which nearly all sufferers were from the Indian community, but only a few well-off Indian voices could be found in the publication. If dengue had disproportionately affected Durban's Indian community, one wonders if the public discourse around the epidemic would have connected mosquito-borne illness to the racial stereotypes of Indians' unsanitary habits and living conditions commonly invoked during the smallpox outbreak, rather than the neighborly individual responsibilities of (white) middle-class "householders." As it was, a white population well-positioned politically and practiced in channeling dissatisfaction through the public medium of newspapers, probably contributed to the Health Department's reversal on the epidemic.

Ultimately though, despite the merits of scale and suffering and the clamor from white readership, the most significant factors in dengue's establishment as a public health crisis in 1927 appear to have been economic. When the *Mercury's* editorial page first decried the health department's "fatalist point of view" and willingness to let the epidemic run its course, the argument was not laid on humanitarian grounds. Instead, the epidemic's "economic effects" were cited as "serious enough to call for a whole-hearted effort to clear the Durban area of the mosquito menace, and keep it clear." [76] The *Mercury* editors pasted into their column a paragraph from their sister paper, *The Advertiser*, unabashedly framed in market logic:

> *At the very lowest estimate, five thousand wage earners in this small town have been out of commission for about a week. In other words, five thousand weeks of productive effort have been directly lost to the town. In addition, there is to be calculated the impaired vitality during convalescence, the disorganization of warehouse, shop and office owing to depleted staffs, and the diversion of finances to doctors and chemists that would otherwise be in circulation in less lugubrious channels. The stupid economic waste of dengue can be chronicled in such terms as ought to make a really live business community declare it would never allow a repetition of the thing. [77]*

Here the symptom-oriented 'dengue paradox' — neither dangerous enough to alarm, nor mild enough to ignore — was rolled away in favor of an unequivocal

argument against "the stupid economic waste of dengue." Within a week the same space called on the Chambers of Commerce and Industries to pressure the municipality toward action. [78]

When the Chamber of Commerce held their annual meeting the following month, the association did not explicitly address municipal initiative. But, its president, Mr. Gundelfinger, did decry the epidemic's impact on business in the town. He estimated that "the direct loss to workers through lost time, and to employers through lost services, must run well into six figures when expressed in sterling" and "at least 60 percent of those employed in what are sometimes officially described as 'gainful occupations'" had taken sick leave. [79] Bodies and business were battered by the epidemic. And the bodies affected were not only those at the low end of the wage scale. By late May, as cooler temperatures arrived and the 1927 epidemic began to ebb, a delegation from the Chambers of Commerce and Industries, the Master Builders' Association, and the Retailers' Council met with the Town Council to brief them on the economic effects of the smallpox and dengue outbreaks. [80] The town's business representatives insisted that the municipality move aggressively to 'disease-proof' Durban, and pledge their support for this agenda. [81] The nuisance was now clearly considered a threat — one that demanded proactive prevention.

But near-term 'economic waste' was not the mortar that bound together the town's political establishment, boosters, newspaper editors, and local capital. Dengue threatened the vision these constituencies shared of Durban's industrial future. In the late 1920s, that vision involved an overt pivot from beach to bay and the belief that "the ultimate destiny of Port Natal lies in its steady expansion into the industrial metropolis of South Africa." [82] A town made a down payment on that destiny through investments in land reclamation around the harbor, a new graving dock, grain elevators, and coal equipment, increased capacity for electricity production, and a new water scheme that would soon provide ample water for industries. [83] This path to primacy and prosperity could not be endangered by house-dwelling mosquitos.

In its editorial barrage against the health department in late March and April, the *Mercury* writers made clear that the most significant trouble with dengue was that it threatened Durban's long-term prospects.

What hope will Durban have of establishing itself as the great industrial center of the Union if the vitality and productive efficiency of all classes of workers in the town and district are constantly sapped by annually recurrent epidemics of dengue fever? Will not manufacturers fight shy of the place? [84]

This concern makes plain that aspirations for an industrial future were the most significant factor in the reconsideration of dengue as a public health crisis. [85] Laying claim to that industrial destiny already required shaking off 'conventional wisdom' about the tropical worker and the influence of environment. The added burden and stigma of mosquito-borne tropical disease could not be countenanced.

Despite the merits of scale and suffering and the clamor from white readership, the most significant factors in dengue's establishment as a public health crisis in 1927 appear to have been economic.

The thought has been advanced from elsewhere that the heat of the Durban summer reduces the capacity of its workers during that period. This is to be doubted, but it is not to be doubted that an annual dengue epidemic in conjunction with the summer heat undoubtedly would have that effect, and if this epidemic becomes a permanent feature of the Durban year it will prove a very serious handicap in our competition with other towns for trade and industry. [86]

Here lies the most significant reason why sustained pressure was applied to make dengue a public health crisis. Lives can be threatened. Suffering can occur. Influential communities can raise hell. Money and man-hours can be lost. But the future must be defended — particularly if profits might be made there.

Conclusion

When dengue fever struck Durban during the first months of 1927, it was considered "no cause for alarm." A nuisance, not a crisis. The disease's low case mortality, the limited size of previous dengue outbreaks, the irregular and infrequent timing of epidemics, and the virus's transmission by a home-dwelling mosquito species, led municipal health authorities to initially adopt a *laissez-faire* approach. This stood in stark contrast to the level of mobilization that accompanied the smallpox outbreak only a few months before.

During the critical weeks when the epidemic was building and mosquito densities were rapidly increasing, the Acting Medical Officer of Health lectured householders through the press about their personal responsibility to eliminate *aedes egypti* breeding sites, but did not organize or promote a broader program of inspections. This posture later changed, under escalating public pressure and calls for the Health Department to treat dengue as a public health crisis.

When the last dengue cases were tallied, authorities estimated that 50,000 people had suffered from the disease in and around Durban. But the sheer scale of the epidemic was one of a constellation of contributing factors that demonstrated that dengue should be engaged as a threat. The associated human suffering and public clamor from the disproportionately affected white community were also influential.

In a constellation, not all stars are equal. Economic concerns were foremost in assembling a coalition of boosters, local politicians, commerce, and industry that, in May, demanded the "disease-proofing" of Durban and joined with the Town Council to affirm, "Good Public Health means Good Business." [87] But — at a

time when Durban was shifting its sights from holiday resort to industrial port — the North Star that guided the drive to prevent future dengue outbreaks was the dream of a prosperous industrial future. A vision jeopardized by epidemic tropical disease and the confounding mosquitos that spread it. Dengue became a public health crisis because "safeguard[ing] the great future of the borough is the paramount task of the Health Department." [88]

The enthusiasm for disease-proofing that resulted from this episode in Durban's history falls squarely along the route to the Durban Borough Boundaries Commission, the extension of the municipality's control over the seven surrounding peri-urban areas a few years later, attempts to apply the 1923 Native Urban Areas Act to those newly added spaces, and the forced removals and modernist planning effected at the industrial site at the head of the bay.

But on June 1, all that lay in the future. That day the *Mercury* lamented, "one of the lesser, though urgent problems of the moment is that of convincing South Africa that the dengue epidemic is at an end." [89] Durban was still a town by the sea and crowds of seasonal refugees fleeing the cold Highveld winter were expected to soon alight at the central train station. There was merrymaking and moneymaking to look after. And perhaps — if the gramophone still worked — a little Charleston.

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Notes:

[1] The Charleston Epidemic. *The Natal Mercury*. January 1, 1927.

[2] Thousands Visiting Durban. *The Natal Mercury*. December 30, 1926. In the Empire-soaked early decades of the twentieth century, boosters of Muizenberg and Camps Bay also claimed the appellation "the Brighton of South Africa". The description was prominently applied to Durban in the travel account of British journalist H. Hamilton Fyfe: Fyfe HH. *South Africa Today, with an Account of Modern Rhodesia*, 171. See also, Preston-Whyte R. Constructed Leisure Space: The Seaside at Durban. *Annals of Tourism Research*. 2001; 28: 581-596.

[3] The Charleston Epidemic. *The Natal Mercury*. January 1, 1927.

[4] Publicity Policy Vindicated: The Recent Smallpox Outbreak. *The Natal Mercury*. December 8, 1926.

[5] The thirteen *Natal Mercury* editorials in 1926 related to the smallpox outbreak appeared on October 22, 26, 29 & 30 (2) and November 2, 4, 5, 10, 12 (2), 13, and 17.

[6] The number of infections is not without uncertainty. Many people — particularly those with more mild symptoms — probably never received medical care and some that did may have been misdiagnosed as suffering from other sources of fever. Moreover, the methods used to collect data on the outbreak and the factors used to estimate the number of cases are not detailed in newspaper sources. For the purposes of this essay, a sense of the epidemic's scale is more important than specific accuracy. The figures noted above appear in Current World Prevalence of Communicable Diseases. *Public Health Reports*. October 26, 1928; 43: 2829-2833. An article by a local physician that appeared in South Africa's medical journal in September 1927 stated that "a conservative estimate" of the epidemic "is considered to be 40,000." Edington AD. "Dengue"as Seen in the Recent Epidemic in Durban. *The Journal of the Medical Association of South Africa*. 1927; 1: 446-448.

[7] Current World Prevalence of Communicable Diseases. *Public Health Reports*. October 26, 1928; 43: 2829-2833.

[8] A Great Opportunity. The *Natal Mercury*. June 1, 1927.

[9] Preston-Whyte, 584.

[10] Hyslop J. Steamship Empire: Asian, African and British Sailors in the Merchant Marine c. 1880-1945. *Journal of Asian and African Studies*. 2009; 44: 49-67. Page 62.

[11] Freund B. *Insiders and Outsiders: the Indian Working Class of Durban, 1910-1990*. Portsmouth, NH: Heinemann; 1995. Page 29.

[12] Maylam P. The Struggle for Space in Twentieth-Century Durban. In: Maylam P, ed; Edwards I, ed. *The People's City: Africa Life in Twentieth-Century Durban*. Portsmouth, NH: Heinemann; 1996: 1-31. Page 3.

[13] Scott D. "Creative Destruction": Early Modernist Planning in the South Durban Industrial Zone, South Africa. *Journal of Southern African Studies*. 2003; 29: 235-259. Page 242. Maylam, 3.

[14] Freund, 33.

[15] *Ibid*.

[16] Maylam, 3

[17] These population statistics are from the Durban Borough Boundaries Commission, 1927-28. A summary table is provided in: Freund, 33.

[18] A South African public health manual from the period introduced smallpox by tracing its history in South Africa. It specifically references a widespread smallpox epidemic in 1881 as an early event that shaped the legal environment around smallpox outbreaks. Reid AW. *Sanitation and Public Health: With Special Reference to Conditions in South Africa*. Capetown: Juta & Co., LTD; 1927. Page 282-283.

[19] Smallpox Factsheet. World Health Organization. 2001. Available at: http://www.who.int/mediacentre/factsheets/smallpox/en/. Accessed April 18, 2012.

[20] See *Regulations Against the Occurrence and Threatened Outbreaks of Smallpox, Government Notice 2094 of 1926*, summarized in Reid, 284-286.

[21] *Ibid*.

[22] These barracks, located in the northern part of the Borough, before reaching the river along the Umgeni Road, were more specifically known as Shire's Barracks and Chetty's Barracks. They were home to Indian laborers and their families and a much smaller number of African workers.

[23] Smallpox in Durban: Seven Cases Reported at Umgeni. *The Natal Mercury*. October 15, 1926.

[24] *Ibid*.

[25] *Ibid*.

[26] Durban Medical Society. *South African Medical Record*. May 23, 1914; 7: 168-169. Also, Influenza or Dengue Fever?: Durban Public Confused. *The Natal Mercury*. January 29, 1927.

[27] Influenza or Dengue Fever?: Durban Public Confused. *The Natal Mercury*. January 29, 1927.

[28] *Ibid*. Also, Phillips H. The Origin of the Public Health Act of 1919. *South African Medical Journal*. 1990; 77: 531-532.

[29] *Ibid*. These communities were Tongaat (to the north), Amanzimtoti (to the south), and Sea View, located along the train line to the interior, just beyond the Borough's southwest edge. On January 25, the *Mercury* reported two weeks of "influenza" at Sea View. This

can be considered the first description of the 1927 epidemic in the Mercury. However, on January 11, an item ran noting that East London officials, finding 15 crew members with dengue, quarantined the *S.S. Jagersfontein* — which left Durban on January 9th. These infections were attributed to Mombasa, "where the vessel called recently." However, the *Kenya Gazette* indicates the steamer left Kilindi Harbor on December 1. While six weeks and several shipboard transmission cycles are possible, it seems at least as likely — given that dengue's intrinsic incubation period averages 4-7 days, the ship's arrival in Durban on January 4, and the (then unremarked) presence of dengue in the town — that the infections discovered at East London occurred in Durban. Disease Aboard Ship: Fever Contacted on East African Coast. *The Natal Mercury*. January 11, 1927. Also, Shipping Report: Kilindi Harbour. *The Kenya Gazette*. December 22, 1926; 28: 1533.

[30] Influenza or Dengue Fever?: Durban Public Confused. *The Natal Mercury*. January 29, 1927.

[31] Reid, 308.

[32] Gubler, Dengue, 229.

[33] *Ibid*.

[34] Humphreys M. Dengue Fever: Breakbone Fever. In: Kiple KF, ed. *Pox, Plagues, and Pestilence: Disease in History*. London: Orion Publishing Group; 1999, page 92.

[35] Edington, 447.

[36] Consider the case mortality rates in the two examples in this essay. The 15 deaths among 60 reported cases of smallpox in 1926 represented a 'kill rate' of 25%. The 61 deaths attributed to the estimated 50,000 cases of dengue yielded a case mortality rate of 0.1%.

[37] For example, Another Dengue Epidemic: Numerous Cases in the Borough, *The Natal Mercury*. February 19, 1927.

[38] Reid, 308. This statement cannot, however, be applied to contemporary dengue dynamics and since immunity is subtype specific and the disease's four subtypes overlap much more commonly.

[39] Gubler, Dengue, 236.

[40] Gubler D. Dengue/Dengue Hemorrhagic Fever: History and Current Status. In: *Novartis Foundation Symposium 277: New Treatment Strategies for Dengue and Other Flaviviral Diseases*. Chichester, UK: John Wiley & Sons, Ltd; 2006: 3-16. Page 4.

[41] Gubler, Dengue, 242-245.

[42] *Ibid*., 245.

[43] *Ibid*.

[44] Gubler, Dengue, 244. Also, Dengue/DHF: Frequently Asked Questions. World Health Organization, 2006. Available at: http://www.searo.who.int/en/section10/section332/section1026.htm. Accessed April 24, 2012.

[45] Another Dengue Epidemic: Numerous Cases in the Borough. *The Natal Mercury*. Feb 19, 1927.

[46] *Ibid*.

[47] Natal Rainfall: Returns for March. *The Natal Mercury*. April 14, 1927. For temperature's effect on extrinsic incubation periods, see Gubler, Dengue, 243.

[48] Gubler, Dengue, 243.

[49] Another Dengue Epidemic. *The Natal Mercury*. February 19, 1927. Also The Dengue Fever Outbreak, *The Natal Mercury*. February 26, 1927.

[50] *Ibid*.

[51] The first ad, for the insecticide KOMO, ran in *The Natal Mercury* on February 21. This was followed shortly by two ads that today would be called 'advertorials' for the insecticide BALALA, on February 23 and 24. On March 1, an ad for the Beach Hotel Umgababa appeared.

[52] Dangers of Dengue Fever. *The Natal Mercury*. March 11, 1927. The estimate of 5000 case also appeared on March 11, in the Mercury's sister paper, the Natal Advertiser. The figure was reprinted in the *Mercury's* lead editorial on March 12.

[53] Stamp It Out. *The Natal Mercury*. March 12, 1927.

[54] *Ibid*.

[55] War at Last. *The Natal Mercury*. March 29, 1927.

[56] Komo Ad. *The Natal Mercury*. March 26, 1927.

[57] Dengue Position. *The Natal Mercury*. May 4, 1927.

[58] A Great Opportunity. *The Natal Mercury*. June 1, 1927.

[59] The total population of the borough is listed at 122,986 in a table summarizing data from the 1927-28, Durban Borough Boundaries Commission in Freund, 33.

[60] Edington, 446. Also, Current World Prevalence of Communicable Diseases. *Public Health Reports*. October 26, 1928; 43: 2829-2833.

[61] Puntam's Hill: Dengue Epidemic. *The Natal Mercury*. March 1, 1927.

[62] Dengue Epidemic: Archdeacon and the "Lesson." *The Natal Mercury*. April 7, 1927.

[63] Our Dengue: A Durban Home Today. *The Natal Mercury*. March 29, 1927.

[64] An Indignant Householder. *The Natal Mercury*. March 19, 1927.

[65] Dengue Position. *The Natal Mercury*. May 4, 1927.

[66] Dengue: How it Happens. *The Natal Mercury*. April 22, 1927.

[67] Edington, 447.

[68] Durban & Dengue Fever. *The Natal Mercury*. March 17, 1927. Also, Dengue Epidemic: Archdeacon and the "Lesson." *The Natal Mercury*. April 7, 1927.

[69] Current World Prevalence of Communicable Diseases. *Public Health Reports*. October 26, 1928; 43: 2829-2833.

[70] Interestingly, a sero-survey published in 1957 sketched what arthropod-borne viruses had occurred in which places in South Africa over the last 30-50 years. Dengue was among the viruses these researchers were interested in. The study protocol stipulated that participants could not have traveled more than 30 miles from their birthplace during their lifetime. While the race of the participants was not provided, the article noted that the mobility of South African life meant that most participants were African women. In Durban the researchers found 30% of adults in a small sample (9/30) had antibodies to dengue. Kokernot RH, Smithburn KC, Weinbren MP. Neutralising antibodies to arthropod-borne viruses in human and animals in the Union of South Africa. *Journal of Immunology*. 1956; 77: 313-322.

[71] Gubler, Dengue, 225.

[72] According to 1921 census data, 93,767 of the 141,336 Indians living in Natal were born in South Africa (66.3%). South African Indian Congress Statement: Submitted to the Government of India Delegation. *Indian Opinion*, January 7, 1927; 2: 1.

[73] Review of *Ilanga lase Natal* from January 1 to June 30, 1927, yielded two public notices about the epidemic placed by the Durban Town Clerk. *Indian Opinion* mentioned the dengue situation three times during the same period by including short quotations lifted from Durban's daily papers in the "Notes and News" section.

[74] Influenza or Dengue Fever. *The Natal Mercury*. January 29, 1927. Tongaat: General Items. The Natal Mercury. Feb 10, 1927. Dengue Fever

Outbreak: Fresh Cases on the Berea. The Natal Mercury. March 23, 1927.
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[76] Stamp It Out. *The Natal Mercury*. March 12, 1927.
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[80] Is Durban Disease Proof?: Business Men Tackle Council. *The Natal Mercury*. May 23, 1927.
[81] *Ibid*.
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[83] *Ibid*.
[84] A Convert. *The Natal Mercury*. March 30, 1927.
[85] Here, a curious irony is worth noting. Despite the knowledge that an attack of dengue confers immunity, the likelihood of recurrent epidemics is repeatedly invoked. Counter arguments were not made that one advantage of an epidemic of this size is that it would serve the same function as a mass vaccination program. Significantly reducing the number of susceptible human hosts would limit chances, or severe outbreaks in the near future.
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[87] Good Business. *The Natal Mercury*. May 24, 1927.
[88] This quote is an assertion made in a *Mercury* editorial: A Convert. *The Natal Mercury*. March 30, 1927.
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Dr. Garland and Plymouth Hospital

Alison Barnet
South End Historian

Alison Barnet has lived in Boston's South End since 1964, most of that time on East Springfield Street. She is a graduate of Boston University and gives tours of the South End and BUMC area. She is the author of Extravaganza King, Robert Barnet and Boston Musical Theater *and* South End Character: Speaking Out on Neighborhood Change.

When Dr. Cornelius N. Garland arrived in Boston in 1903, having passed the Massachusetts state boards with high honors, he undoubtedly expected to find professional opportunities. He had graduated from Leonard Medical School at Shaw University in Raleigh, North Carolina in 1897, one of several Southern black medical schools that instilled in their students a strong sense of mission, and he had just returned from doing postgraduate work in operative surgery at London University, specializing in the diseases of women and children.

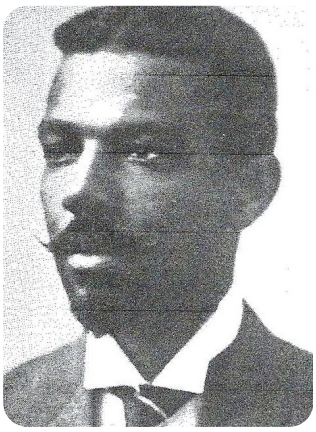
Boston was a small city with a very small black population and a great deal of prejudice. Boston City Hospital, which had proudly opened in 1864, didn't admit black doctors or nurses for training. Whether the hospital treated black patients is unclear.

Dr. Garland was born in Alabama and "worked his way up from humble beginnings," according to great-grandson Dan Reppert of North Carolina. As a young man at Shaw University, Garland was a skilled athlete, playing on the first black football team; in his senior year he was president of Shaw's Athletic Association.

During his first years in Boston, Dr. Garland lived and practiced medicine in the middle-class black community that once existed on Dartmouth and Buckingham streets near the Back Bay railroad station. In 1908, he bought a small rowhouse at 12 East Springfield Street in the South End and opened Plymouth Hospital and Nurses' Training School. Why the name Plymouth is unknown. At the time, there were fewer than twenty black hospitals, not counting drugstores, in the entire country.

East Springfield Street is a tree-lined block between Washington Street and Harrison Avenue where it meets Boston City Hospital; Plymouth Hospital was closer to Washington Street. In the early 1900s, the majority of property owners on East Springfield Street

were Irish, with some Eastern European Jews, and the South End as a whole was a mix of Irish, Canadian, Syrian, Lebanese, Greek, German and Eastern European Jewish immigrants — a large lodging house district with many charities and settlement houses. Blacks, who had moved from Beacon Hill in the 1890s, settled in the upper South End and Lower Roxbury. While other small hospitals that began in the South End — Children's Hospital, New England Deaconess, and the Free Hospital for Women — may have benefitted from their proximity to "City," Plymouth Hospital could not. Garland may have chosen the location because the El, an elevated train that started running down Washington Street in 1901, made for easy access.



A young Dr. Garland.

"The hospital was established to meet the increasing demand for hospital accommodations, where colored physicians might diagnose and treat their own cases," wrote W. N. Hartshorn, a downtown publisher who hosted a 1908 conference on the progress of the "American Negro" and put out a hefty book full of biographical information." The hospital is chartered by the state and is open to all who are in need of medical or surgical care, regardless of race, color, or religion." He noted that, although home visits had been made to "a number of white patients" in Plymouth Hospital's first year, "nearly all the work was among the colored people." [1]

In a 1914 report, Dr. Garland described Plymouth Hospital and Nurses' Training School as "a private Institution supported solely by the voluntary contributions and receipts from those patients who are able to pay something." From 1909 to 1914, 135 male and 457 female patients were admitted. As he was a surgeon, surgical patients were the majority, and there were many appendectomies, hysterectomies, and tonsillectomies. 600 people, including children, were seen in the free outpatient department, and 200 cared for by nurses doing "Free District Work" or home visits "into the homes of the poor and needy." [2]

"This free district work is with those who are not in position to pay for nurse care," wrote Hartshorn. "Frequently the nurse carries bed linen and other material where the need is imperative. The medicines are furnished free to these district patients, and there are many evidences of grateful appreciation."

Twenty-two young women between the ages of 19 and 35 registered at the Nurses' Training School the first year. "The school was open to all who possess grammar school education and physical capacity to undergo the strenuous life which necessarily accompanies the profession of nurse," wrote Hartshorn.

The community supported the hospital, with local residents, churches, and settlement houses donating blankets, bottles, rugs, tea kettles, sauce pans, nightgowns, books, magazines and, in those days of flower missions, cut flowers. Churches made referrals.

One of the keys to the success of black doctors at the time was involvement in professional associations, such as the Bay State Medical Association, founded by black doctors, dentists and pharmacists in 1930. Black doctors were able to make inroads into the Massachusetts Medical Association, founded in 1781; Dr. Garland became vice president. When the National Medical Association, which represented African-American physicians and patients, held its annual meeting in Boston in 1909, membership included 350 black physicians, surgeons, and pharmacists.

1910-1911 class of the Nurses' Training School.

From the inception of Plymouth Hospital, Boston black civil rights leader William Monroe Trotter was opposed to a racially segregated hospital and wrote against it in *The Guardian*

newspaper. When, almost twenty years later, Dr. Garland planned to expand Plymouth Hospital to Roxbury, Trotter, his sister Maude Steward, and prominent black doctors William Worthy and Walter O. Taylor objected; they were intent on integrating Boston City Hospital. [3]

In 1908, there were fewer than twenty black hospitals in the entire country.

Those must have been stressful times. Drs. Worthy and Taylor had been on the Plymouth Hospital's medical staff for years. Taylor, as a student, had roomed with the Garland family. Both were graduates of the College of Physicians and Surgeons on Shawmut Avenue, just around the corner. Garland's plan was never realized.

Dr. Worthy's daughter Myrtle was quoted in *Black Bostonia* [1976]: "A second-rate, segregated hospital was not what my father or Mr. Trotter wanted [...] a hospital for the colored." To author Lance Carden, she added, "And it would mean eventually that the colored would be shut out of the City Hospital and the clinics and sent there."

Roxbury civic leader Melnea Cass expressed another view when she was quoted in *Black Bostonia*. "[Garland] wanted a place where colored people could go and freely train [...] We needed that hospital. If we had put our forces behind it, white and black would have gone there [...] A monument to black people's ingenuity." [4]

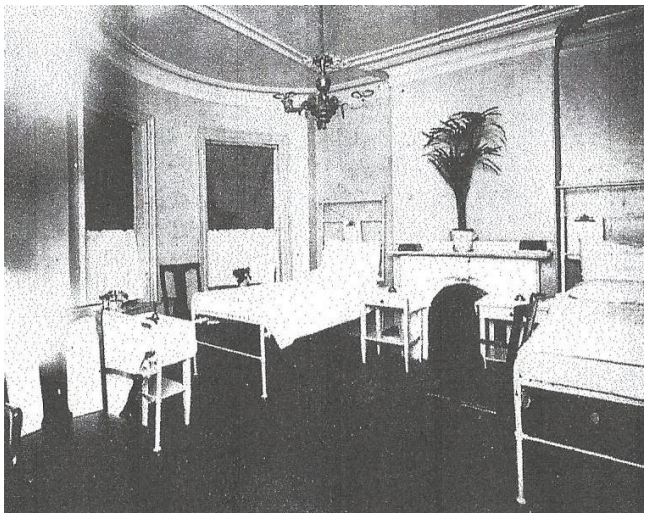
After an exchange of polite letters with the superintendent of City Hospital, in which Trotter's group stressed the legal rights of two black women who had applied to its Training School for Nurses — which was, after all, a public institution — the women were admitted in 1929. In 1931 Dr. John Hall II became the first black intern to train there, but it was not until 1949 that the first black physician, Dr. Charles Bonner, was appointed to the staff.

Plymouth Hospital closed in 1928. Dr. Garland was hardly out of business, however. For years, he had been in private practice at 225 West Canton Street in the South End, which was also his home. In the 1930s, he, his wife Maggie, and daughter Thelma moved to 173 Mason Terrace in Brookline, while his office remained on West Canton Street. They also had a comfortable summer cottage in Oak Bluffs on Martha's Vineyard, where the family was part of the Vineyard social scene. Dr. Garland was the first black man to join the East Chop Beach Club, and his daughter Thelma was one of the founders of the Cottagers, a group of black women still active in charitable activities on the island. The family spent every summer at Oak Bluffs from 1921 to 1952, the year Dr. Garland died, selling the cottage only within the last two decades.

In 1949, *Ebony* magazine ran a photo of Dr. Garland and his granddaughter Joan captioned, "Dr. Garland, Boston's richest physician, is veteran at Oak Bluffs summer colony." It didn't say richest black physician, it said richest physician. The caption also said, "Now at Radcliffe College, Joan had brilliant debut last year." [5]

Joan, like her younger sister Jocelyn and their mother Thelma, went to Radcliffe College. When she married a Harvard professor, "it was the biggest social interracial event at the time," says a local woman who knew her well and visited Oak Bluffs and Mason Terrace. She remembers the day Dr. Garland bought a new Packard and discovered it wouldn't fit in the garage. Joan and her husband moved to Ohio, while Jocelyn married a doctor and moved out west.

Thelma thought of herself as a "flapper," according to her grandson Dan. She hobnobbed with various notables of black society, including Yolanda DuBois, daughter of W.E.B. DuBois — Thelma was in her wedding party — and Frank Horne, a Harlem renaissance writer and uncle of Lena Horne. Horne dedicated a poem to Thelma, using her nickname Tele, and it was published in *The Crisis* magazine. "That was my grandmother, a fun person," says Dan. [6]



Taborian Ward, Plymouth Hospital, furnished by the Twelve Knights and Daughters of Tabor.

A Black Heritage Site plaque was put on the East

Springfield Street building during America's Bicentennial in 1976, but is easy to miss for all the ivy. Now apartments, the small, narrow house is relatively unchanged from Dr. Garland's day. The front room on the first floor still looks like Dr. Garland's office, minus the Victorian light fixtures and Dr. Garland's portrait hanging between the bow windows. The third floor is also recognizable as the Taborian ward, furnished by the Twelve Knights and Daughters of Tabor, one of the secret societies of which Dr. Garland was a member. Although the rooms on the fourth floor have been reconfigured, the operating room skylight remains. Other small hospitals in the area that started in rowhouses also had their operating rooms on the top floor for the light, and staff had to carry patients up all the stairs — undoubtedly part of "the strenuous life which necessarily accompanies the profession of nurse."

Dr. Garland's first floor office.

Plymouth Hospital is not ancient history when you consider that people still living were treated by Dr. Garland. Richard Brown of Tremont Street, for instance, now in his late eighties, saw Dr. Garland when he was a child. "I grew up with a bunch of heroes," he says.

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The above photos are from W. N. Hartshorn, ed., *An Era of Progress and Promise, 1863-1910, The Religious, Moral, and Educational Development of the American Negro since His Emancipation*. 1910.

Notes:

[1] Hartshorn WN, ed. The Clifton [MA] Conference, *An Era of Progress and Promise, 1863-1910, The Religious, Moral, and Educational Development of the American Negro since His Emancipation*. Boston, MA: Priscilla Publishing Co; 1910.

[2] Garland CN. Report of the Plymouth Hospital and Nurses' Training School. 1914.

[3] *The Guardian*, which was Boston's black newspaper, was co-founded by William Monroe Trotter in 1901. Trotter was the editor.

[4] Boston 200 Corporation. (1976). *Black Bostonia*.

[5] *Ebony Magazine*. July 1949: 42.

[6] *The Crisis*, an official magazine of the National Association for the Advancement of Colored People (NAACP), was founded by W.E.B. Du Bois in 1910. It was a major vehicle for stories and poems by black writers during the Harlem Renaissance.

From the BUSM Archives

This is a 1939 photo of Boston Medical Center's Dowling Building. The building was completed in 1937 for $1.6 million. It had 288 beds and 14 operating rooms in its 9 stories. Today, it houses mostly offices.

Laboring and Learning in the American Residency:

Balancing Education and Service in the Nineteenth Century and Today

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There have been several epochal shifts in the American residency training landscape in the last 150 years, including the Oslerian revolution at Johns Hopkins in the 1880s, the labor disputes of the 1960s, and, more recently, the arrival of work hours restrictions and competency accreditation and the Milestones with the Next Accreditation System, delineated by the Accreditation Council for Graduate Medical Education. The rapid pace of current and predicted change in healthcare delivery models (e.g. pay-for-performance, patient-centered medical homes, accountable care organizations, etc.) should bring about further large-scale shifts in how graduate medical education (GME) is shaped in this country, with new emphasis on ambulatory training and the teaching of value-added care. [1]

As we approach this new period with anticipated changes, there is value in reconsidering one of the fundamental dualities underpinning residency training - the intrinsic tension between residents as laborers and learners. On the one hand, residents are responsible for helping hospitals run on a day-to-day basis, whether it is so called "scut" work or the cognitively complex aspects of patient care. On the other hand, residency programs are responsible for training them to become competent clinicians, teachers, and often scholars, with both clinical experience and didactic curricula. This dichotomy informs every aspect of a resident's work life. In effect, there exists a social contract between programs and residents. In exchange for defined incomes, helping the hospital function in an efficient manner, and teaching junior clinicians – both junior residents and medical students - hospitals train and give their imprimatur to residents.

Historian Kenneth Ludmerer has looked extensively at this dynamic in late nineteenth and early-mid twentieth century training programs. [2] From the Oslerian transition to modern residency programs in the late 1800s onward, hospitals and accreditation bodies have wrestled with finding the optimal balance between residents' laboring and learning. Notably, this dichotomy predates even the earliest formal residency programs, having roots as far back as the post-apprentice era in the early nineteenth century. At the end of the eighteenth century medical apprenticeships were the norm; individual pupils would learn at the side of individual clinicians. [3] By the nineteenth century, with the rise to prominence of several university-based medical schools, post-graduate house physician and house surgeon positions proliferated. These

trainees served similar roles as modern residents, staffing wards and caring for patients under the supervision of staff physicians.

With the arrival of formalized house physician and house surgeon positions in the early nineteenth century, in cities such as New York, Boston, and Philadelphia, this laborer/learner dichotomy became crystallized. One manifestation was the day-to-day schedule residents were asked to work. Nineteenth century house physicians worked essentially continuous shifts, as a rule residing in the hospital, often with little or no pay - most hospitals had only one or two housestaff. Indeed, the designation of "resident" derives from the fact that the physicians in training lived on the sites of teaching hospitals. Towards the end of the century, with the arrival of electric lights and better surgical techniques, truly twenty-four hour care could be delivered. Some housestaff were asked to maintain the hospital's "electric and galvanic apparatus always in perfect order," [4] or to function as surgical technicians or *ex officio* librarians in addition to patient care duties. [5] Others "[saw] that the medicines sent to the sick [were] regularly taken," overseeing nursing practice and patient adherence, [6] all while caring for as many as seventy-five patients at a time.

The tension between residents' dual roles as laborers and learners hasn't been diluted with time. Routine work that residents do every day to ensure adequate workflow is a direct analogue to that of the nineteenth century. While "learning by doing" is a central GME tenet, many tasks current residents perform are of less obvious educational benefit. This tension reflects the inherent social contract that exists between hospitals/residency programs and housestaff.

At the same time, it is worth noting that the roles of laborer and learner are not mutually exclusive. In order to attain sufficient experience and to achieve understanding and expertise, rather than just knowledge or familiarity, learners may require engagement in tasks which might feel like laboring but have clear learning value. A resident can be "laboring" – for example, reconciling a patient's medications or treating congestive heart failure for the 100th time– while at the same time learning: e.g., finding new and instructive nuances in every case or becoming expert by means of repetition or discovering how to complete tasks efficiently. The story of the evolution of residency programs and GME regulation can largely be viewed as a commentary on this central duality.

Enhanced oversight and new regulations have actually made the dichotomy between residents as laborers and learners more prominent and transparent, being further compounded by increased clinical loads, decreased lengths of stay (adding to the clinical burden) and increased requirements for documentation of teaching and learning. Furthermore, faculty experience an analogous split between their duties as clinical care providers and educators. Their increased clinical load, and increased responsibilities for evidence-based educational outcomes is in many ways a mirror image of the often-conflicted duality facing residents. While paid for their clinical labor (through relative value units), they have rarely been compensated for teaching and learning, which is also considered an honor in most teaching hospitals.

The evolving state of American health care, and thus GME, will surely put new stress on this social contract. As laborers, residents (and residencies) will need to adapt to the changing reality of accountable care organizations. This will require additional staffing roles in the ambulatory arena and potentially necessitate protected time for residents to practice in the outpatient setting. As learners, residents will need, and residencies will be required to provide, additional training in provision of value-added care, quality metrics and patient safety. To meet these needs, the faculty will require additional training to provide such education in a newly formed system with which they have limited experience.

While residency in the twenty-first century will in many ways not resemble what came before, the tension of resident as laborer and learner will almost surely remain. It is neither new, nor simply a product of the Oslerian residency. It has far earlier roots in American medicine and understanding those roots, and appreciating the impact of modern healthcare on the resident as both learner and laborer, will ensure a smoother transition to the next generation of residency programs.

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