Introduction to the History of Medicine

Fall 2015

September 9 – October 14
Introduction to the History of Medicine – M04 577H

Syllabus

Description/Objectives:

This is a survey course on the history of medicine, concentrating on the contributions of some of the major figures in the historical development of medicine. The objectives will be to explain how medical science developed from antiquity to the 20th century. At the end of this course, students will be able to:

- Identify 15 physicians who, over the course of the past 2500 years, made original and important contributions to the development of modern medical science;
- Describe how each contribution advanced medical diagnosis, treatment and medical theory; and
- Identify a specific figure or topic in the history of medicine which personally interested each student for a consideration of additional study.

Locations: Center for History Of Medicine – Bernard Becker Medical Library, 6th Floor; Archives and Rare Books, Bernard Becker Medical Library

Time: Wednesday, 3:30 – 5:30 p.m. (unless otherwise noted)

Format: 3:30 – 5:00 p.m. Students discuss and summarize assigned articles – Center History Of Medicine;

5:00 – 5:30 p.m. Examination of Archival Materials – Archives and Rare Books

Subjects to be discussed:

- **Week I** – Ancient Medicine: Hippocrates and Galen
- **Week II** – The Beginnings of Modern Medicine: Andreas Vesalius and William Harvey
- **Week III** – Great Developments in Internal Medicine: René Laennec and Ignac Semmelweis
- **Week IV** – The Rise of Pathology: Giovanni Morgagni and Rudolf Virchow
- **Week V** – The Development of Modern Surgery: The Discovery of General Anesthesia and Joseph Lister
- **Week VI** – Medical Science in America: William S. Halsted, Helen Taussig and Alfred Blalock

Participants: WUSM I Students

Becker Library Archives and Rare Books Staff: Ms. Elisabeth Brander, Rare Book Librarian; Mr. Stephen Logsdon, Archivist; Ms. Martha Riley, Rare Books Cataloger & Archivist; Mr. Philip Skroska, Visual and Graphic Archivist

Faculty: Robert M. Feibel, MD, Professor of Clinical Ophthalmology and Acting Director of the Center for History Of Medicine

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Readings

Week I – Ancient Medicine: Hippocrates and Galen

Required reading
Assigned readings via Announcements on CANVAS

Recommended reading
Nutton: Ancient Medicine
Chapter 4 - Hippocrates, the Hippocratic Corpus and the Defining of Medicine
Chapter 6 - Hippocratic Practices
Chapter 15 - The Life and Career of Galen
Chapter 16 - Galenic Medicine

Week II – The Beginnings of Modern Medicine: Andreas Vesalius and William Harvey

Required reading
Assigned readings via Announcements on CANVAS

Recommended reading
Aird: "Discovery of the Cardiovascular System: From Galen to William Harvey"

Vesalius, Saunders, and O'Malley 1950: The Illustrations from the Works of Andreas Vesalius of Brussels (pdf)

Week III – Great Developments in Internal Medicine: René Laennec and Ignac Semmelweis

Required reading
Assigned readings via Announcements on CANVAS

Recommended reading

Roguin: “Rene Theophile Hyacinth Laënnec (1781-1826): The Man Behind the Stethoscope”
http://wwwncbi.nlm.nih.gov/pmc/articles/PMC1570491

Case: Handwashing
http://www.accessexcellence.org/AE/AEC/CC/hand_background.php

Historical Perspective on Hand Hygiene in Health Care
http://www.ncbi.nlm.nih.gov/books/NBK144018

Week IV – The Rise of Pathology: Giovanni Morgagni and Rudolf Virchow

Required reading
Assigned readings via Announcements on CANVAS
**Recommended reading**

Tubbs: “Giovanni Battista Morgagni (1682-1771): His Anatomic Majesty's Contributions to the Neurosciences”

Weisenberg, Elliot: “Rudolf Virchow, Pathologist, Anthropologist, and Social Thinker” in Hektoen International: A Journal of Medical Humanities

**Week V - The Development of Modern Surgery: The Discovery of General Anesthesia and Joseph Lister**

**Recommended reading**


Rav, P. Prithvi: Chapter 1 - Historical Aspects of Regional Anesthesia from *Textbook of Regional Anesthesia (pdf)*

**Week VI - Medical Science in America: William S. Halsted, Helen Taussig and Alfred Blalock**

**Recommended reading**

“Blue Baby Operation” (exhibit in the Alan Mason Chesney Medical Archives of the Johns Hopkins Medical Institution)
http://www.medicalarchives.jhmi.edu/page1.htm

“The Four Founding Physicians”
http://www.hopkinsmedicine.org/about/history/history5.html
History of Medicine Reflection

I had initially come into this selective under a very generalized assumption that the developmental path of medicine paralleled that of almost any other scientific discipline, where each progressive discovery occurred as a function of time and repeated efforts. In a way, I viewed the physician scientists in the context of their individual discoveries rather than as individual physicians and human beings. I had essentially forgotten to realize the importance that unique personalities and interpersonal relationships between physicians have on the acceptance or rejection of new theories, and ultimately the development of medicine as a whole.

I was particularly struck by the depth of attention that Nuland included in painstakingly describing the unique personalities and formative life experiences of these physicians before delving into their accomplishments. In most cases, this was very helpful in not only understanding the driving forces behind their drive to change medicine, but also in describing the intellectual milieu at the time in which they were thrusting their groundbreaking theories and practices. In many cases, these men and women of science faced initial opposition from their peers, but through research and repeated demonstrations, their discoveries often became instilled in the practice of medicine. However, one named seemed to stand out in this respect during our weekly discussions; that of Ignac Semmelweis. It was quite frustrating to read about Semmelweis’ tragic career, especially when juxtaposed to the other chapters of physicians who were nearly always successful in seeing their ideas come to fruition. Semmelweis’ career strongly displayed the other side of medical development, one that was not completely objective but instead relied heavily on catering to the desires and feelings of physicians and their egos. Semmelweis had happened to come across a discovery that, while unbelievably important, indirectly incriminated physicians as having unknowingly passed infections on from patient to patient. This theory would have been controversial and polarizing no matter the personality of its scientist, but I could not help but feel that if Semmelweis had been a more flexible, personable, and socially conscious physician, the antiseptic movement might have had a chance of coming about sooner than Lister’s 1867 publication.

In addition to offering a fascinating window into the development of modern medicine, this course allowed me to understand the impact of professional relationships not only between physicians and their patients, but also between physicians themselves. Medicine is intrinsically a field where its members depend on each other for assistance, knowledge, and support and I feel that our discussions in class, as well as the story of Semmelweis, have furthered my understanding of the complex nature in which medicine progresses.

History of Medicine

I signed up for the History of Medicine course in hopes of “getting back to the basics” of medicine. Nowadays, with all the non-patient-care complications that come part and parcel with being a doctor—everything from dealing with insurance companies, to figuring out constantly developing electronic note-taking programs—I wanted a reminder of what this field had come
from. I imagined that things had been simpler once upon a time. And in a way, being a doctor was simpler in the times of Hippocrates, or Morgagni, or Semmelweis. It was also far more limiting, both in terms of medicine’s knowledge base, and its base of techniques.

I’d always known, of course, that the doctors of times gone by relied on shaky (and oftentimes utterly incorrect) theories. But it was fascinating to delve into the hows and whys of their remedies—and to learn that once, anatomy wasn’t considered relevant knowledge for a physician to know. Even with my understanding of medicine’s crude roots, I’d assumed that early doctors knew to associate ill health with failings of the physical body—though I suppose I should have guessed that they wouldn’t, considering their emphasis on more nebulous disease sources such as “bad air” or even spirits.

It was also interesting to follow medicine’s development through the years, and note how said development came in fits and starts. Everything needed to fall into place at the right times and place in order for progress to be made. Too early, and said progress would be rejected by an older generation already too set in its ways. Although this resistance to change is a human trait that I doubt we will soon lose, today’s medical community does seem rather more receptive to—and indeed expecting of—advances in its field. It was surprising to me (though perhaps it shouldn’t have been!) that advances seemingly as obvious as antiseptics were long railed against, and that no one understood that washing one’s hands between dissecting a corpse and delivering a baby might be a good idea.

Although this wasn’t emphasized in the course, I also came to realize how most of the individuals we learned about were independently wealthy, thus giving them the time and resources to pursue their studies and/or research. In a time when we as medical students are taught to think about the social determinants of health, and to be sensitive to the variety of social and cultural differences between us and our patients, it was interesting to consider the backgrounds of the tentpoles of Western medicine. Certainly, it became clear that most came from a similar background, with the one female doctor we studied coming relatively late in the game, and facing a lot of struggle due to her gender.

Overall, I had a great time in the course, and I hope this Selective will remain an option for future students. Learning about the history of our future profession, and the hardships of physicians past is a nice balance to the nitty-gritty of what we’re learning in our core classes. What’s more, it helps me appreciate where the medical field is today.

Reflections on the History of Medicine

Medical school is the kind of place that makes it very easy to lose sight of the forest for the trees. Much of the material we are learning about is detail-oriented to the point of myopia, making it hard to see the bigger picture. My favourite aspect of this course was that it pushed back against some of that myopia by delving into not only the characters involved in the history of the medical field but also the social contexts within which their actions were embedded. Oftentimes, it was not only the achievements of the individual that drove medical progress but also the social conditions and cultural developments of their times that readied both the medical profession and the greater world at large to accept their work.

My favourite illustration of this goes all the way back to our first class in the form of the dichotomy between the Coan and Cnidian physicians of Hippocrates’ time. Although the Cnidian
physicians practiced a form of medicine that more resembles the biomedical model of thinking we use today, the lack of accurate biological knowledge that characterized medicine during those times made it impossible for that model of thinking to be successful. Thus, the thinking of Hippocrates and the Coan School, rather than that of the Cnidian School, is what lives down from that era as the early origins of the Western medical profession.

The next poignant illustration of the role of sociocultural factors in the development and progression of medical thought comes from Andreas Vesalius and his Fabrica. The production of the Fabrica was only possible given the intellectual environment of the Renaissance, which provided both the interest and audience for this type of work. It was the Renaissance interest in the world of man that brought artists into the realm of anatomical study and made ripe the opportunities for Vesalius to assemble his work. The Fabrica could have only come about in a time like the Renaissance. Removed from the intellectual environment of the times, Vesalius' great accomplishment would have been an impossibility.

On the other hand, there were also stories of physicians who, like the Coans, were too early for their times. Auenbrugger and his technique of percussion is one good example. His technique arrived before the medical field had accepted the need for physical examination techniques and was thus not embraced by physicians until after his death, when Corvisart happened upon his work. Corvisart, in turn, was a part of a transitional era in medicine in which the need for diagnostic accuracy was emphasized and pursued through the physical examination of the patient. It was only in this climate that it was possible to push forward the usefulness of a technique like percussion.

Something related that piqued my interest during our discussions of these various figures and their influences on the field of medicine is how medical progress often takes place in the form of paradigm shifts in how we understand illness and health. From the humoral models of early medicine to the biomedical models of present day medicine, each era has defined its own mode of thinking in order to understand how people get sick and how people can be restored to health. It is the evolution of these models and theories that push forward our ability to better help those who are sick. Again, these paradigm shifts are also embedded within the greater social and cultural environment, with sociocultural movements shaping the intellectual direction towards which great thinkers are pushed.

I think this is going to be particularly relevant in our current healthcare climate, where pushes towards new models of thinking about health are already starting to emerge as the types of illness that plague our society shift from infectious acute illnesses to chronic and oftentimes lifestyle-related illnesses. The movement to replace the biomedical model with a broader model that removes some of our current reductionist tendencies is already beginning, with models like the biopsychosocial model stepping into prominence. These models are becoming practically applicable as we begin to gain a better understanding of how various factors can interact in order to bring about a disease condition. Advances in fields as broad and different as epigenetics to psychiatry are making it possible for this new paradigm shift in modern medical care. Alongside these developments in medical knowledge, the current focus of modern research and technology on big data, interdisciplinary studies, and a growing trend towards personalization in all facets of life also supports the changes we are seeing in the field of medicine. Again, we can see the influence of social and cultural forces on the development of medical care. It will be interesting to see how these new paradigm changes play out in terms of the evolution of medical practice and how we deliver medical care in the future and I am really glad that I have had the opportunity to explore how earlier such changes in the field of medicine came about through this course.
In History of Medicine, I was especially struck by a Nuland’s quoting of Marcus Aurelius at the end of the Galen chapter: “I search after truth, by which man never yet was harmed” (60). Nuland, I think, intended this to refer to Galen’s legacy as a prodigious theoretician and observationalist—his experiments with heartbeats, arteries, and the recurrent laryngeal nerves. But it is important to note that “truth” is very different from “the Truth”. Despite Galen’s greatness as an experimentalist, he was also blinded by his teleology, the belief that there was a perfect and grand God-given purpose that underplayed each of body structure. It was this Truth that led to his positing of “psychic pneuma” and the reta mirabile—ideas that were not only incorrect but also harmful to the further progression of medicine.

But Galen was not the only physician-scientist that was harmed by searching after Truth, nor would I have expected him to be. Ignac Semmelweis’s discovery of using chlorine solution to decrease obstetrical mortality rates due to puerperal fever was buried by his fragile self-esteem and resultant self-destruction. Laennec, who invented the stethoscope for auscultation, was later afflicted with the same disease that he had studied as a medical student. The seeking of truth, in these and many other cases, did end up causing harm.

It was this paradox of truth—of its simultaneous ability to confer greatness and harm—that grounded my understanding of the history of medicine. It is, after all, only through the discoveries and experiments of those before me that I am able to diagnose and treat patients today. Without Laennec, I would not have my stethoscope. Without Pasteur, I would not have the germ theory of disease. As a medical student today, I can read and understand these great doctors and how they succeeded and erred, and incorporate their experiences into my own searching after the truth.

I gained a broad understanding of medical history from this class. I learned a good deal about a number of significant figures, and also learned what factors lead to their success and acceptance. Galen was so successful at convincing others that no deviation from his work was permitted for over a thousand years, while doctors like Lister struggled to convince their colleagues even when his methods were incredibly effective at preventing disease.

Galen’s story was particularly interesting to because the same traits that brought him fame and success lead to the stagnation of medical science for 1300 years. Galen was a careful dissector of cadavers and animals, and discovered many fundamental truths about medicine. He demonstrated the difference between venous and arterial blood, discovered the anatomy of the trachea, and showed that the arteries did not contain air. His experiments were precise and careful, and thus even without access to human cadavers he was able to advance medical knowledge in the face of traditionalism. He had a forceful personality and would berate and adamantly denounce those older and more experienced than him when he could prove them wrong. His brilliance and abrasive argumentation lead him to quickly ascend to a respected position, and even bred some trepidation among his colleagues of opposing him. He would dispel fallacies through demonstration, and admonished those who clung to tradition to simply observe for themselves. Sadly, this message of inquiry and observation was lost, and his followers instead enshrined his work as infallible. For centuries his work was unquestioned, and dissections included in medical curriculum only as an uninteresting proof that Galen was correct. That same forceful personality and condescending brilliance which had allowed him to convert others had been too convincing, and the medical community adhered his work unwaveringly without absorbing that spirit of scientific skepticism which had given rise to it.
Lister, by comparison, was largely unsuccessful in his lifetime at convincing others to abandon their surgical techniques for antiseptic surgery. Before him, surgeries were dazzling affairs done in minutes to avoid exposure to oxygen, which was thought to cause infection. Infections were incredibly common, and as such the only drastic surgeries like amputations were performed. Lister's method of bandaging and obsessively washing and rewashing instruments and bandages lead to incredible decreases in infection. However, these methods lead to a slower and more deliberate surgery, which was unappealing to his colleagues. Instead of a flashy amputation done in front of an amphitheater's audience in less than a minute, Lister's style was repetitive and required aerosolizing and washing with caustic chemicals that burned the face and hands of the surgeon. Part of the problem lay in the unappealing methodology of his surgeries, but another was in the lack of acceptance of germ theory. His work was eventually adopted, but was short lived as antiseptic surgery was improved into aseptic surgery. Germs were prevented from entering the wound in this new and even more meticulous brand of surgery, not killed afterwards by washes and phenol soaked bandages.

In the end, it seemed that change was always too slow to be adopted for the scientists that pioneered these new fields. Established physicians are sometimes slow to adopt new methods, but change comes eventually with new generations of scientists, although sometimes not for many years. There was no common pattern that lead to successful recognition or failure of adoption, but instead each story was different, and each had a different time period behind it.

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History of Medicine Reflection Paper

One aspect of the class I really enjoyed was going to see the rare books archive. It was interesting learning about the printing process and seeing all the details in the illustrations. The fact that the illustrations are all carved individually is incredible, and the amount of skill that is required to make them is amazing. I especially enjoyed seeing the Fabrica, as it was essentially the first anatomy textbook. It was fun to compare the anatomy illustrations to current textbooks as a first year medical student learning anatomy for the first time. I also enjoyed noticing the differences in printing as it progressed from the 16th century to present. The way that the fonts and type changed, the difference between copper plating and wood cut illustrations, and the quality of paper and binding are all aspects of printing we witnessed differ among the variety of books we saw in class. A lot of these aspects were components of printing I would not have realized were important. The back-story of the books were also interesting, especially the fact that Vesalius went all the way to Switzerland to have his book printed instead of staying in Venice. After reading about each of the physicians, I enjoyed being able to connect them to physical copies of their actual work.

One part of the book that I found very interesting was the contrast in every chapter of each physician's personalities and their mental health. As a medical student, I think it is really important to maintain good mental health to prevent burn out and for patient outcomes. Reading about the discovery of anesthesia and the contrast of each contributor's mental health was very eye-opening. The fight over trying to become the inventor of anesthesia led to such severe deterioration in the mental health of Morton, Wells, and Jackson. In addition, Semmelweis too suffered from mental illness. These cases bring light to the importance of mental well-being and show the extreme obsession and sacrifices of each individual for medical discovery and personal recognition.

Even though the book was about doctors of the past, it was enlightening how many of the themes are still relevant to medicine. For example, the contrast of the Knidian and Koan schools of
medicine still exists in balancing the art and science of medicine. Lister and Sommelweis’ germ theory and hand washing protocols are still a problem for hospitals and preventing hospital-acquired infections is still an important problem in health care. The progression of inventions and their incorporation into medical practice, such as the stethoscope and microscope, changed medicine, as have genome studies and electronic medical records in current practice. Halsted’s organization of medical school and residency also persists today. Though thousands of years have passed since Hippocrates, we still declare an oath at the beginning of medical school. It is interesting to have learned about how much medicine has evolved since those early times, yet some things remain very much the same.

In conclusion, I really enjoyed this course. I found the book to be very interesting, though sometimes a little verbose. I learned a lot about various historical doctors and enjoyed learning about aspects of their lives that I would not have otherwise known. Going to see the rare books was probably one of my favorite aspects of the course as well as the discussions with my peers.

I really enjoyed taking this course. Thank you for putting it together this year as a new course! I love history, and when I saw this course was offered I knew I had to take it. My favorite part was being able to see the rare books at the end of every class. I love going to history museums, but everything is always behind glass. I loved how we got to actually hold the books in our hands and flip through them. I’ve never been able to do something like that before. Having the presenters there to explain the significance of all the different texts was really helpful as well. It completed the experience to have read about and discussed for instance, Vesalius’s Fabrica, and then be able to go upstairs and see a first edition of it firsthand!

One topic we discussed that I found particularly interesting was the advent of antiseptic and physicians’ acceptance of its use. It is astounding to me to know that as late as the 19th century surgeons were accustomed to performing operations in the same black coat, the accumulation of dried blood and pus a testament to their experience in the operating theater. The idea of that same practice occurring today in most hospitals of the developed world is appalling. It is so second nature to us now that germs exist and that a sterile environment must be maintained during operations. New packages of tools will even be opened just in case of a potential compromise of sterility.

Semmelweis and Lister were both key contributors to germ theory and the implementation of antiseptic practices. Despite the importance of their discoveries, many doctors were very hesitant to adopt their techniques, and some were even against them. It is interesting that many physicians wouldn’t listen even though there was clear evidence that practices such as handwashing could improve the health outcomes of their patients, especially in Semmelweis’s situation on the maternity wards. Today it seems like physicians are generally more open to new ideas. One reason for this might be the fact that research plays such a huge role in medicine now. We are always looking for new solutions to improve the health of patients. Perhaps physicians are more accepting because changes aren’t as drastic now as they were back in the time of Lister and Semmelweis? Or perhaps the strict regulations for proving the efficacy of drugs/treatments make it easier for physicians to trust new ideas? Regardless, it is incredible how much things have improved even over the last couple of hundred years. It makes me excited to see where we’ll go from here.

Some last comments about the course in general: The book was great at highlighting the
stories of some of the main contributors to the medical field since its inception. I will say that the
author has a tendency to be a little verbose, which made it hard for me to grasp the overall picture
sometimes while reading, but I also liked how he depicted each person’s personality and not just
what they contributed to medicine. Please continue this course next year! I think it’s wonderful to
have the opportunity to take courses like this one, especially during our first year. Thank you!

History of Medicine Assignment

During a lecture to the University of Lille in 1854, Louis Pasteur said the following, “In the
fields of observation, chance favours only the prepared mind.” During this wonderful selective we
had the opportunity to learn about the works of some of the greatest minds in medicine. Despite the
vast differences in their lives and the times in history in which they made their contributions, one
can find some common themes of dedication, vision, preparedness and even compulsive obsession,
that when combined with the right external factors, which we can perhaps call luck, will lead to the
adoption and recognition of those works.

In the course of this selective, it was very enjoyable to see the progression of medical
knowledge and understand how discoveries are built upon previous works of other pioneers. One
thing that struck me was how little we knew before and yet very few people were challenging the
status quo and trying to improve upon our knowledge. This was especially true after the time of
Galen, whose brilliant work for his time remained unchallenged for nearly 1300 years despite
having some major errors. It took one curious man, Vesalius, to break through that barrier and
provide us with correct anatomy based on the studies of humans. As a young medical student, this
story provides a lot of encouragement to seek innovation and discovery at a time where our
expansion of knowledge seems overwhelming. Sometimes people do things for the fact that they
were taught that by an earlier teacher, without challenging those ideas and asking themselves
whether it could be changed or improved upon.

We definitely learned some valuable lessons from the successes of the early pioneers like
Hippocrates, Galen and Vesalius, as well as the more recent ones like Helen Taussig or Joseph Lister.
However, I learned the most from the failures of some those pioneers, most notably Ignac
Semmelweis, whose brilliance was evident, yet his arrogance, close-mindedness and attack of
colleagues were partly responsible for his ultimate failure and the delayed adoption of his ideas. It
was very eye opening to learn the importance of putting in some effort into sharing your
discoveries and ideas and even sometimes advocating for them, like Galen did, and not assuming
that people will automatically recognize them. This was one of the many lessons we can learn from
their lives, and I believe that the discussion format of this course allowed us to reflect upon what
we read and share our thoughts in a productive way.

One of the highlights of this course was the time we spent at the Rare Books Library, seeing
and even touching the works of the medical giants we learned about. The librarians also did a
wonderful job by teaching us a lot about the history of book printing and explaining the stories
behind some of the books we saw.

Overall, I’m very glad that I took this selective, it was very well organized and I very much
enjoyed the format of it. The book that we used for it was also well-written and smooth to read with
very interesting stories about the people we learned about. Thank you Dr. Feibel.
The History of Medicine Course

This course was a great overview of the medical advances that lead to modern medicine. I was fascinated in how research progressed from exploring the anatomy of the human body to investigating the pathology behind diseases. Galen began the process of seriously researching and recording the anatomy of the human body, and it was further corrected and expanded by Andreas Vesalius and William Harvey. However, despite their immense advances in the understanding of anatomy, there was still a distinct disconnect between the anatomy and the underlying causes of disease. They were practicing physicians, and understood human anatomy, but it was still commonly thought that general changes in body humors caused diseases instead of changes restricted to specific organs. Not until Giovanni Morgagni and Rene Laennec started their research were the changes that diseases caused in specific organs explored. These advances started to close the gap between anatomy and the practice of medicine.

In addition to learning about the progression of medical research as time went on, it was also interesting to analyze the reactions that came from the different discoveries. The resistance to certain advances, such as the corrections to Galen, were based on the belief that the new knowledge was factually incorrect. Other advances, however, were resisted due to less scientific reasons such as moral implications (Ignac Semmelweis) or were accepted almost without resistance (Morgagni). Learning about where modern medicine has come from has been a great way to put the new knowledge we are learning in medical school into context. The textbook was enjoyable to read and the advances we learned about were well spaced to connect very early medicine to modern medicine. The beginning of the course was especially interesting because the first few physicians we learned about built almost directly upon the physicians from the previous week. Overall I enjoyed taking the course and learning about the history of medicine.

Medicine’s Suppression of its Avant-Garde

In his infamous valedictory address at Johns Hopkins University, Doctor William Osler asserted that physicians over the age of forty were of “comparative uselessness” while those over the age of 60 should be granted a “peaceful departure by chloroform.” Dr. Osler’s motivation for this statement originates from the concept of a “fixed period,” which posits persons of advanced age lack the industry and vigor of younger colleagues. This concept is most apparent in his speech through the assertion that the “sum of human achievement in action, in science, in art, in literature – subtract the work of men above 40, and while we should miss great treasures, even priceless treasures, we would practically be where we are today.”

While I disagree with his concept of the “fixed period,” Osler’s advocacy for promotion of the forced retirement of older physicians resonated with me due to historical context provided by Sherwin B Nuland’s Doctors: The Biography of Medicine. In particular, the book illuminates the recurring theme of older, established doctors rejecting younger colleagues’ innovations in the science and practice of medicine.

I first observed this theme in Andrew Vesalius’ attempts to correct inaccuracies he discovered in Galen’s depiction of human anatomy. Galenic tradition and science had dominated medicine for a millennia and Galen was revered as an infallible, godlike figure amongst physicians. When Vesalius first openly challenged Galenic anatomy in Bologna, students cheered his brashness and innovation while professors turned their back in response to his transgression of the irreproachable Galen. Following this lecture, Vesalius went to work on Fabrica, documenting and
providing evidence for over 200 inaccuracies in Galen's anatomy and advocating that all scholars of anatomy pursue learn via dissection themselves. While the book and its revolutionary content were largely accepted, older conservative entities in the field of medicine and anatomy decried his work. Of note, Vesalius' former professor Jacobus Sylvius published the book *A Refutation of the Slanders of a Madman Against the Writings of Hippocrates and Galen* which spewed vitriol and slander towards Vesalius and his work. The opposition Vesalius faced was sufficient to drive him to burn his work in a fit of frustration.

An additional example presented itself in the figure of Ignac Semmelweis in his work to reduce the maternal mortality due to puerperal fever. Although one could argue that his theories and methodologies to reduce deaths attributed to childbed fever were not adopted because science had not yet generated germ theory, the efficacy of his methodology should have provided sufficient impetus to change the practice of obstetricians, even if a causal mechanism could not be absolutely verified.

The examples above and hesitation towards reform today in the form of physicians rejecting patient-centered models of healthcare has made me wary of the deleterious effects of conservative forces within medicine which would prevent its progress and improvement.

Introduction to the History of Medicine Reflection Essay

Being a Classics major during college has honed me into a strong proponent for the study of history, for the simple reason that despite vast differences in technological and scientific knowledge available between now and millennia ago, the motivations and thought processes that drive humanity's actions have changed very little. This mindset inspired me to take this course, which I found to be a great primer on the overall development of the art and science of medicine.

I was particularly excited to read and discuss the Hippocratic approach to medicine initially because of my biased interests in classical antiquity; however, completing the chapter actually gave me further insight and reasons to appreciate Hippocrates beyond a simple association with the ancient Greeks. For example, it was interesting to learn about the humoral schema of medicine, which was the first concrete movement away from the supernatural cause of disease and towards the classical Greek tenet of humanism – man is the measure of all things, including disease and treatment. More relevant to my own studies in clinical medicine though was the Hippocrates' approach to medicine during a time when treatment was largely ineffective: there was a corresponding emphasis on observation, sensitivity, professionalism, and all the other "soft" skills that comprise the art of medicine. The recognition that "life is short, the Art is long, opportunity fleeting, experience delusive, judgment difficult" truly highlights the fact that the foundations for good clinical practice were literally laid thousands of years ago, that even now, Hippocrates is an aptly chosen physician ideal.

Perhaps even more interesting to me was the general theme throughout the history of medicine that even though someone may develop a revolutionary idea, timing can very drastically impact how readily it will be adopted by the masses. We see this early on with the Cnidians, who approached disease with a reductionism not dissimilar to modern biomedical practice but did not succeed because they were essentially too early for their time. Both Vesalius and Harvey made important contributions in anatomy and physiology respectively, but there were no parallel advances in therapy that could take advantage of their findings in a meaningful manner. Similarly, Semmelweis's hand-washing protocols were met with low adherence not only because of the
rigidity of the medical community at the time, but also because the principles of germ theory had still not been fully elucidated. I believe that these patterns in history certainly provide some food for thought regarding our attitudes towards current biomedical research as budding physicians and scientists.

With regards to the course materials and structure, I especially enjoyed our time in the Archives and Rare Books section of Becker Library. Reading about Vesalius and his contributions to anatomy is vastly different from appreciating early editions of his actual anatomical atlas and placing his work in the context of his contemporaries. I found the actual course text by Nuland to be effective in providing several snapshots throughout the development of medicine as we know it today. *Doctors* does not claim to be comprehensive, and despite Nuland's occasional tendencies to elaborate on relatively unimportant historical detail or wander off on tangents, he infuses enough background story and personality into each of his characters for readers to really appreciate the motivations, passion, conflicts, and even intermittent drama that lie behind the major milestones in medical history. It was, all in all, a very humanistic style about a potentially dry subject matter that I found engaging and very appropriate for an exposition on a fundamentally humanistic profession.

**History of Medicine Final Paper**

The History of Medicine selective broadened my understanding of medicine by exploring the medical field during different eras, describing major contributions/contributors in medicine, and showing how we came to where we are today in medicine. In this reflection, I will address the two major aspects that struck me the most. First, to me, it is amazing how long medicine has existed in human culture. Even if medicine consisted of harmful treatments such as bloodletting or had treatments with no scientific basis, essential components of modern medicine was seen in ancient and pre-modern times. Some examples of this include Hippocrates’ philosophy and ethics of medicine, Galen’s observational approach, Vesalius’ direct study of the human body, and Harvey’s experimental evidence when discovering blood circulation. These individuals not only contributed specific findings in medicine, but also shifted the mind-set of medicine at the time. Additionally, the modern concept of treating the whole patient actually arose thousands of years ago. A lack of knowledge couldn’t attribute a disease to a biological cause, but the practice of including all aspects of a patient’s life was just as important then as it is now. I have always considered older forms of medicine as too primitive and not very relevant. However, after this course, I now understand that many broad and even specific aspects of medicine have lasted hundreds and thousands of years. Without these precedencies, medicine would not have shaped into what it is today.

Furthermore, the other main aspect of this course that struck me was how one person could make such a profound impact on humankind as well as the complexities of life that individual had to deal with to get to that impact. To me, the most prominent example of this is with the history of anesthesia. It completely revolutionized surgery and swiftly impacted the entire world. However, I never considered how complicated the discovery and establishment of anesthesia could be. Additionally, the rise of pathology and the evolution of hand-washing as a public health measure enhanced medical outcomes exponentially. Again, these individuals and their findings were inspiring, especially when considering how hard the path was in trying to establish a new theory. Ultimately, I can assess from this course that all of these individuals made major contributions that have a direct effect on medicine today. We are in a field that is and will always be growing, but that is what makes medicine exciting and rewarding. All of the individuals had his or her own unique story, but all had perseverance and determinism to change the way of medicine for the better, even if others did not necessarily agree with them at first. In the end, I really enjoyed this course and
gained a great deal of knowledge of the history of medicine.
# Introduction to the History of Medicine - Dr. Feibel - Selective Evaluation

## Level: Washington University School of Medicine

### 1 - How would you rate this Selective course overall?

<table>
<thead>
<tr>
<th>Response Option</th>
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<td>(5)</td>
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<td>41.67%</td>
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### 2 - How well were the course learning objectives met?

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### 3 - How effective was the course master in organizing and administering the course?

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### 4 - How effective do you consider the assessment method to be?

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5 - Would you recommend this course for future students?

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</table>

- This is a fantastic selective. I learned a lot. Dr. Feibel is really knowledgeable and really good at drawing teaching points out of the text. The resources they have in the library are phenomenal. It was really great and a lot of fun and such a nice break from hard science. Highly recommend.
- I definitely learned a lot in this course and it provided knowledge I would not have obtained otherwise.
- Learning about the history of medical development was really interesting, and made me appreciate more where we stand today.

6 - Please share suggestions for improvement of the course:

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- I wish we could have read every chapter. I don't know that that's a viable "improvement", I just wish the class lasted more weeks so we could have done the rest of the book.
- In the last class, it would be advantageous to get a summary of the chapters we did not read.
- Course was great. Particularly enjoyed access to and information about rare books. I think some students did not complete all readings due to their length.