

ABSTRACTS -- Medical Student Presentations

HISTORY OF MEDICINE ROUNDS

2022

Student Showcase

Featuring the history of medicine research projects
from Schulich Medicine & Dentistry students.

Prizes to be awarded for
the best history of medicine presentation, including
The Rowntree Prize in Medical History and
The Harvey Club Prize in Medical History.

Join Us

**Monday, March 21
and Wednesday, March 23, 2022**

This is a virtual event.



MONDAY MARCH 21

Snow Wangding, Med2024, “Windows to the Soul: A Critical Comparison of Texts from Galen and Ibn Sina (Avicenna) on Cataracts and the Contribution of this Work to the Specialization of Modern Ophthalmology”

The fall of the Western Roman Empire changed the course of ophthalmology. Following this, medieval Europe lay relatively stagnant in their approach to ocular disease, whereas the Arab Empire flourished in their treatment of cataracts, glaucoma, and other ocular conditions. Using an early version of the scientific method in the 10th century AD, Avicenna details techniques and theories building on and challenging the work of the Hellenistic period. The literature surrounding Arabic ophthalmology and that of the Greco-Romans is of notable interest in demonstrating the progress and innovation of the Arabic era. This presentation will compare-and-contrast Galen's discussion of eye disease in the 5th century BC with Avicenna's work in the 10th century AD as a case study in elucidating the changing understandings and approaches to ocular disease, as well as pertinent conclusions to be drawn upon modern ophthalmology. This will be facilitated through a critical examination of translations of Galen's *On Diseases and Symptoms* and Avicenna's *Canon of Medicine*, specifically focusing on case studies and writings regarding cataracts. A robust collection of literature revisiting Arabic medical practitioners will also be evaluated. Secondary sources, such as Das's *Galen and the Arabic Reception of Plato's Timaeus* will be considered in exploring the roles of spirituality and divinity in the reductionism of medicine and the specialization of ophthalmology.

Andrew Nguyen, Med2024, “Let's Talk About It: How the Role of Psychotherapy in Psychiatric Practices Evolved as a Response to the Mental Health Crisis in the Wake of Deinstitutionalization”

During the early 1900s, institutional psychiatric care within inpatient, residential psychiatric hospitals emerged to provide ongoing medical care in regulated environments that facilitated patient care and safety (e.g., from suicidal behaviour). Rapid population growth and government funding supported rising hospitalization rates, particularly of individuals with severe mental illness, which peaked in the 1950s. However, therapeutic care became increasingly criticized as potentially iatrogenic and inhumane, largely due to facility overcrowding. Concurrently, scientific developments saw the invention of Chlorpromazine, the first antipsychotic, a promising treatment for patients with schizophrenia and psychotic disorders who would otherwise remain in long-term inpatient psychiatric care. In response, state hospitals increasingly enacted a policy of deinstitutionalization with the goal of increasing outpatient psychiatric care. While deinstitutionalization allowed patients to leave inpatient psychiatric facilities, many communities were ill-prepared to provide the psychosocial support that patients required, which resulted in homelessness, incarceration, and psychiatric readmission. In response to this growing crisis, the 1980s saw the emergence of psychotherapies based on cognitive, behavioural, and social theories, heralded for their utility as an adjunct to pharmacotherapy. While historians have analyzed the development of cognitive-behavioural therapy (CBT) practices, its efficacy in outpatient settings has yet to be fully examined. Drawing on primary sources, case studies, and the extant secondary literature, this presentation will examine the post-1980s exponential growth of CBT to treat people with severe mental illness. Specifically, it will consider the notable work of D. Kingdon, D. Turkington and P.K. Chadwick and explore the use of CBT to treat psychosis. With present-day emphasis on patient-centered approaches, this presentation demonstrates the important role of psychotherapy and community-based care in the wake of deinstitutionalization and argues that a fuller understanding is necessary to gauge the importance of sustainable psychosocial support for patient care.

Rania Belhadjhamida, Med2024, “Consent and Pain: Investigating Dr. J. Marion Sims’ Experimental Surgeries and his Complicated Legacy”

In the summer of 1845, Dr. J. Marion Sims, later dubbed the father of modern gynecology, began performing experimental surgical techniques on unanesthetized enslaved women to treat vesicovaginal fistulas. These fistulas are abnormal passages between the bladder and vagina, often caused by a difficult childbirth. The condition leaves its victims in debilitating pain and stench due to the constant dribbling of urine through the vagina. In the early 19th century, treatments ranged from cautery to suturing, but none guaranteed consistent, successful outcomes. After five years of experimenting on enslaved Anarcha, Betsey and Lucy, Sims announced a successful surgical treatment involving silver sutures and an S-shaped catheter. The ‘willingness’ of these three women in offering the use of their bodies, and assisting Sims’ during operations, remains contested. Compounding this issue of ‘consent’, Sims did not anesthetize his patients during experimentation despite the introduction of ether as a surgical anesthetic in 1846. To what extent can Sims be held accountable for failing to secure consent and for neglecting to provide pain management? How does the context, and Sims’ actions, play into his role in advancing surgical treatments for women? My presentation is informed by the work of historians Harriet A. Washington (Medical Apartheid), Deirdre Cooper Owens (Medical Bondage), and others. My primary research includes Medical Ethics, published 1803, by Thomas Percival, to understand early 19th century ethical policies; and reading On the Treatment of Vesico-Vaginal Fistula by J. Marion Sims along with his autobiography The Story of my Life, to gain personal insight on his work. This presentation explores the complicated legacy of Dr. Sims by focusing on the issues of consent and pain that arise from his vesicovaginal fistula experimentation and will highlight the intersectionality of the degrees of consent, the agency of the Black body, and issues surrounding anaesthesia administration.

Kevin Lane, Med2023, “Challenges in the Adoption of a New Medical Technology: A Case Study of Fundus Photography in the Monitoring of Eye Disease”

Today, it is common in ophthalmic practice to monitor the progression of ocular pathologies, such as glaucoma, macular degeneration, and diabetic retinopathy, using serial retinal images. Identifiable changes in the disease guide the course of management. New technological advancements are currently in process to capture images of the fundus using smartphones. These images are analyzed with artificial intelligence enabling the instantaneous monitoring and diagnosis of diseases. This opportunity relies on thousands of images being captured and has profound opportunities to impact the lives of people especially in remote areas. In 1929, images of the fundus were rare. In that year, Dr. Arthur J. Bedell (1879-1973), a leader in organized medicine and recipient of numerous awards in ophthalmology, released *Photographs of the Fundus Oculi*, the first English language fundus atlas. A pioneer in fundus photography, he recognized the value of serial photographic images of retinal diseases and assembled an extensive library of thousands of images presenting individual cases of changes in the fundus over periods of up to forty years. He used these images to assist in the study, teaching, treatment, and diagnosis of diseases of the ocular fundus. He was a determined advocate and persuaded others to follow his lead in spite of the difficulties inherent in the adoption of new technologies in clinical medicine. In this presentation, I explore the innovative aspects of Bedell’s fundus photography and the surprising resistance (ongoing for years) mounted against its adoption into ophthalmic practice. The barriers and facilitators to implementing new technology in clinical medicine were not unique to Bedell’s fundus photography, but the duration and character of resistance and challenge to fundus photography for decades highlight broader issues of individual championing of new approaches, collaborative alignment and advocacy, and the fixed entrenchment of older practices. My research draws from Bedell’s numerous publications, including *Photographs of the Fundus Oculi* (1929), medical journal editorials, and medical textbooks to examine the promotion and resistance to fundus photography during the period of the 1920s through to the 1960s. I will examine how Bedell’s leadership in academic and organized medicine enabled the eventual adoption of serial fundus imagery as a standard practice in ophthalmic care.

WEDNESDAY MARCH 23

Arjun Patel, Med2024, “Life Expectancy in the Nascent People’s Republic of China: The Role of Barefoot Doctors”

The rise in life expectancy in 20th century China is nearly unparalleled. Between 1945 and 1980, life expectancy doubled from 33 to 66. This rise occurred during the first few decades of the communist People’s Republic of China, founded in 1949. Causes of this development included nationwide immunization programs, increased maternal education, and improved access to sanitation and clean water. This presentation focuses on an additional cause: barefoot doctors in rural China. Historically, most healthcare facilities and personnel in China were limited to urban centers. This meant that rural areas, where most of China’s population lived in the mid-20th century, had very limited access to primary healthcare. Under the leadership of Mao Zedong during the Cultural Revolution, the barefoot doctors program was accelerated. In this program, villagers who had completed secondary school were selected to receive three to six months of medical education at a local hospital. After these few months, the trainees were sent back to their villages to become primary care providers. They were known as barefoot doctors as they were primarily farmers who worked barefoot in rice paddy fields and other farms. Despite the short training period, these barefoot doctors contributed to the dramatic rise in life expectancy and improvement in other health outcomes over the next few decades. This presentation will examine the role that barefoot doctors played in improving rural healthcare services and health outcomes in addition to exploring lessons that can be gleaned from this program. To answer this question, this presentation will use contemporaneous scientific publications and reports about rural healthcare, review articles, and relevant secondary literature.

Claire Vannelli, Med2025, “Searching for Precedent in Shifting Public Health Messaging: A Case Study of Tuberculosis Public Health Posters, 1910s-1960s”

Public health posters are a tool used by public health officials to communicate, persuade and arguably modify individual and community behaviour to combat disease and/or maintain a healthy society. During the COVID-19 pandemic, Canadian public health messaging embraced a “stay safe by staying home” narrative that evolved to a wartime framing of “do your part” with images of frontline workers headed to ‘battlefields’. Via television, radio, billboards and social media ads, public health messaging instructed Canadians to “wash your hands, physical distance, wear a mask” in 2020. With the availability of a COVID-19 vaccine in 2021, the messaging involved greater attention to communicating vaccine safety and efficacy, imploring the public to “trust the science” in addition to instructing (pleading) Canadians to get multiple vaccine shots. Is there precedent for this pattern of evolving public health messaging? Employing a case study approach, this presentation argues that a similar trajectory of public health communication occurred during widespread tuberculosis (TB) outbreak between 1910 and 1960 in North America and Europe. In the case of TB and public health messaging, narratives focused on individual behaviour instructions expanded to broader messaging of “safe and effective” scientific innovations. My evidence of this is drawn from public health posters in the National Library of Medicine Historical Collections and the Wellcome Collection. My research also includes reviewing articles in peer-reviewed respiratory journals, such as the European Respiratory Journal and the American Journal of Respiratory and Critical Care Medicine, that highlight contemporary scientific discoveries in TB prevention. For example, early public health posters emphasized individual efforts that could be taken to prevent disease spread, namely providing alternatives to “careless spitting, coughing and sneezing”. By the late 1940s and 1950s, the availability of antibiotics as a curative therapy for TB shifted the public health narrative significantly and radiography played a central role in identifying those individuals eligible for treatment. New public health posters emerged featuring “modern weapons” used to detect TB in a “healthy individual”. Similar to recent COVID-19 public health messaging, the narrative surrounding TB containment and treatment during the 1910s to 1960s evolved. This is largely due to the difficulties of enacting public health measures that can nimbly respond to real-time scientific understanding of a particular disease (novel or otherwise). In conclusion, this presentation will examine the way technology changed the course of a rapidly evolving, lethal disease and identify effective public health messaging.

Chris Zajner, Med2025, “Ignorance is Bliss? The Impact of Globalization and Medical Theory on the Societal Response to the 1889 Russian Flu”

The 1889 Russian (also called ‘Asiatic’) Flu epidemic can be described as an early pandemic. Prior to this period infectious diseases were limited in extent due relatively circumscribed human mobility. Yet, the development of extensive railroad

networks during this period facilitated the previously unprecedented movement of goods and people around the world. It additionally propagated the process of shrinking the barriers between the countryside and major metropolises. While the current COVID-19 pandemic has resulted in lockdown measures nearly worldwide and has prompted widespread social, economic, and cultural disruptions, the Russian Flu was not accompanied by such drastic changes. The 1889 Russian Flu pandemic has been estimated to have resulted in the death of over 1,000,000 people, to have spread to the majority of the humanly habitable globe, and to have infected between 300 and 900 million individuals. Regardless of this major toll the historical memory of this virus has been relatively forgotten and overshadowed by the 1919 Spanish Influenza. However, the Russian flu has recently been suggested to have been a coronavirus rather than influenza, and thus may serve as a closer cognate of the COVID-19 pandemic. Using accounts of the societal and medical response to the Russian Flu, as well as clinical case reports I intend to discuss the potential reasons for why this virus did not have a major effect on society at the time. My primary source will be the broad ranging clinical and statistical information in Dr. Franklin Parsons synoptic report on the epidemic. I will also assess contemporary journal articles and published materials on the societal impact of the epidemic. In sum I will attempt to elucidate why this epidemic did not have a major effect on society at the time. Was it a result of the lack of medical or epidemiological ability to functionally counteract the virus? Was there a lack of public health organization to advocate for preventative measures? Was it a result of the relative disrepute of the medical profession at the time? Discrepancies in the theoretical explanation of the spread of disease? I will argue that all these played substantive roles in the relatively muted response to this pandemic. I will also argue that the different conceptual understanding of 'infectious illnesses' at this time highlight the way scientific and societal conceptions radically alter psychological responses to disease.

Rahman Ladak, Med2025, "Neither 'rushed', nor 'new': Situating the COVID-19 mRNA vaccine within a history of mRNA-based vaccine approaches for infectious diseases"

Messenger RNA (mRNA) is a basic component found in all cells and is the instruction code used to make proteins. Within medicine and society, a greater awareness of mRNA technology arose when pharmaceutical companies Pfizer and Moderna offered their respective COVID-19 mRNA vaccines. This vaccine was both welcomed and questioned by diverse groups of people, from the lay public to healthcare workers and researchers. Expanding upon a pre-existing distrust of vaccines, vaccine-hesitant groups denounced these vaccines as 'rushed' in their development, citing mRNA technology as 'new' and consequently unsafe. However, there is a notable history of mRNA technology's use as a drug and vaccine, in the laboratory and in clinical research, which dates back decades. Expanding upon current debates surrounding the development timeline and safety of the COVID-19 mRNA vaccine, this paper presents a history of mRNA-based vaccine approaches to demonstrate that this technology is neither 'rushed' nor 'new'. The mRNA technology had been studied and used as an experimental vaccine for other infectious diseases, notably rabies and influenza, which will serve as my case studies. Examining the years from the discovery of mRNA in 1961 through to the first mRNA vaccine clinical trial in 2013, we shall delve into the scientific publications on mRNA vaccine research for rabies and influenza, notably in the key immunology journals of *Immunity*, *European Journal of Immunology*, and *Vaccine*. We shall also trace how and when this information found its way into broader medical literature, such as *JAMA*, *CMAJ*, the *NEJM* and the *Lancet*, as well as newspapers like the *New York Times* and the *Globe & Mail*. This paper will raise several broader issues such as specialist knowledge and its (in)accessibility, research 'silos' in the scientific community, science communication to lay audiences, and public skepticism of science and/or big pharmaceutical companies.

Aly Balbaa, Med2023, "Defeating Polio One Breath at a Time: The role of Anesthesiology in the War on Polio and the Birth of Intensive Care Medicine"

Dr. Bjørn Ibsen was a Danish anesthesiologist regarded by many to be the founder of intensive care medicine. The concept began from the devastating polio epidemic in Copenhagen in 1952 which left hundreds of people (mostly children) unable to breathe due to respiratory paralysis. Having been an anesthesiologist in the operating room, Dr. Ibsen drew from this experience in the OR and used positive pressure ventilation to save the life of a 12-year-old girl with paralytic polio. Enlisting the help of hundreds of medical students, he applied this method to help many more patients in what would become the world's first intensive care unit. Since then, ICUs have provided care for the world's most critically ill patients, including those currently battling with COVID-19. By taking anesthetic principles from surgery to bedside, Dr. Ibsen laid the foundation for intensive care and demonstrated the anesthesiologist to be a leader in patient safety.