



Television

Revisiting the Prussian pioneers of infectious diseases

A challenge of teaching the medical humanities is how to convey the vibrancy, flaws, and misteps of transformative moments in medical history. Despite the work of innovative historians such as the late Roy Porter to anchor the discipline more firmly from the perspective of patients and consumers of health care, medical history within the curriculum often seems iatrogenic, positivist, and lacking in a sense of identification with the complex and messy realities of medical practice. This is particularly the case for the great pioneers of Austro-Germanic medicine in the late 19th century. Marooned from this great tradition by the hegemony of the English language and the depredations of 20th century conflict, we might view these figures as stiff and two dimensional personalities, severe of countenance, with luxuriant beards, pince-nez spectacles, starched collars, and top hats; magisterial figures working in austere and disciplined Prussian settings.

Charité, a series recently released on Netflix, bursts out of these caricatures with considerable force. Set in the famous Charité hospital, founded in Berlin in 1724 by Frederick the Great, we are struck by the seemingly chaotic disorganisation of the teeming masses crowding the corridors and grounds. Into this melée arrives the female lead, a young woman without money to pay for her acute appendectomy. Taken in hand, she then decides to become a nurse. Viewers might be surprised to learn that nursing as a profession emerged not in the UK with Florence Nightingale but in Germany through a lay Lutheran order, the Diakonie. Nightingale received her initial training at their famous mother house, still existent at Kaiserswerth near Düsseldorf. Where the series really impacts is through its portrayals of the foibles, rivalries, and prejudices of key figures whose revolutionary advances in medical science underwrote the golden age of German medicine, and in particular that of infectious diseases: more than half of German Nobel laureates in medicine and physiology came from the Charité. We are also reminded of the sociopolitical influences on how medicine is practised—in this instance, through the need for Wilhelmine Germany to promote its status as a leader in the scientific world, with a particular emphasis on competing with the advances of Pasteur and colleagues in recently vanquished France. The director of the Charité is accurately depicted as pressurising the physician researchers to promote positive research findings even if premature.

The international impact of the intellectual ferment of the Charité in infectious diseases is personified by the presence of author-physician Arthur Conan Doyle. He reported on Koch's ill-starred and poorly executed trial of tuberculin as a treatment for tuberculosis. This episode is a reminder of the progress made with the ethics

and procedures for clinical trials over the past century, illustrating how Koch was lured by a complex mix of patriotic pressure and a desire for social advancement, fame, and fortune to announce positive results for a tuberculosis treatment at a major international medical meeting in Berlin in 1890. Although Koch was reluctant to present his series of animal experiments, Kaiser Wilhelm exerted pressure for a spectacular presentation at this prestigious event.

Superbly recreating the remarkable Circus Genz building where the main sessions were held, the series captures how the excitement of the medical delegates amplified the expectations for a treatment, leading to public and professional frenzy, followed by dashed hopes as tuberculin proved not only ineffective but harmful. Indeed, Koch did not reveal the nature of his therapy until after the trials had started, and shortly before the first negative official reports of tuberculin as a therapy. The conflict between prudent science and the allure of national and institutional prestige, media attention, commercial success, and popular acclaim, illustrated by the ultimate failure of Koch's tuberculin trials, still has relevance in the ongoing controversies over the influence of pharmaceutical companies over researchers and scientific journals.

At a personal level, *Charité* highlights the opiate dependency and likely bipolar disorder of Emil Behring; the love affair, divorce, and eventual remarriage of Robert Koch with a show girl; and the anti-Semitic marginalisation of Paul Ehrlich. Behring is widely considered to have behaved disreputably in cutting Ehrlich out of the recognition and commercialisation of their joint discovery of diphtheria serum; modern resonances can be found in the bitter fight between Gallo and Montagnier over the discovery of HIV. From a scientific perspective, the series also shows the challenge of scientific innovation through the widespread resistance to the concept of bacteria as agents of disease, from the dignified but traditionalist pathologist Rudolf Virchow to the doctrinaire nursing matrons.

Approachable, well constructed, and brief—six episodes in total—*Charité* allows us to not only reflect on the progress that has been made but also to ask to what extent personal frailties and resistance to change might continue to influence our contemporary medical enterprise. Future series in production—the second in the national socialist era, the third in the German Democratic Republic—are not likely to have the same focus on infectious diseases but should provide equally memorable insights into the challenge of maintaining professional standards in difficult sociopolitical climates.

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Charité

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