

Rereading *Arrowsmith* in the COVID-19 Pandemic

David J. Eisenman, MD

You should read *Arrowsmith*,” I have long told aspiring clinician-scientists I interview, as a way of getting them to think about which of the 2 career tracks drives them more. That recommendation is even more timely and broadly relevant now in the midst of the novel coronavirus disease 2019 (COVID-19) pandemic.

The 1925 novel by Nobel Laureate Sinclair Lewis tells the story of Martin Arrowsmith, an ambitious early-career physician who finds himself drawn to research but gathers no moss as he tries out roles as a clinician, scientist, and public health specialist, seeking models and mentors at each turn and finding them all unworthy of his ideals. He finally finds a home as a researcher at a well-funded private institute in New York when a novel bacteriophage treatment he has developed seems like it might be the cure for a fictional bubonic plague outbreak ravaging a Caribbean island. In the face of the deadly epidemic, his principled commitment to maintaining a control group to prove the efficacy of his therapy is barely sturdier than the sense of superiority he has carried his entire life, and the widespread death he encounters on the island forces him to choose between his ideals and identity as a scientist (studying the treatment first) and as a humanitarian and clinician (treating everyone). It takes what may be the only fate worse than dying in a pandemic to shock him into a direction, and it is left to readers to judge the merits of his choice, which in the end disappoints even Arrowsmith himself.

Although never explicitly stated, the work was clearly influenced by the influenza pandemic of 1918 and was awarded the 1926 Pulitzer Prize for Literature, which, with Arrowsmith-like idealism, Lewis turned down on principle.

The author worked closely on the novel with Paul de Kruif, a then-prominent bacteriologist and author of the wildly popular *Microbe Hunters* (a 1926 hagiography of early microbiology researchers). De Kruif’s input gives *Arrowsmith* a striking realism with a host of characters readily familiar to 21st-century practicing and academic physicians. The fictional Almus Pickerbaugh, a regional public health director, could be a Twitter influencer today, believing and persuading others that “because he was sincere, therefore his opinions must always be correct” (chapter 21.2), and focusing more on style than substance. Martin Arrowsmith’s ultimate mentor is the tyrannically honest and scientifically uncompromising Max Gottlieb, who would “rather have people die by the right therapy than be cured by the wrong” (chapter 12.1). There are non-data-driven, money-obsessed physicians like Roscoe Geake, an otolaryngologist who feels that a surgeon who would choose not to remove the tonsils of any patient was “fouly and ignorantly overlooking his future health and comfort—the physician’s future health and comfort” (chapter 8.1). There are numerous, all too familiar, compromising and shallow bureaucrats. And Martin Arrowsmith’s inability to find his place or distinguish heroes from charlatans is matched only by his lack



Poster for the film *Arrowsmith* (United Artists Pictures, 1931).
Source: Wikipedia.

of social skills and diplomacy, reminiscent of Larry David in *Curb Your Enthusiasm*.

But the delight and comfort we might take from seeing a send-up of our professional communities in great literature turns unsettling given the persisting challenging behavior and unknowns that traverse the century since the novel was written. We read of social distancing born of fear rather than concern for others, denial of the reality of infection, economic and political objections to quarantine and other top-down proclamations (chapter 31.3), and of distrust of unproven claims for the value of face masks in influenza epidemics (chapter 21.2). The book tells of early therapeutic interest in antibiotic properties of quinine derivatives, and we read about the same rush to recommend them before completion of adequate testing (chapter 38.1-2). One character offered Arrowsmith’s potential cure honorably insists, “I will not touch it till you...give it to everybody” (chapter 31.3). How many of us would or did take hydroxychloroquine recently

at the first sign of a cough, or even after testing positive, despite lack of evidence for its efficacy and the public health risk of such widespread behavior creating a national shortage for those who already depend on it?¹ It is indeed humbling to see history repeat itself without our having resolved some fundamental scientific unknowns or learned some of its most important lessons. Reading *Arrowsmith* now we are humbled, if not puzzled, that so many of the same questions remain unresolved.

The novel also tackles research ethics questions still relevant today, as the challenges Arrowsmith faced trying to maintain the scientific integrity of his clinical study during a pandemic have again become all too familiar. What is the role of compassionate use and emergency authorization when we desperately need to demonstrate what is effective and harmful for treating COVID-19?^{2,3} The sincerity both of clinicians hesitant to withhold promising though untested therapies from their patients and of those strongly advocating for the importance of controlled trials cannot be doubted. Arrowsmith exemplifies the conflict, swearing initially “that he would not yield to a compassion which in the end would make all compassion futile” or be “tempted to...give up the possible saving of millions for the immediate saving of thousands” (chapter 34.1). As he sets off to test his experimental therapy, Gottlieb exhorts him:

Be sure you do not let anything, not even your own good kind heart, spoil your experiment.... I do not make funniness about humanitarianism...; sometimes now I t’ink [sic] the vulgar and contentious human race may yet have as much grace and good taste as the cats. But if this is to be, there must be knowledge (chapter 32.3).

This conflict between learning and doing³ has always hovered quietly over clinical research, roaring back now in

the COVID-19 pandemic, and in *Arrowsmith*, the commitment to scientific integrity is easier made than honored. Perhaps we should be reassured that we are rethinking things a century later, but reading the novel now provokes at least as much frustration that we have not learned from the past.

Despite these frustrations, *Arrowsmith* provides a long view of the challenge. Medical and scientific knowledge were far less advanced in the early 20th century, and yet both the real influenza and fictional plague pandemics ended. Despite many scares and some horrific outbreaks, we have not had such a widespread and indiscriminately transmissible outbreak since 1918. That historical perspective makes it possible to retain some optimism, even in the face of conditions we have not experienced in a long time and in the face of a halting or disorganized national public health response that seems as if it could have made things worse. That alone is a good reason to re-read *Arrowsmith* now.

Author Affiliation: Department of Otorhinolaryngology–Head and Neck Surgery, University of Maryland School of Medicine, Baltimore.

Corresponding Author: David J. Eisenman, MD, Department of Otorhinolaryngology–Head and Neck Surgery, 16 S Eutaw St, Frenkil Bldg, Ste 500, Baltimore, MD 21201 (deisenman@som.umaryland.edu).

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