



## Research article

## Mandating immunity in the Ottoman Empire: A history of public health education and compulsory vaccination

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## ABSTRACT

Histories of medicine and vaccinology routinely reference the Ottoman Empire with regard to Lady Mary Wortley Montagu, her children's variolation, and the transmission of this knowledge throughout Britain and thereafter Europe. Few, however, follow the empire's ongoing relationship with vaccination after the Montagu family's departure. This article examines this aspect of Ottoman medical history by noting how Jenner's advances diffused back into the empire and then presenting and analyzing how imperial, medical, and even community leaders began to both educationally condition the population and gradually enact legislation that mandated vaccination. Owing to severe infrastructural, personnel, and financial deficits, instability, and popular fears and trepidation, the empire's aspirations to achieve universal vaccination were far from realized by the time of its early 1920s demise—especially throughout largely rural Anatolia. Ottoman institutional, educational, and legislative advances—however, collectively prepared the ground for the succeeding Turkish republic and its public health agenda. Given the republic's promotion of its efforts to modernize Turkey amid its mutual initiatives of nation-building, the empire's histories of providing this foundation are also sometimes overlooked.

## 1. Introduction

In English-language histories of medicine and public health, authors routinely mention the Ottoman Empire (1299–1922). Their inclusion typically arises from longstanding Ottoman traditions of variolation against smallpox [Bynum, 2008; McNeill, 1976; Porter, 1998; Rosen, 1993]. While the practice likely originated elsewhere in East or Southwest Asia [Aboul-Enein et al., 2012], it was in the empire that Lady Mary Wortley Montagu (1689–1762), the wife of Britain's consul, first learned of and observed its application [Dinç and Ulman, 2007]. Tempered by her own experiences with smallpox (the loss of a brother and her own facial scarring), the practice featured prominently in her posthumously published correspondence, known by its shortened title *Turkish Embassy Letters* [Montagu, 1763; Secor, 1999]. Prior to her family's return, she had embassy physician Charles Maitland (1668–1748), a Scottish surgeon who was aided by a local “old woman” [Grundy, 2000], oversee the procedure's spring 1718 administration to her young son. Afterwards, amid a 1721 smallpox outbreak in England, she again turned to Maitland to inoculate her young daughter. He did so under the observation of additional doctors from the Royal College of Physicians. Shortly thereafter, he wrote to explain the practice and disarm naysayers [Maitland,

1722; Arbuthnot, 1722]. At least one witness was a prejudiced skeptic (i.e., William Wagstaffe; 1685–1725) [Wagstaffe, 1722], but sources suggest then-President of the Royal College of Physicians (and founder of the British Museum) Hans Sloane (1660–1753) also viewed Britain's first inoculation [Weiss and Esparza, 2015] and later provided his endorsement [Sloane and Birch, 2011]. In short order, incarcerated human test subjects were inoculated, children of Britain's royal and upper classes quickly followed, and the general population did so thereafter. Detailed accounts of this global history exist, and some foreshadow later mass vaccination in the Republic of Turkey (1923–present) [Dinç and Ulman, 2007]. While mention of the Ottoman Empire typically ceases entirely in general histories after the Montagu family's return, their departure was not the end of either the empire's story or its contributions.

This article takes up the Ottoman history of vaccination (after the Montagus) to examine how it became a matter of imperial concern and what the empire did—and aspired to do—to protect its citizens. Within the wider Middle East, the Ottomans were not alone in promoting and mandating vaccination; comparable efforts were also undertaken by Muhammad Ali (1769–1849) in Egypt and Crete where even barbers were trained in the procedure [Kuhnke, 1990; Fahmy, 1998; Krokidas, 2007]. Like many public health initiatives, some of the first challenges

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were informational; overcoming popular skepticism, teaching the population about the virtues of modern science and medicine, and countering criticism. The empire did not rely entirely on this pedagogical approach; it gradually enacted education- and vaccination-focused decrees and laws. A combination of imperial and religious decrees and regulations emerged before the empire's early 1920s collapse. Consistent with traditional and evolving scientific practices, each was smallpox specific. Along with prioritizing education, initial acts established free access to inoculation, decreed its compatibility with Islam, defined initial target populations, and plainly underscored existing challenges to connect with a largely rural populace. As legislation progressed, it expanded the target population, further articulated infractions and penalties, and eventually approached a comprehensive scope. Universal coverage, however, necessitated increased demographic surveillance, data collection, and its management, in addition to bureaucratic expansion and training of personnel. The empire's push to augment its capacities to create and maintain intelligence on citizens and their educational, occupational, residential, and medical histories was not inconsistent with how contemporary Western states (and empires) expanded their medical gaze to survey entire populations [Baldwin, 1999]. While Ottoman advances towards universal vaccination collectively prepared the ground for the Turkish republic and its efforts to promote public health in concert with development, secular moralities, and nation-building [e.g., Evered and Evered 2011, 2012, 2013, 2014, 2019], they were far from realized by empire's end—especially for rural communities.

## 2. Normalizing and facilitating vaccination

Despite Ottoman Rumelia and Anatolia's venerable history of variolation for smallpox, anxieties existed within segments of the population and the practice was never comprehensive. Over the eighteenth century and into the early nineteenth, Western innovations advanced, notably those achieved with cowpox by English physician Edward Jenner (1749–1823) [Bennett, 2020]. This knowledge eventually diffused into the empire by way of distinguished physician Mustafa Behçet Efendi (1774–1834) and his “Manual for smallpox” (a translation of Jenner from Italian) [Mustafa Behçet Efendi, 1801], along with subsequent iterations of the same. Indeed, this period saw a profusion of European scientific texts translated into Ottoman Turkish [Özmen, 2016; Evered and Evered, 2020]. As European approaches made their entry, however, their foreign derivation raised concerns for some. Meanwhile, outbreaks of smallpox persisted. In just the empire's capital city Istanbul, records establish events from the early eighteenth through the early twentieth centuries. According to one source, notable epidemics struck the city in 1701, 1706, 1825, 1845, 1871, and 1877–1878, along with lesser occurrences in 1881, 1887, 1890, 1891, 1894, 1908, 1909, and 1923 [Yenen, 2014]. Prompted by one outbreak—and decades before promulgation of anything approaching a universal law, the empire prepared society with institutions and instruction devoted to medical science and public health.

The 1827 foundation of the Ottoman *Mekteb-i Tıbbiye-i Adliye-i Şahane* (Imperial School of Medicine; hereafter *MTAŞ*) under Sultan Mahmud II (1785–1839) was a major development in modern medical education and public health. In 1839 (when Mahmud II died of tuberculosis), when his imperial reforms enhanced accessibility for minority faculty and students [Trompoukis and Lascaratos, 2003], the school increased its attention to smallpox. In 1840, Sultan Abdülmeccid I (1823–1861; who also died of tuberculosis) issued a *ferman* (an Ottoman royal mandate, as distinct from laws derived through the Ottoman Council of Ministers) declaring provision of all vaccinations at no cost. In 1845, *Şeyh-ül İslam* (the leading religious authority) Mekkizade Mustafa Asım Efendi (1762–1846) issued a *fetva* (a binding religious ruling) that declared, because smallpox had devastating effects on children—and Muslim physicians attested to vaccination's soundness, that Islam endorsed the practice. By extension, the sultan's order to vaccinate the public was both legitimate and obligatory [Yakovali Ali Elmurtaza, 1910 (1326); Düzenli, 2007].

After a severe 1845 epidemic, authorities mobilized to educate the public and make the cowpox vaccine available. Early efforts focused on the empire's youngest citizens. Published in 1846 by order of Sultan Abdülmeccid I, the 48-page treatise *Menafii'l-Etfal* (“Benefits to Children”) provided clear evidence of this agenda's rationale [anon, 1846]. There is no stated author for the publication—despite erroneous attributions to an I. Pasha in several historical sources (“pasha” was an official title; not a surname), but it was likely penned by a *MTAŞ* physician [Ünver, 1948]. Printed in Ottoman Turkish and in languages of three leading ethno-linguistic and religious minorities (i.e., the Armenian, Greek, and Jewish communities), its purpose was to make information accessible and legible [anon, 1846]. Beyond its multiple languages of publication, it revealed a political shift among leaders of the empire to position themselves evermore proactively to assure public health. A major area of emphasis became prevention.

*Menafii'l-Etfal's* initial pages were a persuasive historical account of smallpox vaccination that aligned with standard narratives. It surveyed China's early examples and followed by covering Circassian slave traders of the Caucasus who presumably learned variolation from Arabs. Trafficking women of renowned beauty, the text related, slavers steadfastly administered it to safeguard their investments. The document then covered Lady Montagu's contribution to England (by way of Rumelia and Anatolia) and its gradual diffusion throughout Europe, noting instances of medical and clerical resistance, and then Jenner's eventual discoveries [anon, 1846]. Presenting Europe's measured normalization and eventual widespread acceptance of vaccination, it conveyed how trepidation gave way to celebration as people recognized the practice's efficacy in safeguarding their children and future generations. Published when the empire struggled to keep pace technologically, economically, and geopolitically with Western empires, the text's elaboration on Europe's successes enhanced Ottoman constructions of a persuasive case that was historically grounded and rooted in emerging modern medical science.

Following *Menafii'l-Etfal's* introduction, the text inferred imperial goals for universal inoculation. As noted in the treatise, a critical obstacle preventing attainment of this ambition was the fact that rural areas lacked expert doctors and were often afflicted by ill-informed would-be apothecaries. Such charlatans allegedly visited remote communities, bled the villagers, applied leaches, and so forth, but typically left their victims enfeebled by the ordeal; citizens were thus wary of new and nontraditional therapies. Acknowledging malpractice's prevalence was as important as successful accounts; the text thereby distinguished imperial practitioners, officials, and methods from past frauds [anon, 1846]. In this manner, it sought to allay widespread anxieties and instead instill popular confidence and legible knowledge about the empire's doctors, programs, and vaccination. To meet these objectives, it advised, physicians should be dispatched to all cities and towns to spend twenty days teaching local medical staff (often colloquially known as surgeons) directly from the text itself about associated procedures. Throughout these visits, it continued, visiting personnel should demonstrate vaccinating unvaccinated and unaffected children for smallpox within all area Muslim and non-Muslim communities. After twenty days of instruction, local medical staff presumably could thereafter carry on with their own copy of the treatise in their local language.

To achieve standardization, cultivate popular acceptance, and instill local knowledge, the treatise specified that each Ottoman province (or *vilayet*) should send five of their brightest youths to the *MTAŞ*, providing that each knew how to read and write Ottoman Turkish. Two would train for one and a half to two years to conduct vaccinations, apply leaches, administer circumcisions and *hajamat* (a blood circulation treatment), care for small wounds, then receive “minor surgery” certificates, and return. Two more would train for five years, immerse themselves in Ottoman Turkish texts on medicine and related sciences, eventually receive certification as doctors or surgeons, and also return. The fifth would train for ten years, thoroughly learn to read French books in medicine and science, ultimately receive advanced credentials, and return to his province [anon, 1846]. Ideally, this plan would establish an

empire-wide tiered system of medical professionals while simultaneously utilizing educated, young, and locally-born men to cultivate trust in medicine, science, and the state. In this respect, the empire was pursuing a strategy not unlike its attempts to educate the youth of minority and frontier populations in order to cultivate loyalty [Rogan, 1996; Evered, 2012]. Whether the scheme was ever carried out either in-part or in-full is not certain.

Although suspicion, mistrust, and doubt were anticipated among the rural populace, the treatise stated that Istanbul's general population largely accepted vaccination's validity, provided a physician or familiar expert (i.e., someone knowing smallpox's look, stages, prevention, and treatment). To advance vaccination there, the text advised creating or renting sites throughout the city with salaried staff and tasking each neighborhood *imam* (Islamic cleric) and *muhtar* (local leader) to send their community's parents with their infants, children, and youth to the nearest location. It stipulated that parents and children must return after eight days for inspection to confirm "success", specifying that questionable results would be followed by additional attempts until effective. For parents unable to comply (e.g., widows or poor families who could not afford transportation), physicians should be dispatched to their neighborhoods, just as they should visit orphanages. For newborns, parents could defer vaccination (with community leader notification) for up to three months, but it should be immediate if their birth coincided with an outbreak. Regarding the empire's children, the treatise made no mention of punitive measures for a negligent parent, *imam*, *muhtar*, or medical staff person. It perhaps implied social pressure (e.g., some measure of shame), however, when it stated there were no excuses for noncompliance, given that all services (even house calls) were free [anon, 1846].

Covering migration, the treatise addressed imports of human cargo into Istanbul; slaves and concubines (reflecting Ottoman distinctions between those trafficked for labor and those for sex). Each ship arriving in Istanbul, it advised, should be stopped at customs to allow a *MTAŞ* doctor to inspect those trafficked and vaccinate any lacking marks of vaccination or the disease. This duty could also be delegated to *MTAŞ* students (as their salaries were state paid) so long as they did not charge for any services. On statistics, the treatise underscored the need to collect, compile, and analyze geostatistical data to produce sound figures on disease and deaths. Referencing unnamed European authorities, it added that vaccinated and unvaccinated communities were immediately discernable; those lacking vaccination typically demonstrated ten percent population declines. Furthermore, it advised requiring provincial governors and judges to immediately notify Istanbul of any deadly contagions, pledging deployment of a *MTAŞ* physician to protect public health and eliminate the disease. The treatise's remainder (roughly half of its 48 pages) addressed cows, how to acquire and produce the vaccine, and dangers of production—emphasizing that it was work only for trained physicians [anon, 1846].

In preparing the document, the author(s) benefited from contemporary informative spectacles, as well, but steered clear of alluding to potential legal violations with one exception. Consistent with the sultan's 1840 *ferman*, *Menafii'l-Etfal* repeatedly inferred that any graft—by a physician, student or other medical staff person, an *imam* or *muhtar*, or any other party—was expressly prohibited. In the year of its publication, Sultan Abdülmecid I publicly demonstrated this educational prioritization. On his 1846 tour of Rumelia (i.e., Ottoman Southeastern Europe), his retinue included physicians who facilitated ceremonial displays that included vaccination events of the region's children [Isl-Ulman, 1999]. At least three more imperial orders (i.e., *ferman* from the sultan) followed in 1848, 1849, and 1880; the first required all children to be vaccinated, the second noted that untrained people were conducting vaccinations in the countryside and mandated that only certified professionals could perform vaccination procedures, and the third held parents responsible [Ünver, 1948].

Despite the treatise, royal and clerical mandates, publicity from the royal tour, and other instructional opportunities, until the late 1890s, the Ottomans relied almost entirely on vaccine imports from Europe. An

1871 epidemic prompted the 1872 foundation of an inspectorate in Istanbul devoted to vaccination. With another imperial *ferman* in 1892, its director worked to establish the *Telkikhane-i Şahane* ("Imperial Vaccination Center") to both improve health and lessen imports. It manufactured rather small volumes of the vaccine; in 1902, less than 28,000 vaccines were produced for all the empire's provinces [Ünver, 1948, Yildirim, 2010, Yenen, 2014]. By 1898, the center added a school to train people in vaccination and later expanded to include minor surgery, circumcision, and midwifery [Ünver, 1948; Yenen, 2014]. While later regional centers were envisioned, these never materialized. Throughout the nineteenth century, therefore, most intended vaccinations were never administered, excepting those for military inductees, imperial school students, and others working within the state.

*Menafii'l-Etfal* and notable examples of public health instruction, however, provide indication that imperial medical authorities—from the highest political official downward—sought to foster popular acceptance and voluntary compliance rather than rely on oppositional and potentially contentious mandates. While the state slowly progressed to legislate compliance—not issuing its first regulation until almost three decades after the treatise's publication, it somewhat prepared the ground and seemed to largely avoid politicizing apprehension or increasing anti-vaccination sentiments. This narrative of the sultan as caregiver—as sanctified by the *Şeyh-ül İslam*—clearly figured in wider political objectives to maintain health and peace within the empire's borders. Despite these efforts, general anxieties regarding physicians and modern medicine persisted throughout the countryside into the republic's first decades.

### 3. Regulating vaccination

Beyond each preceding *ferman*, the first law derived from the formal process of review by the Ottoman Council of Ministers with the sultan's subsequent approval was enacted in 1885. It consisted of nine articles, mandated vaccination for some, and articulated consequences for noncompliance. Consistent with past decrees, expert advice, and examples, the regulation began with the empire's children. Its first article required vaccination for all children, boys and girls, who would attend public and private schools if they could not provide vaccination certification or evidence of prior infection, and expressly prohibited their entry of school premises. The second mandated vaccination certificates to be completed on official *MTAŞ* forms with inclusion of the child's name and the attending vaccinator's signature or seal. Only appointed or known physicians could complete initial certification on papers other than the *MTAŞ* form. The third obliged vaccination of state workers, students of *medrese* (Islamic schools of higher learning), and military personnel; for the latter, military doctors could also perform and certify vaccination.

The 1885 law's fourth article specified that public and private school directors and staff who accepted students without certification would be fined according to Article 254 of the empire's criminal code. The fifth established (per *Menafii'l-Etfal*) that Istanbul's citizens' vaccinations be administered inside the *MTAŞ* or other designated location by appointed physicians, surgeons, or vaccinators. It ordered all municipalities to deploy temporary vaccinators twice or thrice per year to inoculate the unvaccinated at no cost. For rural areas, *memleket etibasi* (countryside doctors) or appointed vaccinators would be regularly supplied with vaccines. The remaining four articles further defined certificate requirements and assigned responsibility for effecting the law to public health and medical administrators, state workers, servicemen, and ultimately the Ministry of Interior. With this regulation, universal vaccination was not expressly mandated—nor were most measures ever carried out for a majority of the empire's population over its remaining decades, but its provisions clearly determined population groups identifiable by age and vocation to prioritize and protect from smallpox [Aşi Hakkında Nizamname (#65), 1937].

Nine years later, in 1894, the empire adopted a twenty-five-article regulation that provided greater specification and scope to existing

provisions. The first eight articles were entirely consistent with the 1885 act's first eight, with modified phrasing for added clarity and precision. The twenty-fifth article also effectively matched the 1885's ninth (and final) article; it assigned ultimate responsibility for implementation to the Ministry of Interior. The new law's ninth article mandated vaccination of entire families if one member was infected during outbreaks in a town, city, district, or *sanjak* (provinces). The tenth held local administrators responsible for their jurisdiction's unvaccinated children, the eleventh mandated newborns' vaccinations within their first six months, and the twelfth required all births to be reported to local administrators; the leaders, in turn, were required to notify area vaccinators.

The following eight articles—thirteen through twenty—declared that all vaccinations would be: provided at no cost; repeated until successful; inspected after administration and thereafter certified by the vaccinating official with the signature of the local *imam*, *muhtar*, or other authority; certified further by local boards that issued a *mazbata* (document of approval) for verification and sent the original to the Ministry of Interior; recorded by the ministry in its data compilation for the empire's statistical yearbooks; annually recorded by local boards for submission to the ministry with individual recipients' data, along with names of the sick, unsuccessfully vaccinated, and unvaccinated; and, repeated every five years. The twenty-first article established salaries, hourly wages, and traveling costs for vaccinators and required *sanjak* and municipality officials to pay these expenses. The following two articles dictated monetary and other penalties for: parents who failed to have their child inoculated when vaccinators visited their communities (typically fines of 150 *kuruş*) [Mercan, 2017]; and, anyone who attempted vaccination with the infected discharge of an afflicted person. The latter provision set a 200-to-1,000 *kuruş* penalty; the amount determined in accord with the severity of sustained injuries. The twenty-fourth article required all state officials to assist physicians and vaccinators complete their duties, and the final article—as noted—assigned overall responsibility to the Ministry of Interior [Aşi Nizamnamesi (#376), 1939].

#### 4. Expanding the empire's reach

Despite being in the grip of persistent domestic and geopolitical turmoil—and its failure to effect the 1885 and 1894 laws' provisions, the empire responded to continuing outbreaks [Yildirim, 2010] by enacting further public health regulations into the twentieth century's initial decades. The first emerged in 1903 and the second in 1915. As with the 1894 law, each further specified and expanded on preceding ones. In both, new provisions noticeably extended the empire's influence to encompass a wider demographic; employed workers, migrant and nomadic populations, and more local community residents. If implemented, the laws would each conspicuously augment the scope and depth of information collected by the empire regarding its citizens.

The 1903 regulation moved beyond prior laws' focus on children, military servicemen, state employees, and students to include all workers employed by factories, businesses (e.g., stores or hotels), and other concerns, whether men or women, or paid daily or monthly. Its first article stipulated all workers to be vaccinated for smallpox, unless they could prove prior vaccination or infection. Expanding to include migrants, the second required vaccination of all domestic and international migrants. This provision was especially important then as the empire experienced increasing waves of internal and international migration within and from beyond its borders due to socio-economic, political, and conflict-induced displacements [Kasaba, 2009; Fratantuono, 2016]. The third enhanced the first, holding accountable owners, administrators, and managers of industrial and commercial sites (e.g., businesses and hotels)—and educational directors and principals—for entries of unvaccinated people into their factories, businesses, and schools. If guilty of such dereliction, the accused would be fined accordingly.

In subsequent articles, the empire's grasp notably extended to encompass all communities, their religious and civic leaders, and residents. The thirteenth article required each *imam* or *muhtar* for the capital,

other cities, towns, villages, and districts to complete and send a birth notification for each newborn within one month of delivery. The next specified that each notice received by the Ministry of Interior's general administrative office for birth records would be recorded, then sending imperial birth certificates back to community leaders to redistribute to infants' families. This birth (and health) document thus served as one of citizenship (an *ilmuhaber*), as well. The law indicated that all services would be conducted at no cost. Along with these duties, local leaders were required to certify each citizen's vaccination status whenever they sought state employment. The *imam* or *muhtar* would provide an affidavit that they verified the person's vaccination record and include the vaccination's date and registration number for corroboration. To ensure compliance, the subsequent article specified fines for any *imam* or *muhtar* who neglected their duties [Aşi Nizamnamesi (#282), 1941].

Amid the empire's entry into World War I (1914–1918) and ongoing internal conflicts with minority communities, in 1915, it issued another smallpox-related regulation; it prohibited any citizen to willfully or otherwise evade inoculation. The law's first article declared that “every person in the Ottoman Empire must be vaccinated three times by the age of nineteen”. The next specified vaccination within a newborn's first six months and again at ages seven and nineteen. It also superseded 1903's migration provisions; it stipulated vaccination of each immigrant at their first point of entry rather than at their eventual location of residency. Regarding internal migration, the law mandated pastoral nomadic tribe members' vaccination when subjected to sedentarization at their eventual sites of settlement. Reflecting fears that arose decades earlier regarding variolation making recipients vulnerable to other diseases that beset the empire (e.g., syphilis, cholera, tuberculosis, and others), the law required subsequent vaccinations to be conducted only in a “scientific manner” utilizing “vaccine tubes” for administration, adding that “vaccination from person-to-person is absolutely prohibited”. While the 1915 law and its anticipated approaches for implementation clearly had gaps that left out segments of the population, it was an effort towards accounting for most “every person in the Ottoman Empire” [Telkih-i Cüderî Nizamnamesi (#364), 1917/1918 (1336)]. As noted, however, the empire never realized its goals as it required impossible resources; bureaucratic, productive, personnel, and financial. Moreover, under the ruling Young Turks (1908–1918) who effectively overthrew the sultanate, there were purges of minority communities that otherwise provided significant numbers of physicians and other trained personnel. While the eventual republic inherited public health achievements, institutions, and personnel that remained, it was also heavily burdened by the weight of the empire's many unfinished projects, losses of minority physicians who were to Ottoman medicine, squandered opportunities, and wartime debts.

#### 5. Conclusions

Laws and regulations serve vital functions for programs of mass vaccination. Viewed from the state's vantage, they help assure standardization of vaccines and protocols, they mandate provision of services by state institutions, employees, and medical professionals, and they enhance public safety. In terms of the public itself, legislation can compel a citizenry's widespread compliance, and when coupled with public health education, it can augment a population's awareness and level of self-care. The modes of education can even be quite varied; pamphlets, books, posters, leaflets, medical museums, plays, films, and even genres of literature, such as advice works [Demirci, 2008]. Such efforts, however, may necessitate immense expenditures, even for states with robust resources, and are thus oftentimes integral to wider initiatives. Global histories of medicine routinely reveal public health policies' and programs' alignments and intersections with other political objectives, such as economic development, modernization, nation-building, and nationalism [Baldwin, 1999]. Most of these agendas, however, are not only costly but also thoroughly rooted in the pasts of those empires that preceded today's nation-states. Predating even the advent of germ theory



and the myriad imperial public health projects that it enabled, histories of vaccination provide an earlier and unique perspective on health and governance.

In the case of the late Ottoman Empire, its leaders' desires to achieve universal vaccination were suppressed by severe infrastructural, personnel, and financial shortfalls [Erođlu and Dinç, 2014], instability, and—despite an aligned educational agenda—popular fears and trepidation. These and other factors linked with vaccination, public health, and Anatolia's population reverberated into the rise of the empire's successor state; the Turkish republic. This was particularly evident during the nascent republic's first parliamentary sessions. In debates over a proposed law to prohibit alcohol production, marketing, and consumption that received support on both moral and medical grounds [Evered and Evered, 2016], MPs invoked discursive references to Ottoman vaccination campaigns. Defending the bill that he submitted, MP Ali Şükrü Bey (1884–1923) likened his effort to the imperial vaccine initiatives; even though many suspicious and fearful villagers “fled to the mountains like goats”, he declared, Ottoman vaccination efforts saved “thousands of children” and was thus—like prohibition—a worthwhile effort [TBMM Zabıt Ceridesi, 1920]. As in the late Ottoman context, be it for smallpox or other maladies, even this partial progress in vaccination—coupled with legislation—is still vital today.

## Declarations

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The authors declare no conflict of interest.

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