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## To Inoculate or Not to Inoculate?: The Debate and the Smallpox Epidemic of Boston in 1721

### Abstract

This article discusses the controversy over inoculating people with smallpox, particularly the way religious leaders formed both sides of the debate.

## To Inoculate or Not to Inoculate?: The Debate and the Smallpox Epidemic of Boston in 1721

*Shawn Buhr*

**E**ighteenth-century America was very susceptible to epidemic outbreaks of disease due to the provincial character, small population, and limited resources of most colonial towns. These characteristics forced the late development of medical establishments. America's colonial towns were more filthy than many of the Old World cities, increasing the probability of rapidly spreading the disease. Expanding immigration and the development of trading relations with Indians, with Africa, and between colonies helped these contagious foreign diseases to spread. The most feared and deadliest of these epidemics was smallpox, which could be transmitted from person to person by direct contact. This violent, sudden, and relatively fatal disease ravaged the body, leaving revolting symptoms and scars. Little could be done for outbreaks of smallpox, aside from the apothecary's elixirs such as tar-water, until the widespread availability of inoculation developed in 1720. A huge controversy resulted in Boston due to the onset of this new medical advance. At the forefront of this debate were three men: Rev. Cotton Mather, Zabdiel Boylston, and Dr. William Douglass, one of the few men in Boston who held a medical degree in 1721.<sup>1</sup> Also heavily involved in this ideological controversy were Increase Mather and Rev. John Williams.

Reverend Cotton Mather was the spokesman for the group of American clerical practitioners. Due to the scarcity of doctors, individuals not trained in medicine would often dispense medical care and advice. Most of these practitioners were trained by apprenticeship. These clergymen added medical services to their pastoral duties. Their education and values were superior to many of their medical counterparts. In addition, many of these clerical practitioners had considerably more medical knowledge and skills than other practitioners.

Mather and numerous other practitioners took an interest in public welfare. Mather was the most systematic writer on medical themes of his generation. He often attempted to write concerning medical matters in a religious context, and some writings reflected his clergyman's outlook. Disease was ultimately caused by sin and was to be cured by prayer and forgiveness, but there were credible religious reasons for seeking scientific aid.<sup>2</sup> He called smallpox "one of these new scourges. . . which the holy and righteous God has inflicted on a single world."<sup>3</sup> His moral outlook reflected that he had a disinclination to help sinners, but he still was sympathetic to their plight and sought to help them. Mather

borrowed philosophies from many different sources, but used them to reach his own conclusions.

The clash between the ideologies of Mather and Douglass represented the conflict between the theocratic ideas of the New England clergy and the emerging professionalism in the medical profession. Mather believed that the clergy had the right to control the life of the community. Douglass believed that it was not the place of the clergy to interfere in professional matters. In the midst of this debate, he frequently dismissed Mather as a credulous layman. Douglass based his oppositions upon the fact that too little was known about variolation (inoculation with smallpox) for it to be utilized on a widespread basis. The technique of variolation utilized involved inoculating a healthy individual with pus from an infected individual to induce a mild case of smallpox in order to develop immunity.<sup>4</sup> Douglass believed that before the public was exposed to this technique, qualified medical professionals should subject it to increased experimentation. In an era of purging, bleeding, dosing, blistering, and other measures frequently utilized by medical practitioners, Douglass was reluctant to accept inoculation as a miracle discovery.<sup>5</sup>

Boston was similar to most other colonial towns during the early eighteenth century. The contagious diseases of the period would arise in a cyclical fashion. However, because of effective quarantine laws, most of New England suffered only occasional epidemics. When smallpox proliferated, a high number of cases was guaranteed because of the low percentage of people who had not previously acquired or developed immunity. Mather was curious to discover how immunity to smallpox was gained. After his Negro slave, *Onesimus*, told him in 1715 "that he had undergone an Operation, which had given him something of ye Small-Pox, and would forever preserve him from it," his interest in inoculation was piqued.<sup>6</sup> The fact that he had lost his wife and several children to the disease strengthened his resolve to search for a way to lessen the epidemic proportions associated with the disease. Mather confirmed *Onesimus*' account by speaking with other West African slaves in Boston. Mather discovered that "a considerable Number of these Africans" agreed on the same story.<sup>7</sup> When he read an account of a similar practice by Timoni and Pylarini in Turkey in *Philosophical Transactions of the Royal Society*, Mather became a believer in the practice.<sup>8</sup> He decided to urge the use of inoculations when a smallpox epidemic broke out again in Boston. In 1721, Mather was provided with the opportunity to spread his belief in the effectiveness of inoculation.

As Boston was facing this serious outbreak, another clergyman, Benjamin Colman, collected stories similar to *Onesimus*' from other slaves, discovering "how to help against the poison of the Small-Pox."<sup>9</sup> After Colman published his pamphlet entitled "Some observations on the new method of receiving the small-pox by ingrafting or inoculating," Douglass denounced Colman's

pamphlet as a "little vain book."<sup>10</sup> After discovering the non-European roots of this policy, the anonymous author of *A Letter from One in the Country* called for inoculation to be banished to the "Turks and Pagans."<sup>11</sup> When he was criticized for adopting a policy used by African slaves, Colman responded by saying that whites must "be willing to learn from the poorest slave in town."<sup>12</sup> Douglass carried the denunciation of this non-white "heathen" practice a step further. In the August 7-14, 1721 issue of the *New England Courant*, Douglass, showing disdain for the procedure, satirically suggested using inoculation as a weapon against the Indians. For every native killed by inoculation he would pay 5 pounds, and he would pay 10 pounds for any who survived and spread the disease.<sup>13</sup> This comment was hauntingly similar to a remark made by Cotton Mather in 1702. Mather reported that, as a result of epidemics, "the woods were almost cleared of these pernicious creatures [Indians], to make room for better growth."<sup>14</sup>

These two quotes were indicative of a problem I encountered in researching this paper. I would often see Douglass described as arrogant or conceited, but this was the only quote where I could detect any criticism or denunciation of Mather. It seems that many of the authors of medical histories want to preserve a good wholesome image of Mather because he did so much for preventative medicine. Despite the fact that he held slaves and made such a racist comment, negative aspects of his personality or other improprieties seem to be suppressed. It is difficult to determine if there is any excluded information that reflects positively on Douglass. Instinctively, I believe that Mather is not as good as he is described nor is Douglass as bad as he is described in these medical histories.

In April 1721, Boston was attacked for the sixth time by smallpox. In Cotton Mather's letter dated June 6, he appealed to local physicians using abstracts from *Transactions* and "begged them" to use inoculation.<sup>15</sup> All but one of these men refused Mather's public pleas, condemning inoculations as dangerous. Mather persuaded Zabdiel Boylston to adopt inoculation. With the advice of Mather, Boylston inoculated about 240 people over 5 months with the actual smallpox virus.<sup>16</sup> A public outcry by the selectmen of Boston resulted in the temporary halt of Boylston's inoculation techniques. Backed by the Mathers, Increase and Cotton, and the four other "inoculation ministers"—Benjamin Colman, Thomas Prince, John Webb, and William Cooper—Boylston disregarded the criticisms and continued inoculating. The result of this procedure was a newspaper and pamphlet controversy over the effectiveness of inoculation that persisted until the end of the epidemic. The articles from both sides condemned their opponents and included name-calling and other virulent comments.

Coming out in support of the practice of inoculation proved to be a dangerous undertaking. Boylston was assaulted in the streets, his house was

attacked, and he was “execrated as a murderer.”<sup>17</sup> Many townspeople felt that if any of his inoculated patients died, Boylston should receive capital punishment. Thomas Hutchinson, echoing this sentiment, stated that “many sober, pious people were struck with horror, and were of the opinion that if any of his patients should die, he ought to be treated as murderer,” following Boylston’s inoculation of his son and two Negro slaves.<sup>18</sup> He was repeatedly reprimanded by the selectmen of Boston. Additionally, many of the clergymen who supported inoculation faced bodily harm, insults in the streets, or damage to their homes.

Dr. Douglass filled the newspapers with sarcastic comments and verbally abused clergymen, physicians, and anyone else who encouraged inoculation. Douglass stated that all of the inoculators, with the exception of “Dr. C. M.,” had insufficient reason for undertaking this practice. He attributed to Cotton Mather “a pious and charitable design of doing good,” but held only contempt for Boylston. Douglass attacked Boylston vehemently, calling him an ignorant practitioner who lacked a degree and would be better suited as “a cutter of stone.” He questioned how Boylston could “infect a family in town in the morning, and pray to God in the evening that the distemper may not spread.”<sup>19</sup> Douglass also accused Boylston of “propagating the Infection” and called upon Mather and the other advocates of variolation to put their faith in “the *all-wise Providence* of God Almighty.”<sup>20</sup> He also quoted a statement made by Cotton Mather in one of his articles, then followed it with the phrase, “O piety.”<sup>21</sup> Douglass closed his paper with the smug comment, “If I have been too rough with any person’s character, . . . I heartily ask his pardon.” In these comments, Douglass exhibits the penchant for European-trained physicians to be scornful and critical of experience-trained practitioners or clerical practitioners. These comments show his obstinate and opinionated nature and his prejudices. It is also ironic that Douglass often used invectives that included references to God, while his own ideas of religion were loose and unsettled.

The main objection of Douglass and the remaining medical practitioners was that the use of inoculation might possibly spread the disease. He claimed Boylston was engaged in the practice of “poisoning and spreading infection,” which he asserted was a felony according to the penal laws of England. He believed that more people with the disease in any form would cause an increase in the number of cases. His argument did have a sound basis, since the inoculated did undergo a period of contagion. Some clergymen were also critical of the practice of inoculation, calling it “an unjustifiable act, an affliction of evil, and a distrust of God’s overruling care.”<sup>22</sup> Others were concerned that it would promote “vice and immorality.”

Increase Mather, Cotton Mather’s father, immediately defended the procedure. He called it a “wonderful providence of God” that all who are inoculated can have their lives spared, and judged inoculation not only lawful

but a duty as well.<sup>23</sup> Mather also stated that opposition to this practice would be a violation of the Sixth Commandment because many lives would be lost. He argues that inoculation is "the most successful and allowable method of preventing death" and is safe and innocent.<sup>24</sup> Mather then refutes Douglass' pamphlet, claiming he uses "impudent and malicious lies. . . to abuse the faithful messengers of God, which is far from a sign of piety."<sup>25</sup> Increase Mather closes his pamphlet with a rebuke for Douglass to check his behavior. He stated that "if Douglass should disobey the ministers in Scotland [Douglass' homeland] as he has done by those in New England, they would put him into the pillory."<sup>26</sup>

The leading clergyman who voiced opposition to inoculation was the Rev. John Williams. In his reply to Increase Mather, he countered that inoculation against smallpox is "not contained in the Rules of Natural Physick."<sup>27</sup> He makes frequent references to *D——s*, a thinly-veiled attempt at disguising the identity of Douglass, and repeatedly quotes scripture to defend his argument. He claims that Increase Mather's use of arguments "from the history of places where it was practiced" is "no safe way to argue."<sup>28</sup> He accuses him of not being a proper minister because his argument contains no scripture. Williams also calls Mather dishonorable because he draws a stronger conclusion than his premises will allow. He believes that only foolish and very wicked people will satisfy their wicked desires through inoculation, and accuses them of "the breach of the Moral and the evangelical law of God."<sup>29</sup>

When Cotton Mather was confronted on the virtues of inoculation, he proclaimed himself a pure empiricist on the smallpox issue. He showed his feelings toward medical logic, stating "Of what Significancy, are most of our Speculations? EXPERIENCE! EXPERIENCE! 'tis to THEE that the Matter must be referr'd after all."<sup>30</sup> To this end, he says there has been "happy success on hundreds of persons" over the past 8 years. He also believed that they should take advantage when the "Glorious God [teaches] us a new and right method of treating the small-pox ."<sup>31</sup> Of the number that were inoculated by Boylston, Mather states that all of them "[rejoice] in having undergone the operation."<sup>32</sup> They all confessed to Mather that they would rather endure the inoculation procedure once every year than become infected with the smallpox just once in their lives. Mather showed his disappointment with the vocal opposition to the procedure, saying that it was carried out "with a folly, and falsehood, and malice hardly ever known to be paralleld [sic] on any occasion," while in the meantime a number of lives were lost.<sup>33</sup>

The practice was quickly endorsed by most of Boston's clergymen. A group of clergymen came to the defense of Boylston and attacked Douglass' feelings of superiority due to his medical education. They showed their displeasure at the intemperate comments made by Douglass, declaring "tho' he [Boylston] has not had the honour and advantages of an Academical Education, and congruently not the Letters of some Physicians in the Town,

yet he ought by no means to be called Illiterate, ignorant, etc. Would the Town bear that Dr. Cutter or Dr. Davis should be so treated?"<sup>34</sup> Although there were exceptions, most of the clergymen supported inoculation and deserve some credit for widening the scope of its use. They viewed the inoculation procedure as a way to save lives, and they did not see any theological contradictions with encouraging its use.

The inoculation controversy continued until the effectiveness of the procedure was illustrated through experience and statistics presented by Boylston and Mather. They demonstrated that smallpox case mortality dropped from about 15 % to 1 or 2 % with the inoculation treatment.<sup>35</sup> This first experiment with active immunization fueled the use of the measure in Boston and throughout the colonies. Douglass and his colleagues did succeed in influencing the construction of segregated hospitals where inoculations could be administered and patients could be isolated until their contagion halted. This epidemic of smallpox would be the largest in the city's history due to the advances in inoculation. In 1721, prior to the outbreak, the town contained 10,600 people. During the course of the epidemic, approximately 6,000 individuals contracted the disease, and about 900 died, over 8 % of the city's population.<sup>36</sup> The death toll of the epidemic is indicative of the importance of discovering a viable means of prevention of the smallpox outbreak in colonial American towns. Experience proved to be the best teacher, and the method of inoculation contentiously debated during the epidemic soon went into widespread use throughout the colonies.

After conducting the research and writing this paper, within the context of Jenkins' *Re-Thinking History*, I have gained a newfound understanding of the difficulty of getting at the historical truth. The most striking aspect of Jenkins' argument was that there is no one true historical reading of events. In examining secondary sources, I noticed a distinct difference in the tone of the writing and in the conclusions the authors were drawing from the same events. I attributed these differences to the agendas of the author. I also understood the fallacy of a modern writer accurately reporting the facts in a current period. Since I have the advantage of writing with hindsight, viewing the situation with more knowledge, I would find it difficult for anyone not to advocate inoculation. With this additional knowledge, it is difficult for me not to have a personal bias against those who voiced opposition to inoculation.

### Endnotes

<sup>1</sup>Lester King, *The Medical World of the Eighteenth Century* (Chicago: University of Chicago Press, 1958), 40.

<sup>2</sup>R. H. Shyrock, *Medicine and Society in America: 1639-1860* (New York: New York University Press, 1960), 17.



- <sup>3</sup>Cotton Mather, *The Angel of Bethesda* (Barre, MD: American Antiquarian Society, 1972), 43.
- <sup>4</sup>Peter Wood, "The Impact of Smallpox on the Native Population of the 18<sup>th</sup> Century South." Ed. Robert I. Goler (New York: Frances Tavern Museum, n. d.), 23.
- <sup>5</sup>James Cassedy, *Medicine in America: A Short History* (Baltimore: Johns Hopkins University Press, 1991), 8.
- <sup>6</sup>Wood, *Early American Medicine*, 24.
- <sup>7</sup>Mather, *Angel*, 107.
- <sup>8</sup>James Thacher, *The American Medical Biography of 1828* (New York: Milford House, 1967), 21.
- <sup>9</sup>Benjamin Colman. *Some observations on the new method of receiving the small-pox by ingrafting or inoculating* (Boston: n.p., 1721), Evans Collection No. 2211, 3.
- <sup>10</sup>William Douglass. *A dissertation concerning inoculation of the smallpox...* (Boston: n.p., 1730), Evans Collection No. 2332, 18.
- <sup>11</sup>Wood, *Early American Medicine*, 25.
- <sup>12</sup>*Ibid.*
- <sup>13</sup>*Ibid.*
- <sup>14</sup>R. H. Shyrock, *Medicine in America: Historical Essays* (Baltimore: Johns Hopkins Press), 2.
- <sup>15</sup>*Ibid.*
- <sup>16</sup>Geoffrey Marks and William Beatty, *The Story of Medicine in America* (New York: Geoffrey Marks and William Beatty, 1973), 219.
- <sup>17</sup>Shyrock, *Medicine in America*, 7.
- <sup>18</sup>Francis Packard, *History of Medicine in the United States* (New York: Hafner Press, 1963), 43.
- <sup>19</sup>Marks and Beatty, *Story of Medicine*, 222.
- <sup>20</sup>Douglass, *A dissertation*, 12.
- <sup>21</sup>*Ibid.*, 20.
- <sup>22</sup>John Duffy, *The Healers: The Rise of the Medical Establishment* (New York: John Duffy, 1976), 36.
- <sup>23</sup>Increase Mather. *Several reasons proving that inoculating or transplanting the smallpox, is a lawful practise...* (Boston: n.p., 1721), Evans Collection No. 2258, 7.
- <sup>24</sup>*Ibid.*, 14.
- <sup>25</sup>*Ibid.*, 18.
- <sup>26</sup>*Ibid.*, 18.
- <sup>27</sup>John Williams. *Several arguments, proving, that inoculating the smallpox is not contained in the law of physick, either natural or divine, and therefore unlawful* (Boston: n.p., 1721), Evans Collection No. 2307, 1.
- <sup>28</sup>*Ibid.*, 14.
- <sup>29</sup>*Ibid.*, 3.
- <sup>30</sup>Shyrock, *Medicine and Society*, 57.
- <sup>31</sup>Mather, *Angel*, 116.
- <sup>32</sup>*Ibid.*, 113.
- <sup>33</sup>*Ibid.*, 116.
- <sup>34</sup>Shyrock, *Medicine in Society*, 9.
- <sup>35</sup>Shyrock, *Medicine in America*, 7.
- <sup>36</sup>Duffy, *Healers*, 13.