A Cloud of Controversy: George Washington and Smallpox Inoculation During the American Revolution

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Abstract

During the Revolutionary War, smallpox wreaked havoc on the American Army in their fight for Independence against the British troops. Acknowledging this, George Washington made the bold decision to have the troops undergo mass smallpox inoculations. This article will explore George Washington's highly controversial order to inoculate his soldiers at a pivotal point during the American Revolution. Drawing from multiple primary sources including soldier's accounts of the horrors of smallpox, John Adam's letters, and newspapers around the 1770's, this paper will reflect on the deadly nature of the smallpox disease, the risk and reward factors in undergoing the smallpox inoculation, and the overall effects on the war effort.

One of the biggest enemies facing George Washington's Continental Army was smallpox. This deadly disease wreaked havoc on the Continental Army in the fight for independence against the British. As John Adams said in a letter to his wife, Abigail Adams, "the Prevalence of small Pox among our Troops … completed our Destruction."[1] John Adams, a confidant to General Washington, understood that this deadly disease was hurting the Continental Army more than the British, Canadians, and Indians.[2] Acknowledging this, Washington made the bold decision to inoculate his troops against smallpox. Washington's highly controversial order to inoculate his soldiers came at a pivotal point during the American Revolution. Drawing from multiple primary sources including soldiers' accounts of the horrors of smallpox, John Adams' letters, and George Washington's diary, this paper will explore the deadly nature of the smallpox disease, the controversy behind the inoculation procedure, and finally General Washington's decision to inoculate his soldiers, which altered the course of the American Revolution.

Also called 'Variola,' smallpox was an invisible killer responsible for the agonizing deaths of tens of thousands of people in the British American Colonies.[3] Smallpox epidemics had been recorded among Native Americans since the 1500s in North America.[4] This viral disease easily spread to young children and isolated populations with little genetic diversity. After experiencing a series of flu-like symptoms like nausea, lack of appetite, and vomiting, pustules emerged on the victim's body, concentrating on the areas of the body where they would be the most painful.[5] The face, soles of the feet, groin, armpit, and back were the highest concentrated areas where the highly contagious pustules would gather; it hurt to walk, sit, and even lie down. Of those suffering with the disease, there were recorded cases of some being trapped in bed by the adhesive discharge of the pustules.[6] This was the reality for those suffering with this lethal disease. After a period of approximately 30 days, the contagious scabs would fall off and the pock-marked survivor would be immune to the deadly disease for life.

Americans were no strangers to the deadly virus. Though one of many epidemics in early America, the Boston smallpox outbreak of 1721 was one of the most important with respect to medical progress. Cotton Mather, a Harvard-educated minister and man of science, led the medical research fighting smallpox at the time. Mather feared that smallpox would break out in Boston,

affecting the lives of his children and church congregation. Though the biological and cellular sciences were up-and-coming fields, Mather, infatuated with preventing the deadly disease, read countless books in his personal library about medicine and science . He made progress after speaking to his slave, Onesimus, in 1716. Mather questioned Onesimus about whether or not he had ever contracted smallpox. Onesimus responded with both yes and no. Onesimus's ambivalent response confused Mather. Onesimus then proceeded to tell his master that he had undergone the inoculation process in Africa. Mather explained that "Onesimus had undergone an operation which had given him something of the smallpox and would forever preserve him from it."[7] While looking at medical research, Mather stumbled across an article verifying Onesimus's story. It was from a man named Dr. Emanuel Timonius in Turkey, describing the inoculation process there. In addition, through Mather's connections to the Royal Society of Medicine in England, he learned that another doctor, Dr. Clopton Havers, learned about a similar inoculation practice in China a decade earlier.[8] Mather had presented the inoculation process to various doctors in Boston but to no avail. After an extended period of time and with a significant amount of convincing, Mather got one man, Dr. Zabdiel Boylston, to take an interest in the project and agree to try the procedure.

This was the origin of the inoculation procedure on the North American continent, and it was controversial from the beginning. Citizens and medical personnel of Boston were confused why Dr. Boylston would give a strain of smallpox to previously unaffected Bostonians. The ignorant doctors, believing Dr. Boylston was spreading the disease needlessly, gossiped to the townsfolk that the inoculation process was deadly to those that experienced it, and that it should be banned as a medical procedure. Though this hindered Dr. Boylston's progress, it set the stage for the controversy behind the inoculation process on a mass scale during the American Revolution some four decades later.

In 1751, years before the "shots heard around the world" were fired, George Washington visited Barbados as a young boy with his older half-brother Lawrence.[9] It was there that he contracted smallpox and also where his diary entries stopped for about a month.[10] This was Washington's first recorded encounter with smallpox. He contracted smallpox without undergoing the inoculation procedure. In fact, Washington did not have knowledge of the medical procedure until around 1770 when he was a grown man.[11] This was in part due to the controversy that arose when Dr. Boylston was initiating clinical inoculation procedures in 1721. Inoculation had been practiced in other places like China, Turkey, and Africa for decades.[12] The process was rare in the colonies because of the skepticism and desire to stop the spread of the disease. Not only was the procedure controversial, but only the rich could afford it. This was due to the bedridden state of the inoculated person for about a month after the procedure took place, which made them unable to work. In a letter to a friend, Washington wrote regarding smallpox inoculation: "I favored the inoculation, thinking that Jacky (Martha Washington's son from a previous marriage) should be protected against the smallpox whether he was send abroad or not. Mrs. Washington agreed that the benefits were very desirable but feared exposing her son to the inoculating process, which brought on a fatal case of the disease in 1 of every 50 to 60 inoculations."[13] This quote illustrates that even though the inoculation process was not without risks, the benefits ultimately outweighed the hazards. This is how Washington viewed it, as his step-son Jacky underwent the inoculation process in 1771 in Baltimore, Maryland.[14] Seeing the success, Martha Washington was inoculated several years later in May of 1776 in Philadelphia.[15] Mrs. Washington went on to live until 1802, outliving her husband by 3 years.

Washington's exposure to smallpox early in his life made him well-equipped to understand its deadly effects when the disease spread among his troops early in the War for Independence. Smallpox was a viral disease, spreading by contact with affected people and contaminated items. The Continental Army made perfect hosts for the disease. The soldiers were frequently malnourished, which made it easy for the disease to spread in the immune system. In addition, they were in close contact for variola to spread, whether in the barracks, campfire areas, the battlefield, and even just passing through contaminated cities. After all, smallpox only needs bodies to survive and the Continental Army had plenty.[16]

Dr. Stringer, an army surgeon, worked closely with Washington to determine what to do with the ailing troops. Dr. Stringer commented, "Buried two today. No preaching or praying as usual. The smallpox rather abates in the regiments. A number [of troops] are employed the other side almost the whole day to dig graves and bury the dead...."[17] The Continental forces were suffering and General Washington had to decide whether or not to inoculate his soldiers. The British soldiers had the advantage over Washington's troops. Smallpox had already appeared in the densely packed cities of Europe, and most solders were already immune to the deadly disease from having it as children. The few British soldiers that had not encountered it were then inoculated in the American colonies. This is further explained in General Howe's journal on November 18, 1775, when he asked his officers to poll the ranks to determine how many of the troops had had the disease previously. They were then "to have such of their Men inoculated as have not had it & that as soon as possible."[18]

Now that a large population of the Royal British Army was immune to the disease, they could focus more on the war effort without fear of smallpox. General Washington, who also feared that the disease would spread to his soldiers, gave the order to quarantine his sick troops. This then evolved to General Washington prohibiting the army from taking in any refugees altogether, smallpox ridden or not, for fear of contamination. The Continental Congress shared Washington's fear of the spread of smallpox and issued a proclamation in 1776 banning the army doctors to perform inoculation procedure on the Continental Army for fear of spreading the disease more.[19]

The soldiers' fear of smallpox was especially exemplified after the battles of Lexington and Concord during the siege of Boston in 1776-1777. The Continental forces had an estimated 15,000 poorly-equipped colonial troops surrounding British-held Boston, Massachusetts when General George Washington arrived in the summer of 1775.[20] It was here that General Washington battled two enemies: the highly trained British forces of about 6,500 men led by General Thomas Gage and the lethal smallpox.[21] Though exact statistical data is not available about the number of deaths caused by smallpox during the American Revolution, disease caused more deaths than wounds inflicted during the war. Historian Joseph Ellis in *His Excellency* notes that "Historians have long known that more than two-thirds of the American casualties in the war were the result of disease. But only recently… they have recognized that the American Revolution occurred within a virulent smallpox epidemic of continental scope that claimed about 100,000 lives."[22] This was also reflected by John Adams who noted "that for every soldier killed in battle, disease killed ten."[23]

General Washington had a hard choice to make. If he fought in Boston where there were recorded cases of smallpox in recent weeks, he would go against his own "quarantine and avoidance" plan. Yet, on the other hand, the longer he waited to engage the British in Boston, the longer the war went on. Washington's fear was further reiterated when he wrote to Joseph Reed, stating that "smallpox is in every part of Boston. The [British] soldiers who have never had it are, we

are told, under inoculation, and considered as a surety of any attempt of ours to attack. If we escape the smallpox in this camp, and the country around, it will be miraculous. Every precaution that can be to guard against this evil, both by the General Court and myself."[24]

Washington was at a crossroads. If he attacked the city, it increased the chance that the army would experience a smallpox epidemic and be out of commission to fight against the enemy. But, if he did not strike the British, the war would continue. The British acknowledged that they were surrounded in the city and did not want to be stuck without supplies when the Boston Harbor froze over. Consequently, General Howe, the leading British officer, decided to move his troops north to their Canadian base in Nova Scotia. This was timely for General Washington, but he was still cautious about moving into the city. It was because of his caution that the Continental forces led by General Washington sent only 1,000 troops who had already survived the smallpox disease to secure the city. In addition, General Washington forbid his soldiers who had never had the smallpox from entering Boston.[25]

Though Boston was now under control of the Continental Army, General Washington was torn. He knew that smallpox was spreading among the citizens, which made his army vulnerable. If he decided to inoculate whole army regiments at a time, and the British found out, the fight for independence would be swiftly cut short. This was because the Continental troops would be bedridden for approximately a month while they recovered from the inoculation process. It was estimated that over one third of the Continental forces had not been exposed to the smallpox disease around the time of the Siege of Boston.[26] This meant that General Washington had 5,000 troops susceptible to the disease. Though Washington had the advantage in numbers, the British troops were highly trained and better equipped, so General Washington needed his troops at full strength. Every day General Washington waited to give the order to inoculate his men, the army was losing soldiers to the vicious disease. It was a complex problem: if Washington continued to forbid inoculation procedures and abided by the Continental Congress's ban in 1776, then the army's quarantine could break at any time. In that case, the soldiers would be liable to the live strand of smallpox, which is much deadlier than the inoculated version. This would result in not only more supplies needed to treat the infected men, but more soldiers to take care of them, and hence less men fighting against the British. General Washington was playing a deadly game.

Though General Washington meticulously weighed the pros and cons of administering mass inoculations, it was only when the disease appeared to be spreading throughout the entire army that he changed his mind. He decided to inoculate the remaining troops against the deadly smallpox disease. This is described in his letter to John Hancock, president of the Continental Congress. He explained: "The smallpox has made such Head in every Quarter that I find it impossible to keep it from spreading thro' the whole Army in the natural way. I have therefore determined, not only to inoculate all the Troops now here, that have not had it, but shall order Doctor Shippen to inoculate the Recruits as fast as they come in to Philadelphia."[27] The command had been ushered, and the key now was secrecy. If the British discovered that thousands of Continental troops were bedridden for a month while undergoing inoculation, they would strike and the army would be too weak to hold its ground.

The inoculations took place in 1777 along the East Coast in towns such as Alexandria, Philadelphia, Boston, and at Hudson Heights, in what were makeshift hospitals.[28] In addition to inoculating the current troops, Washington ordered that the new recruits undergo the procedure before even meeting the main body of the army. The soldiers were relieved to finally have the ban

lifted on the inoculation procedure. Though some of the men experienced the procedures before the ban was lifted, it was now an efficient system of inoculating and treating the sick troops. Joseph Plumb Martin, a revolutionary soldier, recalled the system of mass inoculation in his diary. He noted that Washington "ordered . . . a company with about four hundred others of the Connecticut forces, to a set of old barracks a mile or two distant in the Highlands to be inoculated with the smallpox. We arrived at the cleaned-out barracks, and after two or three days received the infection, which was the last day of May. We had a guard of Massachusetts troops to attend us."[29] The inoculations were successful. As Dr. David Ramsay, a surgeon for the Army wrote:

> The disorder had previously spread among them in the natural way, and proved mortal to many: but after inoculation was introduced though whole regiments were inoculated, in a day, there was little or no mortality from the small pox, and the disorder was so slight, that from the beginning to the end of it, there was not a single day in which they could not, and if called upon, would not have turned out and fought the British. To induce the inhabitants to accommodate officers and soldiers in their houses, while under the small pox, they and their families were inoculated gratis by the military surgeons. Thus in a short time, the whole army and the inhabitants in and near Morristown were subjected to the small pox, and with very little inconvenience to either.[30]

Troops were recovering well, and fortuitously the British were not aware of the crippled state of the Continental Army.

Though inoculation procedures were tested in the American colonies as early as 1721, it was not until decades later that the value of the procedure was recognized in 1776 by General Washington during the American Revolution. It was because of the controversy that overshadowed the inoculation procedure, consciously "spreading" the disease and making an otherwise perfectly healthy human sick, that made the procedure divisive. The early doctors, with the exception of Dr. Boylston, were mainly concerned with quarantining those with the disease rather than stopping it in its early stages. This controversy four decades earlier made this such a complex problem for General George Washington. He originally stuck with the plan to "maintain and quarantine" those sick in hopes of preventing the spread of the disease to the rest of the Continental Army. Despite this, smallpox wreaked havoc on the troops. John Adams estimated that the disease did more damage than all of the enemy forces combined. Weighing the pros and cons of having the Continental Army undergo mass inoculation, General Washington decided to lift the inoculation ban in 1777 in a plea to the Continental Congress. Though he lifted the ban, the Army was still susceptible to a surprise attack by the British, but it did not happen because General Washington and his troops kept the inoculation procedure a secret. Because General Washington made the bold choice to have the Continental Army inoculated, he saved the colonists' fight for independence against the powerful British Army.

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[1] John Adams to Abigail Adams, July 3, 1776, Gordon S. Wood, ed., *John Adams: Revolutionary Writings 1775-1783* (New York: Library of America, 2011), 92.

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[3] Elizabeth Fenn, *Pox Americana: The Great Smallpox Epidemic of 1775-82* (New York: Hill and Wang, 2001), 21.

[4] Elaine G. Breslaw, *Lotions, Potions, Pills and Magic: Health Cures in Early America* (New York: New York University Press, 2014), 13.

[5] Fenn, *Pox Americana*, 63.

[6] Fenn, *Pox Americana*, 61.

[7] Tony Williams, *The Pox and the Covenant: Mather, Franklin, and the Epidemic That Changed America's* Destiny (New York: Sourcebooks, 2011), 61.
[8] Williams, *Pox and the Covenant*, 62.
[9] Fenn, *Pox Americana*, 13.
[10] For Washington's diaries, see http://onlinebooks.library.upenn.edu/webbin/book/browse?type=lcsubc&key=Washington%2C%20George%2C%201732-1799%20--%20Diaries.
[11] George Washington to Jonathan Boucher, May 13, 1770, Library of Congress, https://www.loc.gov/resource/mgw9.004/?sp=9.
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[13] George Washington to Jonathan Boucher, April 20, 1771, Washington Chauncey Ford, ed., *Letters of Jonathan Boucher to George Washington* (Brooklyn, NY: Historical Printing Club, 1899), 24-25.
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[15] George Washington Diary Entry, July 2, 1776, W.B. Allen, ed., *George Washington: A Collection* (Indianapolis, IN: Liberty Fund, 1988), 70.
[16] Kathleen M. Brown, *Foul Bodies: Cleanliness in Early America*. New Haven, CT: Yale University Press, 2009), 128.
[17] Journal of Dr. Stringer, July 27, 1775, Commager, and Morris, eds. *Spirit of Seventy-Six*, 812.
[18] Journal Entry of General Sir William Howe, June 17, 1775, Benjamin Franklin Stevens, ed., *General Sir William Howe's Orderly Book at Charleston, Boston, and Halifax, June 17, 1775 to May 26, 1775* (London, UK: Trafalgar Square, 1890), 144
[19] Washington's General Orders, March 14, 1776, John C. Fitzpatrick, ed., *The Writings of George Washington from the Original Manuscript Sources 1745-1799 Volume 27* (United States Government Printing Office, 1938), 365
[20] Robert Middlekauff, *Washington's Revolution: The Making of America's First Leader* (New York: Alfred Knopf, 2015), chap. 4; see also Richard Archer, *As If An Enemy's Country: The British Occupation of Boston and the Origins of Revolution* (New York: Oxford University Press, 2010).
[21] Middlekauff, *Washington's Revolution*, 147.
[22] Joseph J. Ellis, *His Excellency: George Washington* (New York: Alfred Knopf, 2004), 86.
[23] John Adams to Abigail Adams, July 3, 1776, Gordon S. Wood, ed., *John Adams: Revolutionary Writings 1775-1783* (New York: Library of America, 2011), 92.
[24] George Washington to John Hancock, December 14, 1775, as quoted in Ann M. Becker, "Smallpox in Washington's Army: Strategic Implications of the Disease during the American Revolutionary War," *Journal of Military History* 68 (April 2004): 399.
[25] Middlekauff, *Washington's Revolution*, 97-98.
[26] Commager, and Morris, eds. *Spirit of Seventy-Six*, 815.
[27] Fenn, *Pox Americana*, 303.
[28] Fenn, *Pox Americana*, 94.
[29] Joseph Plumb Martin, *A Narrative of a Revolutionary Soldier*, ed. by Thomas Fleming (Orig. pub. 1830; reprint ed., New York: Signet Classics, 2001), 56.
[30] David Ramsay, *The History of the American Revolution*, ed. by Lester H. Cohen, 2 vols. (Orig. pub. 1789; reprint ed., Indianapolis, IN: Liberty Fund, 1990), 1: 307.