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### Public Health and History: Vaccination Regulation in the Northeastern States

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**Public Health and History: Vaccination Regulation in the Northeastern States**

Department of History, DePauw University

History 300: Law, Constitution, and Society in U.S. History

Dr. David Gellman

December 15, 2020

**Public Health and History: Vaccination Regulation in the Northeastern States**

The eradication of smallpox was a long and tireless journey. Smallpox arrived in the United States with the first colonizers and continued to cause many deaths and infections across the continent for years. This infectious disease caused rashes to form that soon turned to blisters, causing permanent scarring. Along with the blisters, those infected were likely to have pneumonia, brain or kidney damage, or loss of sight.<sup>1</sup> Each wave of the epidemic in America, specifically in the Northeastern states, brought innovative ways to control smallpox and save lives. While quarantining was the typical resolution for the epidemics and would continue to be lifesaving, 1721 saw the introduction of inoculation, the injection of a scab from an infected person into the body of the uninfected. This allowed for the inoculated person to go through a mild case of smallpox, that the body could easily beat.<sup>2</sup>

Concerns about inoculation were present, but the need to control the spread of smallpox was more prevalent. While an inoculated person was still contagious after being injected, they themselves were less at risk of major symptoms and death from the virus. As for the effect on others, it was important to quarantine after receiving the inoculation, until deemed safe to return to society.<sup>3</sup> Eventually, compulsory inoculation was a part of society. As the years went on, so did research, allowing for the discovery of the smallpox vaccine, which fortunately was present to aid in another smallpox epidemic in the late 1800s. During this epidemic the health officials hoped to be more aggressive and successful at containing the virus, which led them to make the smallpox vaccine mandatory.

As this paper will explain, mandatory vaccination and inoculation have created great divides in beliefs about these regulations, and if they should be accepted. Henning Jacobson strongly opposed mandatory vaccination, which led him to taking on Massachusetts in front of the United States Supreme Court. In *Jacobson v. Massachusetts 1905* Henning argued that his

14th amendment right to liberty was being infringed upon through compulsory vaccination.<sup>4</sup> While the court denied his claims, this case encapsulates a large part of United States public health history. Mandatory actions to ensure the wellbeing of citizens, inoculation and vaccination, in the United States has proven itself as a controversy throughout the founding of America to the present day. Had the Supreme Court judges in the Jacobson case ruled with the mindset of history, in addition to the constitution, their argument would have been stronger for supporting mandatory vaccination.

### **I. Smallpox in the United States**

The history of smallpox in the United States leading up to *Jacobson v. Massachusetts 1905* is extensive. Smallpox threatened the world for centuries, but had not reached the Americas, until the age of European exploration and conquest. They brought with them this infectious disease that would go on to kill thousands of Native Americans and other indigenous people. While the colonists did not care about the native lives at risk, they took very seriously their role in protecting themselves and their fellow colonists from smallpox. Quarantining was the staple act when it came to smallpox, even though over the years smallpox would remain present. Continuing to kill many.<sup>5</sup> This became much clearer after the seventeenth century when international trade began to have a much more prominent role in society. The Northeastern colonies were extremely susceptible to the spread of the virus because of their proximity to the trade port in Boston, Massachusetts. Not long after, another smallpox epidemic entered the United States in 1721 from the West Indies, via the Boston Harbor. This infected half of Boston's population, of 12,000 inhabitants, and killed around 900.<sup>6</sup> At this time, strict quarantine rules were enacted, and inoculation was introduced into society. The concept of inoculation was

foreign to most Americans and it brought many disagreements, mobs, and pamphlet wars, but the act of inoculation persisted and eventually gained widespread credibility.

The understanding of inoculation in the States became more prominent as the colonies grew and became confident in their individual rights and wellbeing. This brought the colonists to begin fighting the British for their independence. The Revolutionary War saw inoculation in a new way. When colonists were fighting for freedom against the British, they were also fighting off another smallpox epidemic. The simple solution was mandatory inoculation, especially for soldiers.<sup>7</sup> Mandatory inoculation was thought to be the only way to keep the army safe, while gaining independence from the British. Again, and again the mandate of obliteration of smallpox continued, infuriating people in the process and dividing Americans more and more.

*Jacobson v. Massachusetts* briefs the surface of smallpox in America, as well as how public health and government regulations are related and important. To understand this court case and acknowledge how the decision could have been made stronger, it is important to look at history to see the entire picture of this historical progressive reform. Historians have studied these epidemics and their relationship to public opinion surrounding smallpox, inoculation, and vaccination for years. The introduction of mandatory inoculation in the colonial era is part of a larger, historical progressive reform that has continued to be present throughout United States history and even through today. Historians David Copeland, Louise Breen, and Margot Minardi provide excellent perspectives and knowledge surrounding inoculation, race, and public health strategies. These historians' research will aid in the argument of this paper of creating a stronger relationship between modern day health policies and the history, whether acknowledged or not, that have paved the way for decisions and beliefs in America. This will be explained through a deeper look into the original court case and its arguments, outcomes, and public opinions.

Following that, inoculation in the early 1700s will be presented, explaining how smallpox started in America, its divisiveness, and its relationship to race. That will lead to the Revolutionary War and the creation of the smallpox vaccination that followed the war. This brings the essay back to the main idea of the court case, the broad look at what might have been different, had these situations been taken into account, and how public health crises and individual liberties are balanced.

## **II. The Supreme Court and Public Health in Massachusetts**

Henning Jacobson, an immigrant pastor, believed that smallpox vaccine was not safe, nor regulated. By being required to be vaccinated, he argued he was being denied his right to liberty and was being denied equal protection from the government. This was the base of Jacobson's argument when he went before the Supreme Court. This came as a result of the 1894 smallpox outbreak that had taken over the northeastern states. This epidemic was different, due to the presence of health officials working to rapidly contain the virus. While each epidemic allowed for officials to learn from previous outbreaks, there was no blueprint for stopping this virus. Fortunately, throughout the years a vaccine had been created, replacing inoculation, helping to slow the spread, and eventually leading to eradication.

Health officials in 1902, once the outbreak had become fully present in Massachusetts, enacted quarantines and mass vaccinations in attempts to stop the spread. While the vaccine had proven to be effective, not every citizen trusted it or believed they needed to receive the vaccination. The smallpox vaccine contains vaccinia, a live virus less harmful than smallpox. This allows the body to create antibodies for vaccinia, which are also the same antibodies that fight smallpox, so that the body is ready to fight smallpox if contact occurs. The antibodies last

for up to five years, and after that another round of vaccination is needed.<sup>8</sup> This information helped health officials to encourage and promote the vaccination to all.

With the fear of more people dying, Cambridge, Massachusetts enacted compulsory vaccination laws, requiring each citizen over the age of 21 to receive the smallpox vaccine.<sup>9</sup> In Boston 125 surgeons took to the streets, and vaccinated each person by going house to house. In a singular day they were able to vaccinate 15,000 citizens, but they continually ran into anti-vaccinationists who were headstrong on stopping these vaccinations.<sup>10</sup> While the Boston area as a whole had not enacted mandatory vaccination laws, solely Cambridge, the manner in which the surgeons, accompanied by policemen, went about this process made citizens feel as if they had no choice but to be inoculated, and also felt as if they did not have any rights in this process.<sup>11</sup> A newspaper at the time explained that the process of eradication is not as much dependent on the actions of health officials, but “upon the co-operation it receives from citizens of all classes.”<sup>12</sup> Anti-vaccinationists voices were as loud as ever and had more success than was expected at having citizens understand, and believe in, their point of view.

Henning, the Swedish immigrant, attempted to make his voice louder. His first step was refusing to be vaccinated. He explained that before he came to America he was forced to be inoculated and his experience after being inoculated was terrible, to the point where he would not stand for being vaccinated against his will.<sup>13</sup> He claimed that the vaccination laws are “unreasonable, arbitrary and oppressive,” because they were taking away his right to care for his body.

His arguments against compulsory vaccination were followed by Mr. Justice Harlan delivering the majority opinion of *Jacobson v. Massachusetts 1905*. In a 7-2 ruling, the United States Supreme Court ruled that Mr. Jacobson’s 14th amendment right was not being violated.

Harlan explained that the arguments provided by Jacobson, in his 9th proposal, were merely facts of common knowledge about what was in the vaccine, that his 11th proposal only consisted of alleged effects about vaccinations, and that his 13th and 14th proposals merely his personal opinions. Justice Harlan continued by saying that had Mr. Jacobson given concrete evidence, with reasonable claims, then the outcome of this court case would have been different, but Jacobson could not provide any material that showed that he was allowed complete liberty in this situation. Harlan continues to further support the decision by reminding the petitioner that while the constitution grants liberty to all, that does not mean it is an absolute right to be free from governmental restraints at all times, because liberty is regulated by the law. The court explained that this means citizens, of a well-ordered society, are allowed to have their liberty restricted if it is for the betterment of public health and safety. The Supreme Court also focused on police power while delivering the majority opinion, saying that states have the power to enact any and all health laws, when deemed absolutely necessary. With the use of police power, they can protect the health and public safety of the inhabitants.<sup>14</sup> The role of the government, and its capabilities, in public health crises is important to remember when reflecting back to the beginning of smallpox in America. A continued theme through smallpox history is the balance of liberty, or restriction of liberties for the wellbeing and safety of the public.

### **III. Inoculation's Introduction to the Northeastern States**

In 1706 Cotton Mather, the leading divine of Boston, received an African slave, Onesimus. Upon their meeting Mather asked Onesimus if he had ever had smallpox, the enslaved man responded yes and no. He explained to Mather that he had been inoculated, meaning it was likely that he would not contract the disease. Mather was intrigued and soon became passionate about inoculation and began sharing what he learned from Onesimus with physicians and other



citizens.<sup>15</sup> He paired up with Zabdiel Boylston, an apprentice-trained doctor, who would begin leading inoculation trials. While inoculation was unheard of in America at the time, it had previously been practiced in the eastern part of the world, and had just entered Europe, Mather was confident that with the knowledge from his slave and results from the rest of the world he would be able to begin regular inoculation in Boston.

William Douglass, a European trained physician who was widely respected in Boston, was the biggest public opponent of Mather. Douglass denied the effects of inoculation and refused to look past the color of Onesimus's skin, believing that a slave is not capable of explaining this process or being intelligent, whereas Mather referred to Onesimus as "a pretty intelligent fellow."<sup>16</sup> Boylston led many trials to help convince the public of the positive impact inoculation could have. These trials stood out from other medical trials at this time because of the way he took into account race and gender in his studies. Rather than ignoring race and gender Boylston made it a point to have many participants and documented his findings clearly. His journals and published articles prove that African slaves were not different from the colonists in how their bodies handled smallpox and inoculation.<sup>17</sup> He reasoned that many slaves would not experience as harsh of symptoms of smallpox because they had been previously inoculated in Africa. Mather and Boylston continued their research and Douglass continued countering him. Douglass' claims against Boylston started to become more spiteful, and less about the science. It can be assumed that many of his arguments come out of spite for African people, and his beliefs that slaves were incapable of aiding in public health crises.<sup>18</sup>

The division of Mather and Douglass was heightened in 1721 when smallpox broke out again in Boston. Mather believed that his research had prepared them for this, and preached that everyone should be inoculated, whereas Douglass argued that inoculation would solely mean

purposefully infecting people and then waiting for them to die.<sup>19</sup> With lives at stake and the uneasiness of the epidemic occurring, the public began to take sides: pro inoculation or anti-inoculation. These sides were based off of “religious morality, professional authority, intellectual credibility, public respectability, and more than one case of personal resentment.”<sup>20</sup> This led to one of the most heated pamphlet debates in the colonial times. A common refutation of the anti-inoculators was they should not have to “distinguish betwixt making a well man sick, and endeavoring to make a sick man well,” and that the pro-inoculators were breaking the sixth commandment, that thou shalt not murder.<sup>21</sup> The pro-inoculators came back with opinions of those who had been inoculated, their appreciation for it and effective results. They also wrote prayers in the newspaper, for example “God grant that other towns, if endangered, may take warning by us, and come timely into this Means of Preservation from noisomeness, corruption, distress, and death.”<sup>22</sup> As Minardi suggests, this is a point in history where opinion on differences and medicine begin to stem secularization. The division was so heavily prominent that one morning an anti-inoculator threw a bomb into Mather’s home.<sup>23</sup>

Another reason people were so against Mather and Boylston was because they took no steps to prevent those, they inoculated from spreading smallpox to the public. As previously stated, while they were aware that after being injected with a live dose of smallpox that person would then be able to spread the disease, they made no efforts to quarantine their patients, or ensure that they were not coming in contact with other people. Many called for the government and city officials to step in and regulate this process, or disregard it altogether.<sup>24</sup> After many fights, reflections, and learnings anti-inoculators soon came to the decision that if one desired inoculation they would be allowed to receive the injection of the virus, but only if they could

ensure that they would stay away from others. A while after these sentiments were spoken, they did end up coming to light.

Inoculation was soon regulated more closely and spoken rules and explanations were in place when inoculation was done. While Mather, and Boylston can be praised for their perseverance and work, it is also important to keep in mind the dangers they opened their community to while inoculation was unregulated.<sup>25</sup> One must also keep in mind the presence of African slaves and their information that helped propel this life saving feature forward. It is interesting to look at the introduction of regulation in healthcare and life saving techniques. Smallpox, and the concern for the health and safety of the American people, continues on in history.

#### **IV. Winning the War by Fighting Smallpox**

The American Revolution is notable during the smallpox epidemic not only because of the severity of the outbreak, but because mandatory inoculation was introduced. While the colonists focused on winning the war, they were also fighting an unwanted war at the same time, smallpox. Washington had to ensure that his armies were ready and capable, without the fear of smallpox taking down his men. The Americans were at a disadvantage because of their susceptibility to smallpox. The close proximity of soldiers, unclean living situations, and no prior exposure to smallpox created the perfect environment for the virus to thrive. Britain by this time had learned to contain smallpox by doing regular inoculations and quarantines, allowing them to fight without the fear of smallpox.<sup>26</sup> The difference between the effects of smallpox on the two armies were clear. Washington fought hard for the ability to have his men inoculated. He struggled as many states and cities prevented inoculation due to the fear of it and the possibility of spreading the disease. Boston was the first city to change its stance on inoculation in 1775,

allowing inoculation for all. This meant that all soldiers in Boston were inoculated. Upon hearing this, soldiers in other cities feared for their safety and began self-inoculating in an attempt to protect themselves, a highly unsafe practice that helped Washington advocate for the inoculation of his troops.<sup>27</sup> In March of 1777 Washington wrote a letter to Major General Horatio Gates to begin mandating inoculation of the troops.<sup>28</sup> Mass inoculations began and everyone in the army was given a small part of the virus.

While many soldiers were grateful for the ability to receive inoculation in a safe manner, mandatory inoculation was opposed and feared by some. For example, in a letter to Washington, a general explains that the physician was refusing to perform the inoculations of the soldiers in Woodbridge.<sup>29</sup> As more men began the inoculation process the number of sick men increased and soldiers began to grow more fearful. Men were dying and those infected were being relocated to various camps. Washington, however, stuck to his decision, as he believed that this was the right course of action. While these men were fearful of Washington's decision, most men were inoculated and continued to fight, especially after they regained their strength from their fight with smallpox. Four out of every 500 men seemed to have died from the mandatory inoculation, which was deemed as a success in Washington's eyes. Mandatory inoculation would continue for the troops throughout the Revolutionary War and became a much more normalized practice for other battles to come.<sup>30</sup>

The successes of mass inoculation at this time allowed Washington to focus all of his attention on war strategy by 1778, not the virus. The mandatory inoculation ensured that the United States had healthy soldiers that were able to fight.<sup>31</sup> The ability of Washington to acknowledge the fears of inoculation, its effects and the necessity of enacting mandatory inoculation showcases his desire to not only be a war minded individual, when the future of the

United States was at stake, but to take into account public health and the position he would be able to play in it and its importance in governmental affairs and enforcement.

## **V. Liberty and Public Health**

The initial proposal of inoculation, by Cotton Mather, was an incredibly divisive concept. While it led to strongly worded pamphlet wars citizens at the time also took stronger action than explaining their issues with inoculation in newspapers. They took to rioting. Anti-inoculators at this time felt that in order to defend their liberty they needed to riot. These mobs made their presence known. They were confident, loud, and aggressive. At one point in that development of inoculation in the 1720s they even burned down a hospital.<sup>32</sup> At the beginning of the first public health crisis in the United States opposition was prevalent and state authorities were constantly present to attempt to keep the public safe and to determine the best course of action for the betterment and safety of the public.<sup>33</sup>

While soldiers in the Revolutionary War were unable to be in a position to fight their commanding officers on inoculation that does not mean opposition was not present. The fear of smallpox, in every epidemic, made citizens fearful and confused. Washington's army was forced to quickly digest their necessity for complying with compulsory inoculation, because it would save more lives than forgoing inoculation of all soldiers. This matter was made more difficult by the fact that every man in the army was fighting for their liberty and freedoms. Washington was tasked with a difficult process of denying liberty to thousands of men risking their lives for freedom.<sup>34</sup> This decision had a very positive outcome helping to prove that the decision was made to support the soldiers and keep them as safe as possible.

Public health is ingrained and integral to the history of the United States. A country that is founded on liberty has shown the importance of balancing safety and freedoms. *Jacobson v.*

*Massachusetts 1905* helped to emphasize what was repeatedly seen through history. To have a well ordered society individuals rights and liberties can, asserted Justice Harlan, “under the pressure of great dangers, be subjected to such restraint, to be enforced by reasonable regulations, as the safety of the general public may demand.”<sup>35</sup> Jacobson was not alone in believing that his freedom, his 14th amendment right, was taken away when subjected to compulsory vaccination, nor was he incorrect in that belief. The issue remains about how much liberty can be subjected to public health concerns. While throughout these epidemics quarantining was constantly mandated, it was supported by most. Citizens, especially in the 18th century, found pride and purpose in complying with regulations to stay at home, when smallpox was a major threat to their safety.<sup>36</sup> The court explained, echoing past government officials, that cooperation of individuals is key to stopping major threats that face every citizen, regardless of race, gender, and age.<sup>37</sup>

## **VI. Mandatory Vaccinations and their future**

Even with a strong opposition, inoculation and vaccination were extremely successful in saving lives and keeping the majority of the public safe. The extensive history was most likely not present in the discussion in the ruling of *Jacobson v Massachusetts 1905*, but the reasoning would have been stronger with the addition of history. The beginning of inoculation in the United States emphasized the need for governmental intervention, and the government was present in many public health issues from that point on. History helps to show the importance of acting for society, even when constitutionally granted the right to liberty. The eradication of smallpox was a long and tireless journey but was largely successful. Mass epidemics are large threats to society that must be taken seriously. Cooperation and commitment are key to maintaining a healthy society.

Public health is important. Its relationship with history allows a greater look into why vaccination and inoculation will always provoke fear. Thus, governmental intervention and regulation is necessary, and is a normal part of public health issues. As the world is introduced to a new vaccine for a pandemic facing the world today, history should be present when discussing these matters. COVID-19, while different from smallpox in countless different ways, shares many similarities when it comes to public opinion, controversy, and governmental presence. Liberty is an integral part of what it means to be a citizen of the United States, but with that right comes the necessity to act for the safety and health of the country as a whole. This is done by following regulations that are put in place by state governments and realizing that epidemics and pandemics need nationwide, and worldwide, participation to even attempt to eradicate a disease that is threatening the public. *Jacobson v. Massachusetts 1905* explains that while state governments have the ability to mandate vaccination, they are able to do so only if the vaccination is safe for those it is mandated to and that it is mandated only if deemed an effective way at protecting the health and safety of the public.<sup>38</sup>

#### notes

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<sup>1</sup> Copeland, David A.. *Debating the Issues in Colonial Newspapers : Primary Documents on Events of the Period*. Westport: Greenwood Publishing Group, Incorporated, 2000. Accessed December 11, 2020. ProQuest Ebook Central.

<sup>2</sup> Breen, Louise A. "Cotton Mather, the "Angelical Ministry," and Inoculation." *Journal of the History of Medicine and Allied Sciences* 46, no. 3 (1991): 333-57. Accessed December 11, 2020. <http://www.jstor.org/stable/24622667>.

<sup>3</sup> Fenn, Elizabeth A. *Pox Americana: the Greatest Smallpox Epidemic of 1775-82*. Gloucestershire: Sutton Publishing, 2004.

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<sup>4</sup> Colgrove, James Keith. "Between Persuasion and Complulsion: Smallpox Control in Brooklyn and New York, 1894-1902." *Bulletin of the History of Medicine* 78, no. 2 (2004): 349-378. doi:10.1353/bhm.2004.0062.

<sup>5</sup> Minardi, Margot. "The Boston Inoculation Controversy of 1721-1722: An Incident in the History of Race." *The William and Mary Quarterly*, Third Series, 61, no. 1 (2004): 47-76. Accessed December 11, 2020. doi:10.2307/3491675.

<sup>6</sup> Breen, *Cotton Mather and Inoculation*

<sup>7</sup> Becker, Ann M. "Smallpox in Washington's Army: Strategic Implications of the Disease During the American Revolutionary War." *The Journal of Military History* 68, no. 2 (2004):381-430. doi:10.1353/jmh.2004.0012

<sup>8</sup> Center for Biologics Evaluation and Research. "ACAM2000 (Smallpox Vaccine) Questions and Answers." U.S. Food and Drug Administration. FDA, March 23, 2018. <https://www.fda.gov/vaccines-blood-biologics/vaccines/acam2000-smallpox-vaccine-questions-and-answers>.

<sup>9</sup> Colgrove, *Smallpox in Boston*

<sup>10</sup> Special to The New York Times. 1902. Fighting Smallpox in Boston: 125 Surgeons, Accompanied by Policemen, Vaccinated 15,000 Persons Yesterday. *New York Times (1857-1922)*, Jan 27. <https://login.duproxy.palni.edu/login?url=https://www-proquest-com.duproxy.palni.edu/historical-newspapers/fighting-smallpox-boston/docview/96182442/se-2?accountid=10478>.

<sup>11</sup> Colgrove, *Smallpox in Boston*

<sup>12</sup> "Smallpox and the Health Department." *New York Times (1857-1922)*, Mar 11, 1902. 8, <https://login.duproxy.palni.edu/login?url=https://www-proquest-com.duproxy.palni.edu/historical-newspapers/smallpox-health-department/docview/96160954/se-2?accountid=10478>.

<sup>13</sup> Pusey, Allen. "Smallpox Eradicated." HeinOnline, May 8, 1980.

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<sup>14</sup> "Jacobson v. Massachusetts, 197 U.S. 11 (1905)." Justia Law. Accessed December 11, 2020. <https://supreme.justia.com/cases/federal/us/197/11/>.

<sup>15</sup> Breen, *Cotton Mather and Inoculation*

<sup>16</sup> Minardi, *Boston Inoculation and Race*

<sup>17</sup> Boylston, Zabdiel. "Boylston Z (1726)." The James Lind Library, September 16, 2015 <https://www.jameslindlibrary.org/boylston-z-1726/>.

<sup>18</sup> Minardi, *Boston Inoculation and Race*

<sup>19</sup> Breen, *Cotton Mather and Inoculation*

<sup>20</sup> Minardi, *Boston Inoculation and Race*

<sup>21</sup> Copeland, Debating Issues in Colonial Newspapers, pg: 19

<sup>22</sup> Copeland, Debating Issues in Colonial Newspapers, pg: 19

<sup>23</sup> Minardi, *Boston Inoculation and Race*

<sup>24</sup> Fenn, *Pox Americana*

<sup>25</sup> Blake, John B. "The Inoculation Controversy in Boston: 1721-1722." *The New England Quarterly* 25,no. 4 (1952): 489-506. Accessed December 11, 2020. doi:10.2307/362582.



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<sup>26</sup> Becker, *Smallpox and Washington's Army*

<sup>27</sup> Becker, *Smallpox and Washington's Army*

<sup>28</sup> “From George Washington to Major General Horatio Gates, 4 March 1777,” *Founders Online*, National Archives, <https://founders.archives.gov/documents/Washington/03-08-02-0536>. [Original source: *The Papers of George Washington*, Revolutionary War Series, vol. 8, *6 January 1777–27 March 1777*, ed. Frank E. Grizzard, Jr. Charlottesville: University Press of Virginia, 1998, pp. 509–510.]

<sup>29</sup> “To George Washington from Major General Horatio Gates, 7 August 1776,” *FoundersOnline*, National Archives <https://founders.archives.gov/documents/Washington/03-05-02-0451>. [Original source: *The Papers of George Washington*, Revolutionary War Series, vol. 5, *16 June 1776–12 August 1776*, ed. Philander D. Chase. Charlottesville: University Press of Virginia, 1993, pp. 597–602.]

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<sup>31</sup> Gillet, *Army Medical History*

<sup>32</sup> Mutschler, Ben. ““Before COVID: Illness in Everyday Life in Early New England” Public Program.” Webinar from the American Antiquarian Society, Zoom, December 2, 2020.

<sup>33</sup> Minardi, *Boston Inoculation and Race*

<sup>34</sup> Becker, *Smallpox and Washington's Army*

<sup>35</sup> *Jacobson vs. Massachusetts 1905*

<sup>36</sup> Mutschler, *Disease in Early New England*

<sup>37</sup> *Jacobson vs. Massachusetts 1905*

<sup>38</sup> *Jacobson vs. Massachusetts 1905*

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