

Smallpox

For more than 3,000 years, smallpox killed or badly disfigured many millions of people. On average, the disease killed up to thirty percent of those infected, and the majority of survivors carried deep scars (pockmarks), oftentimes concentrated on their faces.

Throughout history, disease outbreaks sparked fear for many. Before the invention of vaccinations in 1796, people had very few ways to protect themselves from disease.

Without the advancements of modern medicine, many contracted illnesses proved fatal. Among the deadliest and most widespread diseases was smallpox, caused by the microscopic variola virus. Symptoms of smallpox include fever, nausea, vomiting, body aches, and the characteristic pustules or pox.

Smallpox likely originated in northeastern Africa around 10,000 B.C.E., though the exact location and time frame is uncertain. The disease later spread to Asia and Europe.

When Spanish and Portuguese conquistadors arrived in the Americas, they brought smallpox with them, which devastated the Indigenous populations of South and Central America. During the French and Indian War, British forces used smallpox as a biological weapon to weaken the Indigenous tribes that assisted the French.

With every smallpox outbreak, people observed that those who had survived the infection typically did not get smallpox again. For those who contracted smallpox a second time, the infection was much less severe and usually not fatal.

These observations led to the creation of inoculation, the process of contracting smallpox on purpose to induce immunity and reduce the risk of death. Smallpox inoculation was a simple procedure: a doctor removed pus from an active pustule of an infected person, and then inserted that pus into the skin of a non-infected person via a small incision.

The insertion of the pus resulted in the inoculated person contracting smallpox. Despite being infected, the inoculated person usually experienced only mild symptoms that were not life threatening. Inoculation had been practiced for centuries in parts of Asia and northeastern Africa before being introduced to Europe, and eventually the North American colonies.

Smallpox, both the naturally contracted disease and the inoculated version, were common in the crowded cities of Europe. Most Europeans did not make it through childhood without contracting the disease, and those who survived became immune.

Doctors inoculated those who did not contract the disease naturally. Not only was most of Europe immune to smallpox, but most of the British military was as well. During this era, most American colonists lived in the countryside far from their neighbors, which reduced smallpox transmission.

Because few American colonists had contracted the disease before, the colonies experienced sporadic and deadly outbreaks of smallpox. There was never a widespread epidemic that resulted in herd immunity. (NPS)

Colonial Boston had faced many smallpox outbreaks throughout the 1700s, the most severe of which occurred in 1721, 1752, 1764, and 1775.

The only disease for which prevention in the form of immunization was available was smallpox. Inoculation, the deliberate introduction into the body of material infected with the smallpox virus, thereby causing a mild case of that disease. (Gillette)



Despite being widely accepted in Europe, inoculation became incredibly controversial in Boston. Many people believed the procedure was more deadly than naturally contracting smallpox, even though evidence suggested otherwise.

Also, the clergy claimed that smallpox was God's punishment for sin. They argued that inoculating against smallpox interfered with God's will. Boston newspapers published arguments for and against inoculation, polarizing Bostonians on the subject.

When American colonists launched their revolution against Britain, they quickly encountered a second but invisible enemy that threatened to wipe out the new Continental Army: highly contagious smallpox. (National Geographic)

Despite the progressive acceptance of inoculation throughout the colonies, another smallpox outbreak seized Boston in 1775. After the Battle of Bunker Hill in June of 1775, military actions between the British, led by General William Howe, and the colonists, led by George Washington, stalled.

Smallpox was gripping the citizens of Boston, and to some extent Howe's troops. Washington knew that the Continental soldiers, many from rural, isolated parts of the colonies and therefore not immune to smallpox, would be devastated by an outbreak.

The stalemate between Washington and Howe continued until March 7, 1776, when General Howe announced that the British army planned to evacuate Boston.

Despite this victory for the colonists, Washington initially forbade his troops from entering the city because of the smallpox epidemic. On March 17, Washington permitted one thousand men who had previously contracted smallpox to enter the city. Washington could discern who previously had the disease from the pox scars on the faces of survivors.

In 1775, Continental soldiers, led by Colonel Benedict Arnold, marched from Cambridge, Massachusetts towards Quebec to prevent the city from falling to the British. Just one month later, in December, smallpox was reported among the soldiers.

Smallpox crippled the forces in Canada, preventing them from launching an attack on Quebec in late 1775. Many soldiers' scheduled enlistment ended on January 1, 1776 and a majority warned their superiors they planned to not reenlist due to fear of the disease.

These soldiers would rather desert the cause than risk death by smallpox. These soon-to-be expired enlistments forced Arnold and General Richard Montgomery to launch their assault on Quebec before the year's end.

Montgomery later reported that only about 800 men were able to fight, as the rest were sick with smallpox. The lack of healthy soldiers resulted in a spectacular failed attack on Quebec on the 30th of December. British forces killed Montgomery, wounded Arnold, and captured hundreds of colonists.

Arnold maintained substantial forces around Quebec in hopes of launching a second, successful assault, however, the lack of reinforcements and the ravages of smallpox impeded any future attack.

Washington understood the grave threat smallpox imposed upon the Continental Army and their chances of winning the war. He even described smallpox as "more destructive than the sword."

Personal experience played an important role in Washington's attitude toward and understanding of the variola virus. While traveling in Barbados in November of 1751 with his brother Lawrence, Washington himself had been stricken with smallpox.

Confined with the illness for twenty-six days, he suffered greatly and was permanently pocked by the experience. Only nineteen at the time of the attack, Washington developed lifelong immunity as a result.

The disease may also have rendered him incapable of fathering children, as modern scientists have documented infertility as a complication of smallpox. (Becker)

However, Washington also feared the spread of smallpox between soldiers who did not quarantine after inoculating.



Washington wrote,

when I recall to mind the unhappy situation of our Northern Army last year I shudder at the consequence of this disorder if some vigorous steps are not taken to stop spreading it.

In a February 6, 1777 letter to Dr. William Shippen Jr., director of the medical department of the Continental Army, Washington proclaimed:

Finding the Small pox to be spreading much and fearing that no precaution can prevent it from running through the whole of our Army, I have determined that the troops shall be inoculated.

This Expedient may be attended with some inconveniences and some disadvantages, but yet I trust in its consequences will have the most happy effects.

Necessity not only authorizes but seems to require the measure, for should the disorder infect the Army in the natural way and rage with its usual virulence we should have more to dread from it than from the Sword of the Enemy.

Under these circumstances I have directed Doctr Bond to prepare immediately for inoculating in this Quarter, keeping the matter as secret as possible,

and request that you will without delay inoculate All the Continental Troops that are in philadelphia and those that shall come in as fast as they arrive.

You will spare no pains to carry them through the disorder with the utmost expedition, and to have them cleansed from the infection when recovered, that they may proceed to Camp with as little injury as possible to the Country through which they pass.

If the business is immediately begun and favoured with the common success, I would fain hope they will be soon fit for duty, and that in a short space of time we shall have an Army not subject to this the greatest of all calamities that can befall it when taken in the natural way.

With this order, George Washington enacted the first medical mandate in American history.

Washington declared his order to Congress that all troops must be inoculated, and he ordered that all new recruits entering Philadelphia must be inoculated upon entry.

To offset the temporary loss of soldiers while they healed from the inoculation, military doctors inoculated divisions in five day intervals. The military used private homes and churches as isolation centers to control spread of the disease.

Continental military forces took a huge risk with these mass inoculations. If the British learned of these mass inoculations, they could have launched an attack on the weakened Continental Army. Therefore, these inoculations had to be kept secret in order to prevent word from getting out to the British.

Washington urged the inoculations to be completed as soon as possible so the soldiers would be ready to fight by the summer.

Though some, including General Israel Putnam, followed Washington's orders and delivered the mass inoculations, several generals and governors prohibited inoculation. By disobeying Washington's orders, his own generals prevented Washington from having the number of soldiers he needed for his summer campaigns.

Later, General Gates was able to write Washington that "The Smallpox is now perfectly removed from the Army." Smallpox did not reappear in Gates's army, but other diseases also afflicted his men. Nevertheless, despite these hopeful comments, the shortage of medicines was by no means relieved, self-inoculation by newly arriving militia was threatening a renewed epidemic.

Throughout the revolutionary period, smallpox posed a substantial threat to the health of citizens and soldiers alike.

Statistics specific to this disease are not readily available, but anecdotal evidence and historical analysis strongly suggest that in eighteenth-century warfare, disease invariably caused more deaths than wounds.

Historian Mary Gillette estimated that

90 percent of the deaths occurring among the inexperienced, poorly clothed, poorly fed soldiers of the Continental Army, most of them country boys without previous exposure to communicable diseases ... were from disease."

John Adams, who served on the Congressional War Committee, noted in a letter of April 13, 1777 to his wife, Abigail, that disease killed ten soldiers for one killed in battle, added that

Discipline, discipline is the great thing wanted. There can be no order nor cleanliness in an army without discipline.

By the end of May 1777, conditions in the Northern Department with its three general hospitals at Mount Independence, Fort George, and Albany were much improved. The general hospital at Mount Independence, for example, on May 21 reported no great incidence of anyone disease among its patients but rather a variety, from asthma and measles to inflammation of the liver and “cough and hectic.”

Smallpox was under control, supplies were adequate, patients were, for the most part, housed in buildings specifically designed for their care, the staff was large in proportion to the number of patients, fresh vegetables were available from local gardens, and evidence even indicates that sheep and cattle were now being delivered on the hoof.

By May 1777, therefore, the Hospital Department in the North was well prepared to handle the casualties of another hard campaign.

Information here is primarily from National Geographic, National Archives; National Park Service; The Army Medical Department, Gillette; Smallpox in Washington’s Army, Becker

In an effort to provide a brief, informal background summary of various people, places and events related to the American Revolution, I made this informal compilation from a variety of sources. This is not intended to be a technical reference document, nor an exhaustive review of the subject. Rather, it is an assemblage of information and images from various sources on basic background information. For ease in informal reading, in many cases, specific quotations and citations and attributions are often not included – however, sources are noted in the summary. The images and text are from various sources and are presented for personal, noncommercial and/or educational purposes. Thanks, Peter T. Young