

Smallpox: Responding to an Epidemic

By Alan Rumrill



Keene_'s Ash Swamp Yard is also known as the Smallpox Cemetery

The coronavirus pandemic has given the general public a more comprehensive understanding of how diseases can spread, the methods used to slow the spread, and how the medical profession reacts to an outbreak of this nature. We have been introduced to detailed information about the spread of the disease through respiratory droplets, how the use of masks can help slow the spread, the progress toward the development of a vaccine to increase immunity, and numerous other medical science facts and figures. The knowledge of infectious diseases and the medical response to them was much different 250 years ago than it is today, however. The smallpox epidemic of 1776 illustrates some of those differences, and offers hope about the possible eradication of a disease of this type.

Smallpox was an infectious disease caused by a virus. Symptoms included fever, vomiting, sores in the mouth, and then a skin rash. The origin of smallpox is unknown, but there is evidence that it was infecting mankind almost 2000 years ago. By the 18th century about 400,000 people died from the disease annually in Europe. At that time about one out of every three people who contracted the disease died as a result.

Smallpox was transported to the New World by infected settlers. Outbreaks struck the American colonies several times after European settlement. In the Cheshire County area, for example, the disease descended on Keene late in the year 1760. Keene's oldest surviving cemetery, located near the Keene Country Club, originated as a burial site for victims of the disease who lived nearby. By the beginning of 1761, several residents were infected. At least three of those people died: Isaac Clark on January 16, 1761, Mary Foster on February 5, and her husband Amos 1½ months later on March 22nd. Those people were buried on this plot of land.

On March 9, 1761 there was another death just up the road when 9-year-old Betty Clark passed away, almost surely as a result of smallpox. Young Betty was buried with the others.



Betty Clark_'s gravestone

During the Revolutionary War, smallpox was one of the greatest threats to the American Army. An outbreak spread throughout the city of Boston during the fall and into the winter of 1775. The disease often proliferated in military encampments where the soldiers were confined in a cramped quarters, as were the American troops stationed outside of

Boston. Many of these soldiers were volunteer militiamen who served brief enlistments before returning to their farms and families, occasionally carrying the disease with them. As a result, another outbreak of smallpox swept through Cheshire County in 1775 and 1776.

Details about the causes, spread and treatment of viruses were not as clearly understood then as they are today. The colonists realized that the two options for protecting themselves against this disease were quarantine or inoculation. They had learned that isolating infected individuals helped slow the spread of smallpox from one individual to another. Sick individuals were often quarantined, either in their homes or by gathering them together in location separated from the general population.

There was no cure for smallpox, but those who survived being infected were then immune to the disease. The practice of inoculation against the disease had been in use in Europe since the early 1700s and had been used in Boston as early as the 1720s. Inoculation involved intentionally placing infected material into the bodies of healthy individuals. An incision was made in the skin and pox was applying to the wound. It was hoped that those who were inoculated would contract a mild form of smallpox, recover, and be immune to further infections. Inoculation was very controversial and many people feared that intentionally infecting themselves might well result in death.

Both quarantine and inoculation were used in Cheshire County in 1775 and 1776. Keene's Isaac Wyman, Jr. was present at the battle of Bunker Hill outside of Boston in June of 1775. The following month local diarist, Abner Sanger, recorded that he had heard that "young Isaac Wyman has got the smallpox." On July 23 Sanger wrote that he and Wyman's father had visited the "hospital or pox house" to deliver supplies and confer with the nurses. Dr. Josiah Pomeroy worked to slow the spread of the disease by building the hospital to isolate infected residents or to inoculate those who had the courage to undergo the procedure. An emergency

town meeting was held in August at which the townspeople refused to approve the hospital, fearing it might escalate the spread of the disease.

The outbreak in Keene grew to epidemic proportions the following spring. Pomeroy's hospital was still active and Dr. Gideon Tiffany opened a second hospital in the town. A town meeting in April resulted in considerable argument about the hospitals. The voters approved the hospitals, but then immediately withdrew their approval. Meanwhile, the disease continued to spread among the population of Keene and surrounding towns. Keene historian, Salma Hale, recorded that a large number of residents "were inoculated, of whom six died."

Many townspeople felt that mismanagement of the hospitals was to blame for the rising death toll, and the subject was discussed again at a town meeting held in September of 1776. The minutes of this meeting recorded that: "The smallpox has been spread by persons not frequenting the hospitals and by conveying the infection by not using proper care to avoid it..." The hospitals were finally approved, with strict regulations that required a seven foot high fence with a good gate, adequate nursing care, restriction of all patients to within 50 rods of the hospital, and a change of clothes for the doctors to avoid the spread of the disease when they left the facility.

Despite the approval and the regulations, those opposed to the hospitals took their argument to a higher authority, petitioning the New Hampshire legislature to close the hospitals and cease the inoculations "by which Means the Small Pox has been Spread and Still Continues to spread... to the Great Detriment of the public Good." Diarist Sanger and historian Hale both described additional local deaths as a result of the disease during the following months.

It is clear that the people of Keene and throughout the American colonies feared what they could not control and did not understand, in the form of a viral epidemic that spread through their communities. Scientific knowledge about the spread and control of smallpox was limited. Many felt that the disease was spread from the hospitals and that receiving an inoculation might kill them rather than save them, both of which were undoubtedly true in some cases.

Although scientists and doctors have a much more comprehensive understanding of viral infections today, similar fears have accompanied the coronavirus pandemic. Limited information during the early days of the outbreak and the lack of a vaccine to combat the virus have resulted in anxiety around the world. The story of smallpox eventually had a happy ending, however. English physician, Edward Jenner, created the first smallpox immunization in 1796. He successfully used fluid from cowpox, a milder disease than smallpox, to immunize patients against smallpox. Jenner's first vaccine model has been used to fight many deadly diseases. A worldwide smallpox vaccination program resulted in a declaration in 1980 that the disease had been eradicated from the globe.

