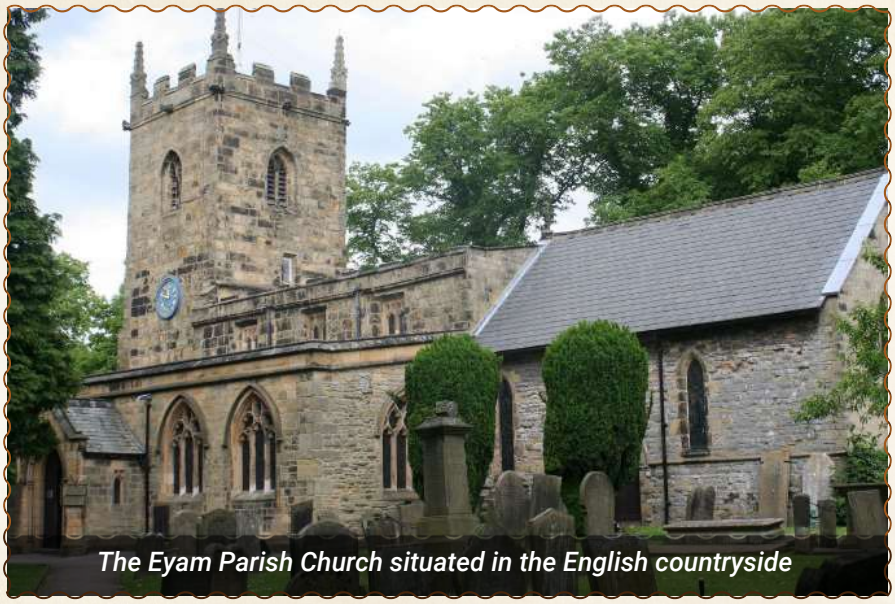
A history of quarantine and the lessons learnt from the small village of Eyam in the English countryside

Since COVID-19 was declared a global pandemic, many countries around the world imposed some form of quarantine to control its spread. What can the history of quarantine teach us about isolation and lockdowns now?

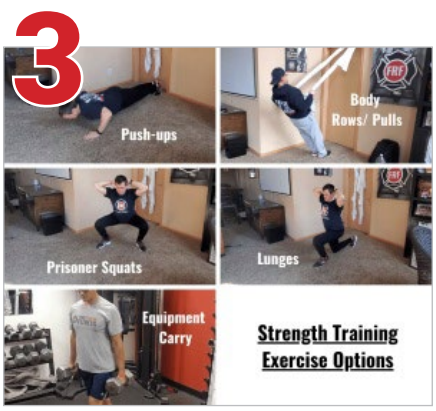


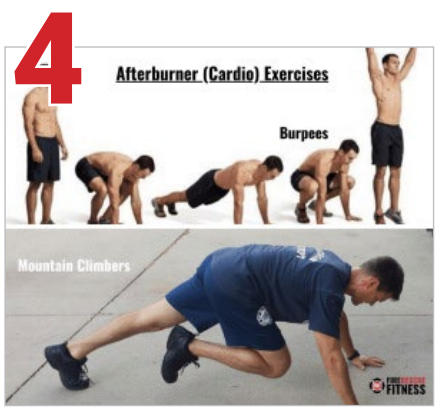
The Eyam Parish Church situated in the English countryside

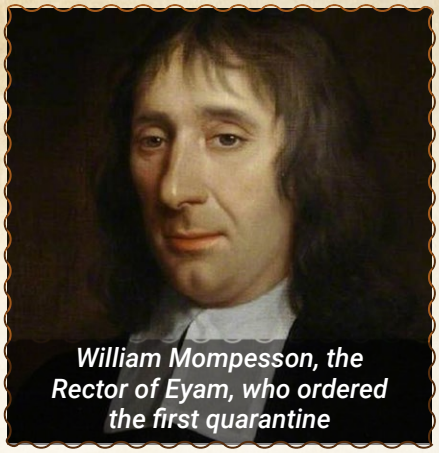
Beginning as early as three thousand years ago, quarantine and isolation were employed as technologies against the proliferation of disease. As human understanding of disease transmission grew, quarantine sophistication and efficacy improved, until it became standard practice in combating epidemics. Though not always successful, quarantines delayed or contained outbreaks by removing all potential pathogen carriers from the populace. At first, lightly used against leprosy and plagues of antiquity, quarantine, as a technology, expanded rapidly in the Western world during the Black Death epidemic. Its initial success against the plague established quarantine as a standard procedure to stopping the spread of epidemics and pandemics.

The practice of quarantine, as we know it, began during the 14th Century in an effort to protect coastal cities from plague epidemics. The Bible's Old Testament's Book of Leviticus details how people with leprosy were effectively isolated from the rest of the community. When the bubonic plague emerged in the 1370s, European cities also started their own quarantine system. Ships arriving in Venice from infected ports were required to sit at anchor for 40 days before they and the goods they carried, could come ashore. This practice, called quarantine,

That is, it! You just created and completed (hopefully) a very efficient and effective workout. The key is to stay consistent and perform workouts like this three times a week (at least). Remember, you are not only working out for yourself but to help serve your community, your crew and your family.







William Mompesson, the Rector of Eyam, who ordered the first quarantine

was derived from the Italian words quaranta giorni, which mean 40 days.

Even with the Great Plague of London in the 17th Century, quarantine stations were provided by parishes to allow infected people to isolate. As in Bardonecchia, watchmen stood guard outside to ensure that no one either escaped or tried to get in.

During the next 100 years, similar laws were introduced in Italian and in French ports and they gradually acquired other connotations with respect to their original implementation.

The Black Death

The use of quarantine rapidly expanded during the Black Death of the 14th Century. Originally appearing in the Far East, the disease that would come to be synonymous with plague first emerged in Europe as nothing more than a rumour in 1346. Over the next five to ten years the plague exploded onto the Western world, killing millions and altering the fabric of every society it touched.

Measures analogous to those employed against the plague have been adopted to fight against the disease termed the Great White Plague, ie tuberculosis and in recent times various countries have set up official entities for the identification and control of infections.

Even more recently (2003) the proposal of the constitution of a new European monitoring, regulatory and research institution has been made, since the already available system of surveillance has found an enormous challenge in the global emergency of the severe acute respiratory syndrome (SARS). In the absence of a targeted vaccine, general preventive interventions have to be relied upon, including high healthcare surveillance and public information. Quarantine has, therefore, had a rebound of celebrity and updated evidence strongly suggests that its basic concept is still fully valid.

Stained glass window in Eyam Church in the UK

The Black Death took an enormous toll on Europe's population. Though reliable information is scarce, between 1347 and 1351, the "Black Death was darting about, mortality varied from an eighth to two-thirds of a region's population." By the time it subsided, 20 million people had died in Europe alone, reducing the population to 80 million people. The epidemic completely halted the rise in human population begun in 5000 BCE; it killed so many people that it would take Europe more than 150 years to return to its former population.

By the late 14th Century, the effects of the plague were so bad that Italian city-states resorted to desperate measures in an attempt to preserve public health. The doctrines of contagion set up in Italy led to two vitally important "forms of public health control, municipal quarantine and isolation of the victims."

The forty-day quarantine was strictly adhered to and maintained for the next 300 years throughout Europe. In northern Italy, the quarantine continued in order to avoid the importation of diseases to their busy commercial ports. In 1652, the city of Genoa quarantined people "who had been in close and direct contact with infected people or merchandise" for the standard period of forty days.

The forty-day quarantine proved to be an effective formula for handling outbreaks of the plague. According to current estimates, the bubonic plague had a 37-day period from infection to death; therefore, the European quarantines would have been highly successful in determining the health of crews from potential trading and supply ships.

In England, as in the rest of Europe, the Black Death lingered and tormented people for several hundred years. England's major cities were particularly vulnerable; poor sanitary conditions and massive overcrowding facilitated outbreaks. The last in a long series

of pandemics, the Great Plague of London in 1665, killed between 75 000 and 100 000 of the capital city's citizens. During the summer months the death rates rose, peaking in September "when 7 165 Londoners died in one week."

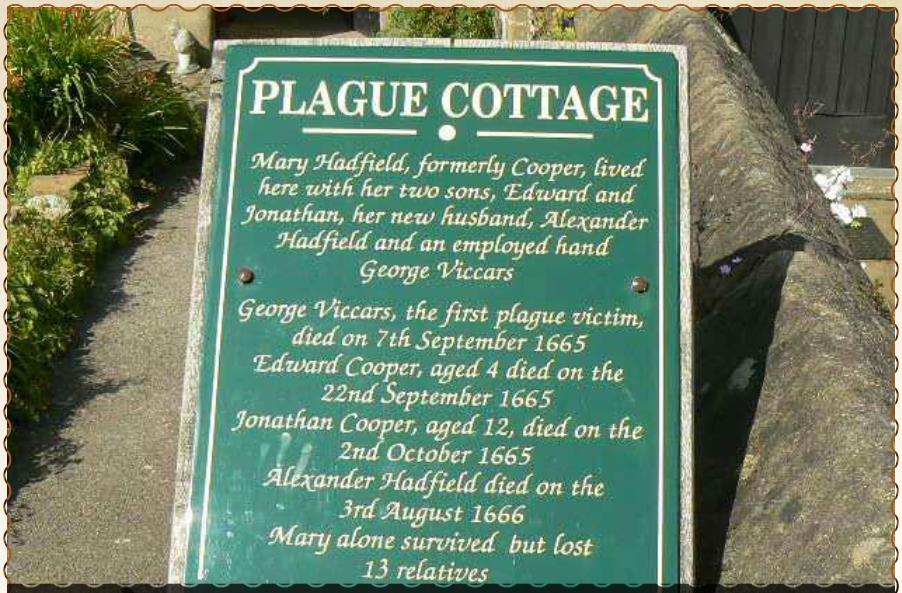
The importance of the small village of Eyam, England

Eyam is an English village and civil parish in the Derbyshire Dales that lies within the Peak District National Park in England. Eyam's main claim to fame is the story of how the village chose to go into isolation so as to prevent infection spreading after bubonic plague was discovered there in 1665.

Eyam instituted a self-imposed quarantine in 1666, after its citizens began dying of disease, the bubonic plague. It came in a parcel of cloth sent from London to the village tailor Alexander Hadfield. When Hadfield's assistant George Viccars spread the cloth out by the fire to air, he found it was infested with rat fleas. He died a few days later with his burial being recorded in the parish registers on 7 September 1665.

Spread by infected fleas, the bacteria enters the skin through a flea bite and travels via the lymphatic system to a lymph node causing it to swell. This causes the characteristic buboes, which typically appeared under the arm but could surface in the neck or groin area also. Combined with the black bruising under the surface of the skin, fever, vomiting and spasms, the plague was a truly terrifying disease that spread with a startling ferocity.

At the urging of William Mompesson, the Rector of Eyam, quarantine was imposed in late May or early June of 1666. By mutual agreement, the citizens of the village agreed to confine themselves to "within a circle of about half a mile around the village." Nearby towns and various lords left food and other supplies at several pre-arranged points on the boundary of the village. These quarantine methods prevented the disease from spreading outside the parish.



The village of Eyam, while undoubtedly saving the lives of thousands in the surrounding area, paid a high price

The village of Eyam, while undoubtedly saving the lives of thousands in the surrounding area, paid a high price. Percentage wise they suffered a higher death toll than that of London. However the impact on medical understanding was significant.

Doctors realised that the use of an enforced quarantine zone could limit or prevent the spread of disease. The use of quarantine zones are used in England to this day to contain the spread of diseases such as foot and mouth. It took longer for the ideas of quarantine to filter through to become common practice in hospitals. Florence Nightingale pioneered the use of isolation wards to limit the spread of infectious diseases in hospitals during the Crimean war. This is still used today, with hospitals learning quickly that to contain the spread of diseases such as the Norovirus, isolation wards needed to be used.

Other lessons were learnt from the methods used at Eyam. Doctors began to use other practices to limit the risk of contamination. At Eyam this was done by paying for food supplies by dropping coins into pots of vinegar or water, preventing the coins from being directly handed over. This continues today with the use of sterilisation of equipment and medical clothing. Most recently, lessons learnt from Eyam have been seen in the handling of the Ebola epidemic in Africa. The quick disposal of bodies close to the immediate area of death has limited the risk of spreading the disease.

After 1666, although there were many isolated outbreaks, there were no further epidemics of the plague in England. While the events at Eyam did little to change attitudes initially, in the longer term scientists, doctors and the medical world used Eyam as a case study in the prevention of disease.

Beyond the plague, quarantine, as well as various forms of self-isolation and physical and social distancing, has been adapted to respond to and contain other outbreaks including smallpox, yellow fever, the flu epidemic, severe acute respiratory syndrome (SARS) and the Ebola virus.

Sources: Virginia Tech Undergraduate Historical Review, Centres for Disease Control and Prevention, GAVI, Historic UK