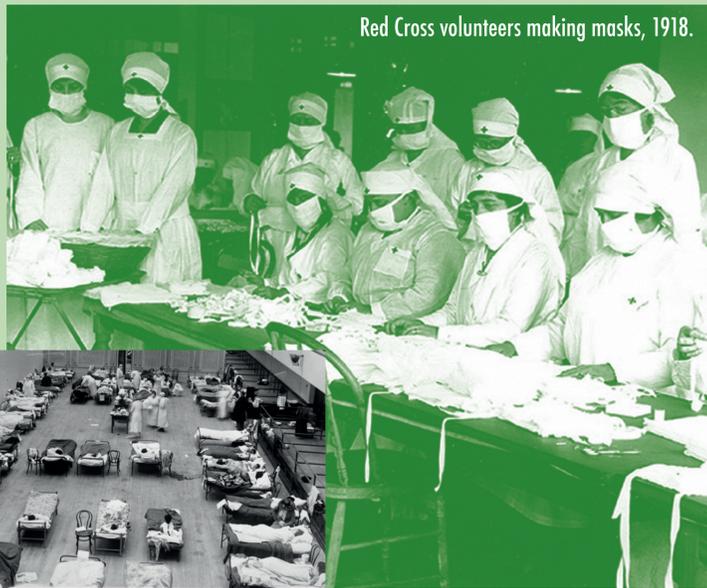


Worldwide Pandemics: Comparison of Effects

Between about 1347 and 2019, there have been 16 pandemic events with at least 135 million deaths (Table 1). The two that probably had the most impact were The Black Death and the Spanish Flu.

The Black Death (1347–1352)	75,000,000
The Great Plague of Seville (1647–1652)	2,000,000
The Russian Cholera Pandemic (1852–1860)	1,000,000
Global Flu Pandemic (1889–1890)	1,000,000
Spanish Flu (1918–1920)	50,000,000
Asian Flu (1957–1958)	2,000,000
Hong Kong Flu (1968–1969)	1,000,000
COVID-19 (2019-??)	1,300,000 (at end Oct 2020)

Table 1. Pandemic events from the 14th to the 21st century, including estimated global death tolls.



Red Cross volunteers making masks, 1918.

Influenza ward, 1918.

Economic Effects: The Black Death

- Ended the population growth in Europe, killing approximately 33% of the population.
- Resulted in an important effect on the relationship between land-owning lords and the peasants who worked for them.
- High mortality resulted in workforce reduction; peasants demanded higher wages. Productivity and demand for commodities increased.
- Post-plague, traders entered into greater competitive marketing at home and abroad; the most successful were made rich by trading in wool, textiles and silk.
- Did not cause an economic depression in England. The economic welfare of the surviving population improved.
- Post-plague, there was a distribution of wealth and an improvement in the economic health of England.

Economic Effects: Spanish Flu

- Economics of the period 1918–1920 were bound up with WW1, making it difficult to tease out the effects from the pandemic alone.
- Negative effects worldwide were relatively short-lived. In the USA and Europe, per capita income and society recovered to give some economic boom before the global downturn of the 1930s.
- Businesses declined, especially the retail grocery sector. Many service-based industries suffered significant losses.
- As bed-rest was prescribed, there was an increased demand for beds, mattresses and bedpans, suppliers of which benefitted. Beneficiaries also included the medicine and pharmacy sectors.
- Labour supply was greatly reduced, exacerbated by the losses of young men during WW1, resulting in increased wages and productivity. There was little shutdown of economic activity in either Europe or the USA.



Early public health

Healthcare Systems: The Black Death

- In Mediaeval Europe, scientific ideas, technologies and practices lagged behind those of other societies, especially the Islamic world.
- Healing involved a combination of local wisdom of healing herbs and town-based practitioners (e.g. apothecaries, barber-surgeons and university-trained physicians) with little sharing of ideas between groups. Hospitals had been established in Europe, mainly as a response to the injured from the Crusades.
- Sanitation and hygiene were poor, and disease transmission poorly understood.
- The earliest attempts at disease control were believed to be in Venice and some other major ports which adopted a detention of 40 days against ships entering their harbours (quarantine).

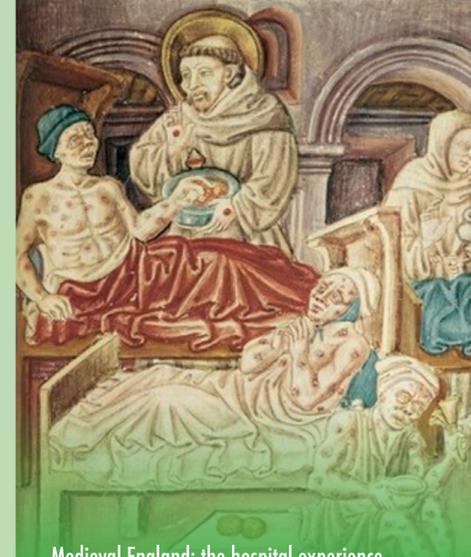
- Sanitary efforts were adopted but with little coordination, and these included getting rid of vermin (rats), and cleaning domestic areas.
- Doctors did not so much treat as tend the sick because little was available in the way of treatments. They were totally unprepared for any significant outbreak of any kind. The basis of Mediaeval medicine was the Humoral Theory (the four Humors being Earth, Fire, Water and Air), astronomy and astrology, and blood-letting.
- Many doctors died or fled, and those recognised as 'Plague Doctors' were quarantined after treating their sick.
- The Black Death led to some developments in public health, an emergence of the concept of medical ethics, and the evolution of hospital roles.



Burying Plague victims, 1352.



Merchant of death: the flea



Medieval England: the hospital experience

Healthcare Systems: Spanish Flu

- While many bacteria had been identified as a cause of illness, the viral cause of influenza had not been recognised; it was thought to be caused by *Haemophilus influenzae*. No laboratory tests were available to detect, isolate and characterise influenza viruses until the early 1930s. There were no treatments, and face masks were the only PPE.
- In early 1918, influenza was not a reportable disease; by the autumn, systems were beginning to be put in place to monitor influenza-like activity. This helped to track the extent and spread of the disease.
- The healthcare system was seriously understaffed due to WW1 losses and staff falling sick. It was boosted by the use of medical school graduates, retired medical personnel, student nurses and dentists who were authorised as physicians.
- Hospitals lengthened working hours, discharged early those who were least sick, and admitted only emergencies. Halls, offices, porches and tents were used to house patients, and there were shortages of linen, mattresses, bedpans and gowns. 'Bed warehouses' were created from parish halls, gymnasiums and other facilities to house the increasing numbers of sick. Most patients were 'treated' at home with only supportive care.
- The poor, working class and those in under-developed countries suffered worst, exacerbated by crowded living conditions and little or no access to healthcare. Healthcare was fragmented and centred on industrialised countries, with doctors working for themselves or for charities and religious establishments.
- Social distancing measures were introduced, but frequently too late to be really effective due to lack of shared knowledge of outbreaks.
- Post pandemic, the 1920s saw many governments embracing socialised medicine – healthcare for all, free at the point of access. Russia was the first country to introduce this, followed by Germany, France and the UK. The USA introduced a similar system based around personal insurance.
- 1919: Opening in Vienna of an international bureau for fighting epidemics, the forerunner of the World Health Organization (WHO).
- 1920s: Many countries revamped their Healthcare Ministries. In the following decades, some joined-up thinking of healthcare developed, with epidemiology and disease reporting.