

# Pandemic and Historical Pandemics

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# Definition

- A pandemic is an epidemic of infectious disease that has spread through human populations across a large region; for instance multiple continents, or even worldwide. A widespread endemic disease that is stable in terms of how many people are getting sick from it is not a pandemic.
- A pandemic is an epidemic occurring on a scale which crosses international boundaries, usually affecting a large number of people.
- Throughout history there have been a number of pandemics, such as smallpox and tuberculosis. More recent pandemics include the HIV pandemic as well as the 1918 and 2009 H1N1 pandemics.

# Stages

- The World Health Organisation (WHO) has a six-stage classification that describes the process by which a novel influenza virus moves from the first few infections in humans through to a pandemic. This starts with the virus mostly infecting animals, with a few cases where animals infect people, then moves through the stage where the virus begins to spread directly between people, and ends.

# **Pandemics and Notable Epidemics Through History**

- **HIV and AIDS**

- HIV originated in Africa, and spread to the United States via Haiti between 1966 and 1972. AIDS is currently a pandemic, with infection rates as high as 25% in southern and eastern Africa. In 2006 the HIV prevalence rate among pregnant women in South Africa was 29.1%. Effective education about safer sexual practices and bloodborne infection precautions training have helped to slow down infection rates in several African countries sponsoring national education programmes. Infection rates are rising again in Asia and the Americas. AIDS death toll in Africa may reach 90—100 million by 2025.

# Plague

1. Antonine Plague, 165—180. Possibly smallpox brought to the Italian peninsula by soldiers returning from the Near East; it killed a quarter of those infected, and up to five million in all. At the height of a second outbreak, the Plague of Cyprian (251— 266), which may have been the same disease, 5,000 people a day were said to be dying in Rome.
2. Plague of Justinian, from 541 to 750, was the first recorded outbreak of the bubonic plague. It started in Egypt, and reached Constantinople the following spring, killing (according to the Byzantine chronicler Procopius) 10,000 a day at its height, and perhaps 40% of the city's inhabitants. The plague went on to eliminate a quarter to a half of the human population that it struck throughout the known world. It caused Europe's population to drop by around 50% between 550 and 700.

3. Black Death, from 1347 to 1453. The total number of deaths worldwide is estimated at 75 million people. Eight hundred years after the last outbreak, the plague returned to Europe. Starting in Asia, the disease reached Mediterranean and western Europe in 1348 (possibly from Italian merchants fleeing fighting in Crimea), and killed an estimated 20 to 30 million Europeans in six years; a third of the total population, and up to a half in the worst-affected urban areas. It was the first of a cycle of European plague epidemics that continued until the 18th century. There were more than 100 plague epidemics in Europe in this period.

4. The third plague pandemic started in China in 1855, and spread to India, where 10 million people died. During this pandemic, the United States saw its first outbreak: the San Francisco plague of 1900—1904. Today, isolated cases of plague are still found in the western United States.

# Cholera

1. First cholera pandemic 1816—1826. Previously restricted to the Indian subcontinent, the pandemic began in Bengal, then spread across India by 1820. 10,000 British troops and countless Indians died during this pandemic. It extended as far as China, Indonesia (where more than 100,000 people succumbed on the island of Java alone) and the Caspian Sea before receding. Deaths in India between 1817 and 1860 are estimated to have exceeded 15 million persons. Another 23 million died between 1865 and 1917. Russian deaths during a similar period exceeded 2 million.
2. Second cholera pandemic 1829—1851. Reached Russia, Hungary (about 100,000 deaths) and Germany in 1831, London in 1832 (more than 55,000 persons died in the United Kingdom), France, Canada (Ontario), and United States (New York) in the same year, and the Pacific coast of North America by 1834. A two-year outbreak began in England and Wales in 1848 and claimed 52,000 lives. It is believed that over 150,000 Americans died of cholera between 1832 and 1849.

3. Third pandemic 1852—1860. Mainly affected Russia, with over a million deaths. Throughout Spain, cholera caused more than 236,000 deaths in 1854—55. It claimed 200,000 lives in Mexico
4. Fourth pandemic 1863-1875. Spread mostly in Europe and Africa. At least 30,000 of the 90,000 Mecca pilgrims fell victim to the disease. Cholera claimed 90,000 lives in Russia in 1866. In 18GG, there was an outbreak in North America.
5. Fifth pandemic 1881—1896. The 1883—1887 epidemic cost 250,000 lives in Europe and at least 50,000 in Americas. Cholera claimed 267,890 lives in Russia (1892); 120,000 in Spain; 90,000 in Japan and (30,000 in Persia).
6. Sixth pandemic 1962—66. Began in Indonesia, called El Tor after the strain, and reached Bangladesh in 1963, India in 1964, and the USSR in 1966.

# Influenza

1. The Greek physician Hippocrates, the "Father of Medicine" first described influenza in 412 BC.
2. The first influenza pandemic was recorded in 1580 and since then influenza pandemics occurred every 10 to 30 years.
3. The "Asian Flu", 1957—58. An H2N2 virus caused about 70,000 deaths in the United States. First identified in China in late February 1957, the Asian flu spread to the United States by June 1957. It caused about 2 million deaths globally.
4. The "Hong Kong Flu", 1968—69. An H3N2 caused about 34,000 deaths in the United States. This virus was first detected in Hong Kong in early 1968, and spread to the United States later that year. This pandemic of 1968 and 1969 killed approximately one million people worldwide. Influenza A (H3N2) viruses still circulate today.

# Typhus

1. Typhus is sometimes called "camp fever" because of its pattern of flaring up in times of strife. (It is also known as "gaol fever" and "ship fever", for its habits of spreading wildly in cramped quarters, such as jails and ships.)
2. During the Thirty Years' War (1618—1648), about 8 million Germans were killed by bubonic plague and typhus. The disease also played a major role in the destruction of Napoleon's Grande Armée in Russia in 1812. During the retreat from Moscow, more French military personnel died of typhus than were killed by the Russians. Of the 450,000 soldiers who crossed the Neman on 25 June 1812, less than 40,000 returned. More military personnel were killed from 1500—1914 by typhus than from military action. In early 1813 Napoleon raised a new army of 500,000 to replace his Russian losses. In the campaign of that year, over 219,000 of Napoleon's soldiers died of typhus.

# Smallpox

1. smallpox is a highly contagious disease caused by the Variola virus. The disease killed an estimated 400,000 Europeans Per Year during the closing years of the 18th century, During the 20th century, it is estimated that smallpox was responsible for 300—500 million deaths. As recently as early 1950s an estimated 50 million cases of smallpox occurred in the world each year.
2. After successful vaccination campaigns throughout the 19th and 20th centuries, the WHO certified the eradication of smallpox in December 1979. To this day, smallpox is the only human infectious disease to have been completely eradicated, and one of two infectious viruses ever to be eradicated.

# Measles

1. Measles is an endemic disease, meaning that it has been continually present in a community, and many people develop resistance. In populations that have not been exposed to measles, exposure to a new disease can be devastating. In 1529, a measles outbreak in Cuba killed two-thirds of the natives who had previously survived smallpox. The disease had ravaged Mexico, Central America, and the Inca civilization.

# Tuberculosis.

1. One—third of the world's current population has been infected with *Mycobacterium tuberculosis*, and new infections occur at a rate of one per second. About 5—10% of these latent infections will eventually progress to active disease, which, if left untreated, kills more than half of its victims. Annually, 8 million people become ill with tuberculosis, and 2 million people die from the disease worldwide. In the 19th century, tuberculosis killed an estimated one-quarter of the adult population of Europe; by 1918 one in six deaths in France were still caused by TB.
2. During the 20th century, tuberculosis killed approximately 100 million people. TB is still one of the most important health problems in the developing world.

# Leprosy

1. Leprosy, also known as Svopat's or Hansen's 'Disease, is caused by a bacillus, *Mycobacterium leprae*. It is a chronic disease with an incubation period of up to five years. Since 1985, 15 million people worldwide have been cured of leprosy.
2. Historically, leprosy has affected people since at least 600 BC
3. Leprosy outbreaks began to occur in Western Europe around 1000 AD
4. Numerous leprosaria, or leper hospitals, sprang up in the Middle Ages; Matthew Paris estimated that in the early 13th century there were 19,000 across Europe.

# Malaria

1. Malaria is widespread in tropical and subtropical regions, including parts of the Americas, Asia, and Africa. Each year, there are approximately 350—500 million cases of malaria. Drug resistance poses a growing problem in the treatment of malaria in the 21st century since resistance is now common against all classes of antimalarial drugs, except for the artemisinins.
2. Malaria was once common in most of Europe and North America, where it is now for all purposes non-existent. Malaria may have contributed to the decline of the Roman Empire. The disease became known as "Roman fever". *Plasmodium falciparum* became a real threat to colonists and indigenous people alike when it was introduced into the Americas along with the slave trade. Malaria devastated the Jamestown colony and regularly ravaged the South and Midwest.

# Yellow Fever

1. Yellow fever has been a source of several devastating epidemics, Cities as far north as New York, Philadelphia, and Boston were hit with epidemics. In 1793, one of the largest yellow fever epidemics in U•S• history killed as many as 5,000 people in Philadelphia—roughly Of the population. About half of the residents had fled the city, including President George Washington. In colonial times, West Africa became known as "the white man's grave" because of malaria and yellow fever.