

Bio & Terror Bible

EXPOSING THE COMING BIO-TERROR PANDEMIC

BIO**TERROR****BIBLE.COM**: Based on the ancient and recent history of worldwide pandemics, there will likely be another one in the very near future.

Title: Pandemic

Date: 2012

Source: Wikipedia

Abstract: A pandemic (from [Greek](#) πᾶν *pan* "all" + δῆμος *demos* "people") is an [epidemic](#) of [infectious disease](#) that is spreading 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. Further, [flu pandemics](#) generally exclude recurrences of [seasonal flu](#). Throughout history there have been a number of pandemics, such as [smallpox](#) and [tuberculosis](#). More recent pandemics include the [HIV](#) pandemic and the [H1n1 pandemic](#).

Definition and Stages

The [World Health Organization](#) (WHO) produce 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 with a pandemic when infections from the new virus have spread worldwide.

A disease or condition is not a pandemic merely because it is widespread or kills many people; it must also be infectious. For instance, [cancer](#) is responsible for many deaths but is not considered a pandemic because the disease is not infectious or contagious.

In a virtual press conference in May 2009 on the influenza pandemic Dr Keiji Fukuda, Assistant Director-General ad Interim for Health Security and Environment, WHO said "An easy way to think about pandemic ... is to say: a pandemic is a global outbreak. Then you might ask yourself: "What is a global outbreak"? Global outbreak means that we see both spread of the agent ... and then we see disease activities in addition to the spread of the virus."

In planning for a possible influenza pandemic the WHO published a document on pandemic preparedness guidance in 1999, revised in 2005 and in February 2009, defining phases and appropriate actions for each phase in an aide memoir entitled WHO pandemic phase descriptions and main actions by phase. The 2009 revision, including definitions of a pandemic and the phases leading to its declaration, were finalized in February 2009. The pandemic H1N1 2009 virus, was neither on the horizon at that time nor mentioned in the document. All versions of this document refer to influenza. The phases are defined by the spread of the disease; [virulence](#) and [mortality](#) are not mentioned in the current WHO definition, although these factors have previously been included ([Wikipedia, 2012](#)).

Title: Summary Of WHO Global Pandemic Phases (WHO Global Influenza Preparedness Plan, 2005)

Date: 2005

Source: [WHO](#)(World Health Organization)

Abstract:

Interpandemic Period

Phase 1. No new influenza virus subtypes have been detected in humans. An influenza virus subtype that has caused human infection may be present in animals. If present in animals, the risk of human infection or disease is considered to be low

Phase 2. No new influenza virus subtypes have been detected in humans. However, a circulating animal influenza virus subtype poses a substantial risk of human disease

Pandemic Alert Period

Phase 3. Human infection(s) with a new subtype but no human-to-human spread or at most rare instances of spread to a close contact

Phase 4. Small cluster(s) with limited human-to-human transmission but spread is highly localized, suggesting that the virus is not well adapted to humans

Phase 5. Larger cluster(s) but human-to-human spread is still localized, suggesting that the virus is becoming increasingly better adapted to humans but may not yet be fully transmissible (substantial pandemic risk)
Pandemic Period

Phase 6. Pandemic phase: increased and sustained transmission in the general population

Postpandemic Period

Return to the Interpandemic Period (Phase 1) ([WHO, 2005](#)).

Title: Current WHO Phase Of Pandemic Alert For Pandemic (H1N1) 2009

Date: 2009

Source: [WHO](#)(World Health Organization)

Abstract: In nature, influenza viruses circulate continuously among animals, especially birds. Even though such viruses might theoretically develop into pandemic viruses, in **Phase 1** no viruses circulating among animals have been reported to cause infections in humans.

In **Phase 2** an animal influenza virus circulating among domesticated or wild animals is known to have caused infection in humans, and is therefore considered a potential pandemic threat.

In **Phase 3**, an animal or human-animal influenza reassortant virus has caused sporadic cases or small clusters of disease in people, but has not resulted in human-to-human transmission sufficient to sustain community-level outbreaks. Limited human-to-human transmission may occur under some circumstances, for example, when there is close contact between an infected person and an unprotected caregiver. However, limited transmission under such restricted circumstances does not indicate that the virus has gained the level of transmissibility among humans necessary to cause a pandemic.

Phase 4 is characterized by verified human-to-human transmission of an animal or human-animal influenza reassortant virus able to cause "community-level outbreaks." The ability to cause sustained disease outbreaks in a community marks a significant upwards shift in the risk for a pandemic. Any country that suspects or has verified such an event should urgently consult with WHO so that the situation

can be jointly assessed and a decision made by the affected country if implementation of a rapid pandemic containment operation is warranted. Phase 4 indicates a significant increase in risk of a pandemic but does not necessarily mean that a pandemic is a forgone conclusion.

Phase 5 is characterized by human-to-human spread of the virus into at least two countries in one WHO region. While most countries will not be affected at this stage, the declaration of Phase 5 is a strong signal that a pandemic is imminent and that the time to finalize the organization, communication, and implementation of the planned mitigation measures is short.

Phase 6, the pandemic phase, is characterized by community level outbreaks in at least one other country in a different WHO region in addition to the criteria defined in **Phase 5**. Designation of this phase will indicate that a global pandemic is under way.

During the **post-peak period**, pandemic disease levels in most countries with adequate surveillance will have dropped below peak observed levels. The post-peak period signifies that pandemic activity appears to be decreasing; however, it is uncertain if additional waves will occur and countries will need to be prepared for a second wave.

Previous pandemics have been characterized by waves of activity spread over months. Once the level of disease activity drops, a critical communications task will be to balance this information with the possibility of another wave. Pandemic waves can be separated by months and an immediate “at-ease” signal may be premature.

In the **post-pandemic period**, influenza disease activity will have returned to levels normally seen for seasonal influenza. It is expected that the pandemic virus will behave as a seasonal influenza A virus. At this stage, it is important to maintain surveillance and update pandemic preparedness and response plans accordingly. An intensive phase of recovery and evaluation may be required ([WHO, 2009](#)).

World Timeline & History of Pandemics:

1. Plague of Athens (430-426 BC)

Title: Plague of Athens

Date: 430-426 BC

Agent: Unknown

Location: Athens (Greece)

Deaths: Unknown

Source: [Wikipedia](#)

Abstract: The Plague of Athens was a devastating [epidemic](#) which hit the [city-state](#) of [Athens](#) in ancient [Greece](#) during the second year of the [Peloponnesian War](#) (430 BC), when an Athenian victory still seemed within reach. It is believed to have entered Athens through [Piraeus](#), the city's port and sole source of food and supplies. The city-state of [Sparta](#), and much of the eastern Mediterranean, was also struck by the disease. The plague returned twice more, in 429 BC and in the winter of 427/6 BC ([Wikipedia, 2012](#)).

2. Antonine Plague (165–180 AD)

Title: Antonine Plague

Date: 165-180 AD

Agent: Unknown

Location: Rome (Italy)

Deaths: 5 Million

Source: [Wikipedia](#)

Abstract: The Antonine Plague, AD 165–180, also known as the Plague of [Galen](#), who described it, was an ancient [pandemic](#), either of [smallpox](#) or [measles](#), brought back to the [Roman Empire](#) by troops returning from campaigns in the [Near East](#). The epidemic may have claimed the life of [Roman emperor Lucius Verus](#), who died in 169 and was the co-regent of [Marcus Aurelius Antoninus](#), whose family name,

Antoninus, was given to the epidemic. The disease broke out again nine years later, according to the Roman historian [Dio Cassius](#), and caused up to 2,000 deaths a day in Rome, one quarter of those infected. Total deaths have been estimated at five million. The disease killed as much as one-third of the population in some areas and decimated the Roman army ([Wikipedia, 2012](#)).

3. Plague of Justinian (541-750 AD)

Title: Plague of Justinian

Date: 541-750 AD

Agent: Yersinia Pestis

Location: Constantinople (Turkey)

Deaths: 25 Million

Source: [Wikipedia](#)

Abstract: The Plague of Justinian was a [pandemic](#) that afflicted the [Eastern Roman Empire \(Byzantine Empire\)](#), including its capital [Constantinople](#), in 541–542 [AD](#). It was one of the greatest plagues in history. The most commonly accepted cause of the pandemic is [bubonic plague](#), which later became infamous for either causing or contributing to the [Black Death](#) of the 14th century. However, recent genetic studies of the bubonic plague germ, carried out from samples taken from skeletal remains in London by researchers from the University of Tübingen, suggest that the Justinian Plague (and others from antiquity) arose from either now-extinct strains of [Yersinia pestis](#) genetically distinct from the strain that broke out in the 14th century pandemic, or from pathogens entirely unrelated to bubonic plague. The plagues' social and cultural impact during this period is comparable to that of the Black Death. In the views of 6th century Western historians, it was nearly worldwide in scope, striking central and south Asia, North Africa and Arabia,[\[citation needed\]](#) and Europe as far north as Denmark and as far west as Ireland. Genetic studies point to [China](#) being the primary source of the contagion ([Wikipedia, 2012](#)).

4. Black Death (1348-1350)

Title: Black Death

Date: 1348-1350

Agent: Yersinia Pestis

Location: Europe

Deaths: 75-100 Million

Source: [Wikipedia](#)

Abstract: The Black Death was one of the most devastating [pandemics](#) in [human history](#), peaking in [Europe](#) between 1348 and 1350. While there were several competing theories as to the [etiology](#) of the Black Death it has been conclusively proven via analysis of ancient DNA from plague victims in northern and southern Europe that the pathogen responsible is the [Yersinia pestis](#) bacteria. The Black Death is estimated to have killed 30–60 percent of Europe's population, reducing [world population](#) from an estimated 450 million to between 350 and 375 million in the 14th century. The aftermath of the plague created a series of religious, social and economic upheavals, which had profound effects on the course of [European history](#). It took 150 years for Europe's population to recover. The plague returned at various times, killing more people, until it left Europe in the 19th century ([Wikipedia, 2012](#)).

5. English Sweat (1485-1551)

Title: Sweating Sickness

Date: 1485-1551

Agent: Unknown

Location: Europe

Deaths: Unknown (Likely Millions)

Source: [Wikipedia](#)

Abstract: Sweating sickness, also known as "English sweating sickness" or "English sweate" ([Latin](#): sudor anglicus), was a mysterious and highly virulent disease that struck [England](#), and later continental [Europe](#), in a series of epidemics beginning in 1485. The last outbreak occurred in 1551, after which the disease apparently vanished. The onset of symptoms was dramatic and sudden, with **death often**

occurring within hours. Its cause remains unknown ([Wikipedia, 2012](#)).

6. Crusades Typhus Pandemic (1489)

Title: Crusades Typhus Pandemic

Date: 1489

Agent: Typhus

Location: Europe

Deaths: 20,000

Source: [Wikipedia](#)

Abstract: Emerging during the [Crusades](#), it had its first impact in Europe in 1489, in Spain. During fighting between the Christian Spaniards and the Muslims in [Granada](#), the Spanish lost 3,000 to war casualties, and 20,000 to typhus ([Wikipedia, 2012](#)).

7. South American Smallpox Pandemic (1518-1530)

Title: South American Smallpox Pandemic

Date: 1518-1530

Agent: Smallpox

Location: Mexico & Peru

Deaths: 150,000

Source: [Wikipedia](#)

Abstract: Half the native population of [Hispaniola](#) in 1518 was killed by smallpox. Smallpox also ravaged [Mexico](#) in the 1520s, killing 150,000 in [Tenochtitlán](#) alone, including the emperor, and [Peru](#) in the 1530s, aiding the European conquerors ([Wikipedia, 2012](#)).

8. French Typhus Pandemic (1528)

Title: French Typhus Pandemic

Date: 1528

Agent: Typhus

Location: Italy

Deaths: 18,000

Source: [Wikipedia](#)

Abstract: In 1528, the French lost 18,000 troops in [Italy](#), and lost supremacy in Italy to the Spanish ([Wikipedia, 2012](#)).

9. Cuba Measles Pandemic (1529)

Title: Cuba Measles Pandemic

Date: 1529

Agent: Measles

Location: Cuba

Deaths: 2/3 of Cuban Population

Source: [Wikipedia](#)

Abstract: In 1529, a measles outbreak in [Cuba](#) killed two-thirds of the natives who had previously survived smallpox ([Wikipedia, 2012](#)).

10. Balkans Typhus Pandemic (1542)

Title: Balkans Typhus Pandemic

Date: 1542

Agent: Typhus

Location: Balkans (Eastern Europe)

Deaths: 30,000

Source: [Wikipedia](#)

Abstract: In 1542, 30,000 soldiers died of typhus while fighting the [Ottomans](#) in the Balkans ([Wikipedia, 2012](#)).

11. South American Measles Pandemic (1600-1699)

Title: South American Measles Pandemic

Date: 1600-1699

Agent: Measles

Location: Mexico

Deaths: 2 Million

Source: [Wikipedia](#)

Abstract: Measles killed a further two million Mexican natives in the 17th century. ([Wikipedia, 2012](#)).

12. Native American Smallpox Pandemic (1618-1619)

Title: Native American Smallpox Pandemics

Date: 1618-1619

Agent: Smallpox

Location: North America

Deaths: Millions

Source: [Wikipedia](#)

Abstract: In 1618–1619, smallpox wiped out 90% of the Massachusetts Bay Native Americans ([Wikipedia, 2012](#)).

13. Thirty Years War (1618-1648)

Title: Thirty Years War

Date: 1618-1648

Agent: Yersinia Pestis & Typhus

Location: Germany

Deaths: 8 Million

Source: [Wikipedia](#)

Abstract: During the [Thirty Years' War](#) (1618–1648), about 8 million Germans were killed by bubonic plague and typhus fever. [Pestilence](#) of several kinds raged among combatants and civilians in Germany and surrounding lands from 1618 to 1648. Many features of the war spread disease. These included troop movements, the influx of [soldiers](#) from foreign countries, and the shifting locations of battle fronts. In addition, the displacement of [civilian](#) populations and the overcrowding of [refugees](#) into cities led to both disease and famine. Information about numerous [epidemics](#) is generally found in local chronicles, such as [parish](#) registers and [tax](#) records, that are often incomplete and may be exaggerated. The chronicles do show that epidemic [disease](#) was not a condition exclusive to war time, but was present in many parts of Germany for several decades prior to 1618. However, when the Danish and Imperial armies met in [Saxony](#) and [Thuringia](#) during 1625 and 1626, disease and infection in local communities increased. Local chronicles repeatedly referred to "head disease", "Hungarian disease", and a "spotted" disease identified as [typhus](#). After the [Mantuan War](#), between France and the Habsburgs in Italy, the northern half of the Italian peninsula was in the throes of a [bubonic plague](#) epidemic (see [Italian Plague of 1629–1631](#)). During the unsuccessful [siege of Nuremberg](#), in 1632, civilians and soldiers in both the Swedish and Imperial armies succumbed to typhus and [scurvy](#). Two years later, as the Imperial army pursued the defeated Swedes into southwest Germany, deaths from epidemics were high along the [Rhine](#) River. [Bubonic plague](#) continued to be a factor in the war. Beginning in 1634, [Dresden](#), [Munich](#), and smaller German communities such as [Oberammergau](#) recorded large numbers of plague casualties. In the last decades of the war, both [typhus](#) and [dysentery](#) had become endemic in Germany ([Wikipedia, 2012](#)).

14. Italian Plague (1629–1631)

Title: Italian Plague

Date: 1629–1631

Agent: Yersinia Pestis

Location: Milan (Italy)

Deaths: 280, 000

Source: [Wikipedia](#)

Abstract: The Italian Plague of 1629–1631 was a series of outbreaks of [bubonic plague](#) which occurred from [1629](#) through [1631](#) in northern [Italy](#). This [epidemic](#), often referred to as Great Plague of Milan, claimed the lives of approximately 280,000 people, with the cities of the [Lombardy](#) and [Veneto regions](#) experiencing particularly high death rates. This episode is considered one of the last outbreaks of the centuries-long [pandemic](#) of bubonic plague which began with the [Black Death](#). [German](#) and [French](#) troops carried the plague to the city of [Mantua](#) in 1629, as a result of troop movements associated with the [Thirty Years' War](#) (1618–1648).^{[[citation needed](#)]} [Venetian](#) troops, infected with the disease, retreated into northern and central Italy, spreading the infection. In October 1629, the plague reached [Milan](#), Lombardy's major commercial center. Although the city initiated effective public health measures, including [quarantine](#) and limiting the access of German soldiers and trade goods, the plague smoldered. A major outbreak in March 1630 was due to relaxed health measures during the [carnival](#) season. This was followed by a second wave in the spring and summer of 1631. Overall, Milan suffered approximately 60,000 fatalities out of a total population of 130,000. East of Lombardy, the Republic of Venice was infected in 1630–31. The city of [Venice](#) was severely hit, with recorded casualties of 46,000 people out of a population of 140,000. Some historians believe the drastic loss of life, and its impact on commerce, ultimately resulted in the downfall of Venice as a major commercial and political power. The [papal](#) city of [Bologna](#) lost an estimated 15,000 citizens to the plague, with neighboring smaller cities of [Modena](#) and [Parma](#) also being heavily affected. This outbreak of plague also spread north into [Tyrol](#), an alpine region of western [Austria](#) and northern Italy. Later outbreaks of bubonic plague in Italy include the city of [Florence](#) in 1630–33 and the areas surrounding [Naples](#), [Rome](#) and [Genoa](#) in 1656–57 ([Wikipedia, 2012](#)).

15. The Great Plague of London (1665–1666)

Title: Great Plague of London

Date: 1665-1666

Agent: Yersinia Pestis

Location: England (United Kingdom)

Deaths: 100, 000

Source: [Wikipedia](#)

Abstract: The Great Plague was the last major epidemic of the [bubonic plague](#) to occur in the [Kingdom of England](#) (modern day [United Kingdom](#)). It happened within the centuries-long time period of the Second pandemic, an extended period of intermittent bubonic plague epidemics which began in Europe in 1347, the first year of the "[Black Death](#)" and lasted until 1750. The Great Plague killed an estimated 100,000 people, about 20% of London's population. [Bubonic plague](#) is a disease caused by the [Yersinia pestis bacterium](#) which is usually transmitted through the bite of an infected flea, the prime [vector](#) for Y. pestis ([Wikipedia, 2012](#)).

16. Great Plague of Marseille (1720)

Title: Great Plague of Marseille

Date: 1720

Agent: Yersinia Pestis

Location: France

Deaths: 100,000

Source: [Wikipedia](#)

Abstract: The Great Plague of Marseille was the last of the significant European outbreaks of [bubonic plague](#). Arriving in [Marseille, France](#) in 1720, the disease killed 100,000 people in the city and the surrounding provinces. However, Marseille recovered quickly from the plague outbreak. Economic activity took only a few years to recover, as trade expanded to the West Indies and Latin America. By 1765, the growing population was back at its pre-1720 level. ([Wikipedia, 2012](#)).

17. Australia & New Zealand Smallpox Pandemics (1770)

Title: Australia & New Zealand Smallpox Pandemics

Date: 1770

Agent: Smallpox

Location: Australia & New Zealand

Deaths: 1/2 of Native Population (Admitted)

Source: [Wikipedia](#)

Abstract: Smallpox devastated the native population of [Australia](#), killing around 50% of [Indigenous Australians](#) in the early years of British colonisation.^[33] It also killed many [New Zealand Māori](#) ([Wikipedia, 2012](#)).

18. Russian Plague (1770-1772)

Title: Russian Plague

Date: 1770-1772

Agent: Yersinia Pestis

Location: Russia

Deaths: 1/3 of Moscow

Source: [Wikipedia](#)

Abstract: The [Russian plague](#) epidemic of 1770—1772, also known as the Plague of 1771, was the last massive outbreak of plague in central [Russia](#), claiming between 52 and 100 thousand lives in Moscow alone (1/6 to 1/3 of its population). The [bubonic plague epidemic](#) that originated in the [Moldovan](#) theatre of the [1768–1774 Russian-Turkish war](#) in January 1770 swept northward through [Ukraine](#) and central Russia, peaking in Moscow in September 1771 and causing the [Plague Riot](#). The epidemic reshaped the map of Moscow, as new cemeteries were established beyond the 18th century city limits ([Wikipedia, 2012](#)).

19. North American Smallpox Epidemic (1775-1782)

Title: North American Smallpox Epidemic

Date: 1775-1782

Agent: Smallpox

Location: North America

Deaths: Unknown (Likely Millions)

Source: [Wikipedia](#)

Abstract: The 1775–1782 North American smallpox epidemic was a [smallpox epidemic](#) that spread across most of the continent of North America. The epidemic coincided with the years of the [American Revolutionary War](#) (1775–1782), which was gripping much of the continent from the colonies, western frontiers, and southern Canada. By its end the epidemic had spread as far west as the pacific coast, as far north as Alaska and as far south as Mexico, infecting virtually every part of the continent. Though no certain statistics exist it is estimated to have killed more than 145,000 people.

It is not known how or where the outbreak began, but in 1775 it was already raging through British-occupied [Boston](#) and among the Continental Army [invasion of Canada](#). During Washington's [siege of Boston](#) the disease broke out among both Continental and British camps. Many escaped slaves who had fled to the British lines in the South likewise contracted the virus and died.

The epidemic was not limited to the colonies on the Eastern seaboard, nor to the areas ravaged by hostilities. The outbreak spread deep into the South, including Texas. From 1778-1779 New Orleans was especially hard hit due to its densely populated urban area. By 1779 the disease had spread to Mexico and would cause the deaths of tens of thousands. The epidemic spread through the Great Plains, likely through the travels of the [Shoshone](#) Indian tribes. Beginning in 1780 it had reached the [Pueblos](#) of the territory comprising present day [New Mexico](#). It also showed up in the interior trading posts of the [Hudson's Bay Company](#) in 1782. It reached nearly every corner of the Continent, including the Far West

and northwestern coast, Western Canada, and even Alaska. It is estimated to have killed nearly 11,000 Native Americans in the Western area of present-day [Washington](#), reducing the population from 37,000 to 26,000 in just seven years ([Wikipedia, 2012](#)).

20. Yellow Fever Epidemic of 1793 (1793)

Title: Yellow Fever Epidemic

Date: 1793

Agent: Yellow Fever

Location: Philadelphia, Pennsylvania

Deaths: 4,044

Source: [Wikipedia](#)

Abstract: During the Yellow Fever Epidemic of 1793 in [Philadelphia](#), [Pennsylvania](#), there were 4044 people listed in the official register of deaths between August 1 and November 9. The vast majority of them died of the fever, making the epidemic in the city of 50,000 people one of the most severe in United States' history ([Wikipedia, 2012](#)).

21. Spanish Yellow Fever Pandemic (1800-1899)

Title: Spanish Yellow Fever Pandemic

Date: 1800-1899

Agent: Yellow Fever

Location: Spain

Deaths: 300, 300

Source: [Wikipedia](#)

Abstract: Approximately 300,000 people are believed to have died from yellow fever in Spain during the 19th century ([Wikipedia, 2012](#)).

22. Worldwide Tuberculosis Pandemic (1800-1899)

Title: Worldwide Tuberculosis Pandemic

Date: 1800-1899

Agent: Tuberculosis

Location: Worldwide

Deaths: 1/4 of Europe (Hundreds of Millions)

Source: [Wikipedia](#)

Abstract: 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. By the late 19th century, 70 to 90% of the urban populations of Europe and North America were infected with M. tuberculosis, and about 40% of working-class deaths in cities were from TB ([Wikipedia, 2012](#)).

23. Napoleonic Wars (1812-1813)

Title: Napoleonic Wars

Date: 1812-1813

Agent: Typhus

Location: France & Russia

Deaths: 1 Million?

Source: [Wikipedia](#)

Abstract: Typhus played a major role in the destruction of [Napoleon's Grande Armée](#) in Russia in 1812. Felix Markham thinks that 450,000 soldiers crossed the [Neman](#) on 25 June 1812, of whom less than 40,000 recrossed in anything like a recognizable military formation. 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 were to die of typhus ([Wikipedia, 2012](#)).

24. First Cholera Pandemic (1816-1826)

Title: First Cholera Pandemic

Date: 1817-1824

Agent: Cholera

Location: Asia

Deaths: Unknown (Likely Millions)

Source: [Wikipedia](#)

Abstract: 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. The first cholera pandemic (1817-1824), also known as the first Asiatic cholera pandemic or Asiatic cholera, began near [Calcutta](#) and spread throughout Southeast Asia to the Middle East, eastern Africa and the Mediterranean coast. While [cholera](#) had spread across India many times previously, this outbreak went further; it reached as far as [China](#) and the [Mediterranean Sea](#) before receding. Hundreds of thousands of people died as a result of this [pandemic](#), including many [British](#) soldiers, which attracted European attention. This was the first of several cholera pandemics to sweep through Asia and Europe during the 19th and 20th centuries. This first pandemic spread over an unprecedented range of territory, affecting almost every country in Asia ([Wikipedia, 2012](#)).

25. Second Cholera Pandemic (1829-1849)

Title: Second Cholera Pandemic

Date: 1829-1849

Agent: Cholera

Location: India, Europe & North America

Deaths: Unknown (Likely Millions)

Source: [Wikipedia](#)

Abstract: The second cholera pandemic (1829-1849), also known as the Asiatic Cholera Pandemic, was a [cholera](#) pandemic that reached from India to Europe, Great Britain and the Americas. This pandemic began, like the first, with outbreaks along the [Ganges River](#) delta in India. From there the disease spread along trade routes to cover most of India. By 1828 the disease had traveled to China and reached the southern tips of the [Ural Mountains](#) in 1829. It reached England in December 1831: appearing in [Sunderland](#), [Gateshead](#) and [Newcastle](#). In London, the disease claimed 6,536 victims; in Paris, 20,000 died (out of a population of 650,000), with about 100,000 deaths in all of France. In 1832 the epidemic reached Russia (see [Cholera Riots](#)), [Quebec](#), [Ontario](#), [Detroit](#) and [New York](#). It reached the Pacific coast of North America between 1832 and 1834. The Second Cholera Pandemic reached Russia (see [Cholera Riots](#)), 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 ([Wikipedia, 2012](#)).

26. North American Smallpox Epidemic (1837–1838)

Title: N. American Smallpox Epidemic

Date: 1837–1838

Agent: Smallpox

Location: North America

Deaths: Unknown (Likely Millions)

Source: [Wikipedia](#)

Abstract: The smallpox epidemic that ravaged the people of the [Great Plains](#) in 1837 and 1838 was believed to have begun in spring of 1837 when a deckhand became ill aboard an [American Fur Company](#)

[steamboat](#), the S.S. St. Peter. The steamboat traveling up the Missouri River to [Fort Union](#) from St. Louis, docked at [Fort Clark](#) near the two earth-lodge villages of the [Mandan](#) people on June 18, 1837. The disease spread to the Mandan people.^[2] In July 1837, the Mandan numbered no more than 2,000, by October that number had dwindled to 138. On August 11, Francis Chadron, a trader at Fort Clark, wrote, "I Keep no a/c of the dead, as they die so fast it is impossible." By the time the S.S. St. Peter made it to Fort Union several deck hands had died, but only Jacob Halsey, an American Fur Company clerk, showed visible signs of the disease. In an attempt to stop the spread of the disease fort personnel performed primitive inoculations. Pus from Halsey's skin eruptions were used to inoculate approximately thirty Native American women and several white men living in or around the fort. **Within two weeks, the women who received the inoculations began dying from the disease.** As the disease reached a peak at Fort Union bands of Native Americans continued to arrive at the fort for trade. Later, a longboat was sent to [Fort McKenzie](#) via the [Marias River](#). At Fort McKenzie the disease spread among the [Blackfoot](#) people housed there. The epidemic continued to spread into the Great Plains killing thousands during the fall of 1837, but largely died out that winter. In the end, it is estimated that two-thirds of the Blackfoot population died along with half of the [Assiniboines](#) and [Arikaras](#), a third of the [Crows](#), and a quarter of the [Pawnees](#). Later, a longboat was sent to [Fort McKenzie](#) via the [Marias River](#). At Fort McKenzie the disease spread among the [Blackfoot](#) people housed there. The epidemic continued to spread into the Great Plains killing thousands during the fall of 1837, but largely died out that winter. In the end, it is estimated that two-thirds of the Blackfoot population died along with half of the [Assiniboines](#) and [Arikaras](#), a third of the [Crows](#), and a quarter of the [Pawnees](#).

Claims by Churchill

The Investigative Committee of the Standing Committee on Research Misconduct at the [University of Colorado at Boulder](#) reviewed a claim by [Ward Churchill](#), comparing to the cited source his claim that in 1837 the [United States Army](#) deliberately infected [Mandan](#) Indians by distributing blankets that had been exposed to smallpox, and reported "Professor Churchill therefore misrepresents what Thornton says." Most other historians who have looked at the same event disagree with Churchill's interpretation of the historical evidence, and believe no deliberate introduction of smallpox occurred at the time and place Churchill claimed it had ([Wikipedia, 2012](#)).

27. Canadian Typhus Epidemic (1847)

Title: Typhus Epidemic of 1847

Date: 1847

Agent: Typhus

Location: Canada

Deaths: 20,000+

Source: [Wikipedia](#)

Abstract: The typhus epidemic of 1847 was an outbreak of [epidemic typhus](#) caused by a massive [Irish emigration](#) in 1847, during the [Great Famine](#), aboard crowded and disease-ridden "[coffin ships](#)". In [Canada](#), more than 20 000 people died from 1847 to 1848, with many quarantined in [fever sheds](#) in [Grosse Isle](#), [Montreal](#), [Kingston, Ontario](#), [Toronto](#) and [St. John, New Brunswick](#) ([Wikipedia, 2012](#)).

28. Hawaiian Pandemics (1848-1849)

Title: Hawaiian Pandemics

Date: 1848-1849

Agent: Measles, Whooping Cough & Yersinia Pestis

Location: Hawaii (South Pacific)

Deaths: 40,000

Source: [Wikipedia](#)

Abstract: As late as 1848–49, as many as 40,000 out of 150,000 [Hawaiians](#) are estimated to have died of [measles](#), [whooping cough](#) and [influenza](#). ([Wikipedia, 2012](#)).

29. Third Cholera Pandemic (1852-1860)

Title: Third Cholera Pandemic

Date: 1852-1860

Agent: Cholera

Location: North America, Europe, Middle East, India & Asia

Deaths: Unknown (Likely Millions)

Source: [Wikipedia](#)

Abstract: The Third Cholera Pandemic (1852-1860) was the third major outbreak of [cholera](#) originating in India in the nineteenth century that reached far beyond its borders. In Russia, more than one million people died of cholera. In 1853-1854, the epidemic in London claimed over 10,000 lives, and there were 23,000 deaths for all of Great Britain. This pandemic was considered to have the highest fatalities of the 19th-century epidemics. Like the earlier pandemics, cholera spread from the Ganges delta of India. It had high fatalities among populations in Asia, Europe, Africa and North America. In 1854, which was considered the worst year, 23,000 people died in Great Britain. That year, the British physician [John Snow](#), who was working in a poor area of London, identified contaminated water as the means of transmission of the disease. He had mapped the cases of cholera in the [Soho](#) area in London, and noted a cluster of cases near a water pump in one neighborhood. To test his theory, he convinced officials to remove the pump handle, and the number of cholera cases in the area immediately declined. His breakthrough helped eventually bring the epidemic under control. Because of his insight and patient testing, he is considered the father of epidemiology. The Third Cholera Pandemic mainly affected [Russia](#), with over a million deaths. In 1852, cholera spread east to [Indonesia](#) and later invaded China and [Japan](#) in 1854. The Philippines were infected in 1858 and [Korea](#) in 1859. In 1859, an outbreak in Bengal again led to the transmission of the disease to [Iran](#), [Iraq](#), [Arabia](#) and Russia. Throughout [Spain](#), cholera caused more than 236,000 deaths in 1854–55. It claimed 200,000 lives in [Mexico](#) ([Wikipedia, 2012](#)).

30. Third Plague Pandemic (1855-1959)

Title: Third Plague Pandemic

Date: 1855-1959

Agent: Yersinia Pestis

Location: China & India

Deaths: 12 Million

Source: [Wikipedia](#)

Abstract: Third Pandemic is the designation of a major [Bubonic plague pandemic](#) that began in the [Yunnan](#) province in [China](#) in 1855. This episode of bubonic plague spread to all inhabited continents, and ultimately killed more than 12 million people in [India](#) and China alone. According to the [World Health Organization](#), the pandemic was considered active until 1959, when worldwide casualties dropped to 200 per year. [Bubonic plague](#) is an infectious disease that is widely thought to have caused several [epidemics](#) or [pandemics](#) throughout history, including two previous pandemics commonly designated as the [Plague of Justinian](#) and the [Black Death](#) ([Wikipedia, 2012](#)).

31. Fourth Cholera Pandemic (1863-1879)

Title: The Fourth Cholera Pandemic

Date: 1863-1879

Agent: Cholera

Location: Europe & Africa

Deaths: Unknown (Likely Millions)

Source: [Wikipedia](#)

Abstract: The Fourth Cholera Pandemic (1863-1879) was the fourth major pandemic of [cholera](#) in the century. It began in the Ganges delta of the Bengal region, from where Muslim pilgrims carried it to Mecca. That year 30,000 of the 90,000 Mecca pilgrims died in the epidemic. Cholera spread throughout the Middle East. It also was carried to Russia, Europe, Africa and North America, in each case spreading from port cities and along inland waterways.

The Fourth Cholera Pandemic 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 1866, there was an outbreak in North America. It killed some 50,000 Americans ([Wikipedia, 2012](#)).

32. Fiji Measles Pandemic (1875)

Title: Fiji Measles Pandemic

Date: 1875

Agent: Measles

Location: Fiji (South Pacific)

Deaths: 40,000

Source: [Wikipedia](#)

Abstract: In 1875, measles killed over 40,000 [Fijians](#) ([Wikipedia, 2012](#)).

33. Fifth Cholera Pandemic (1881-1896)

Title: Fifth Cholera Pandemic

Date: 1881-1896

Agent: Cholera

Location: India, Asia, Africa & Europe

Deaths: Unknown (Likely Millions)

Source: [Wikipedia](#)

Abstract: The fifth cholera pandemic (1881-1896) was the fifth major international outbreak of [cholera](#) in the nineteenth century starting in India. It spread throughout Asia and Africa, and reached parts of France, Germany, Russia, and South America. The [1892](#) outbreak in [Hamburg, Germany](#) was the only major [European](#) outbreak; about 8,600 people died in that city. Although many residents held the city government responsible for the virulence of the epidemic, it continued with practices largely unchanged. This was the last serious European cholera outbreak of the century. The epidemic was so serious in [Rome](#) that [Pope Leo XIII](#) authorized building a [hospice](#) inside the [Vatican](#) for afflicted residents. That building was torn down in 1996 to make way for construction of the [Domus Sanctae Marthae](#). The Fifth Cholera Pandemic 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 60,000 in [Persia](#). In 1892, cholera contaminated the water supply of [Hamburg](#), and caused 8606 deaths ([Wikipedia, 2012](#)).

34. Asiatic Flu (1889-1890)

Title: Asiatic Flu

Date: 1889-1890

Agent: Influenza

Location: Asia & North America

Deaths: 1 Million

Source: [Wikipedia](#)

Abstract: The "[Asiatic Flu](#)", 1889–1890, was first reported in May 1889 in [Bukhara](#), Uzbekistan. By October, it had reached [Tomsk](#) and the [Caucasus](#). It rapidly spread west and hit [North America](#) in December 1889, South America in February–April 1890, India in February–March 1890, and Australia in March–April 1890. It was purportedly caused by the [H2N8](#) type of flu virus. It had a very high attack and [mortality rate](#). About 1 million people died in this pandemic" ([Wikipedia, 2012](#)).

35. Sixth Cholera Pandemic (1899-1923)

Title: Sixth Cholera Pandemic

Date: 1899-1923

Agent: Cholera

Location: India, Middle East, North Africa, Europe & Russia

Deaths: Unknown (Likely Millions)

Source: [Wikipedia](#)

Abstract: Sixth Cholera Pandemic(1899-1923) was a major outbreak of [cholera](#) beginning in India, where

it killed more than 800,000 people, and spreading to the Middle East, North Africa, Eastern Europe and Russia. The last cholera outbreak in the United States was in 1910-1911 when the steamship [Moltke](#) brought infected people to New York City from [Naples](#). Vigilant health authorities isolated the infected on [Swinburne Island](#), built in the nineteenth century as a quarantine facility. Eleven people died, including a health care worker at the island hospital. The Sixth Cholera Pandemic had little effect in Europe because of advances in [public health](#), but Russia was badly affected again (more than 500,000 people dying of cholera during the first quarter of the 20th century). The sixth pandemic killed more than 800,000 in India. The 1902-1904 cholera epidemic claimed over 200,000 lives in the [Philippines](#). 27 epidemics were recorded during pilgrimages to [Mecca](#) from the 19th century to 1930, and more than 20,000 pilgrims died of cholera during the 1907–08 Hajj ([Wikipedia, 2012](#)).

36. Worldwide Tuberculosis Pandemic (1900-1999)

Title: Worldwide Tuberculosis Pandemic

Date: 1900-1999

Agent: Tuberculosis

Location: Worldwide

Deaths: 100 Million

Source: [Wikipedia](#)

Abstract: During the 20th century, tuberculosis killed approximately 100 million people ([Wikipedia, 2012](#)).

37. World War I (1914-1918)

Title: World War I Typhus Pandemic

Date: 1914-1918

Agent: Typhus

Location: Europe

Deaths: 150,000

Source: [Wikipedia](#)

Abstract: During [World War I](#), typhus epidemics killed over 150,000 in [Serbia](#) ([Wikipedia, 2012](#)).

38. Russian Typhus Pandemic (1918-1922)

Title: Russian Typhus Pandemic

Date: 1918-1922

Agent: Typhus

Location: Russia

Deaths: 3 Million

Source: [Wikipedia](#)

Abstract: There were about 25 million infections and 3 million deaths from [epidemic typhus](#) in [Russia](#) from 1918 to 1922. Typhus also killed numerous prisoners in the [Nazi concentration camps](#) and Soviet prisoner of war camps during World War II. More than 3.5 million [Soviet POWs](#) died in the Nazi custody out of 5.7 million ([Wikipedia, 2012](#)).

39. The Spanish Flu (1918-1919)

Title: 1918 Flu Pandemic

Date: 1918-1919

Agent: Influenza

Location: North America, Pacific Islands & Arctic

Deaths: 50-100 Million

Source: [Wikipedia](#)

Abstract: The 1918 flu pandemic (the "Spanish flu") was an [influenza pandemic](#), and the first of the two pandemics involving [H1N1 influenza virus](#) (the second was the [2009 flu pandemic](#), an outbreak of [swine flu](#)). It was an unusually severe and deadly pandemic that spread across the world. Historical and [epidemiological](#) data are inadequate to identify the geographic origin. Most victims were healthy young

adults, in contrast to most influenza outbreaks, which predominantly affect juvenile, elderly, or weakened patients. The flu pandemic was implicated in the outbreak of [encephalitis lethargica](#) in the 1920s. The pandemic lasted from June 1918 to December 1919, spreading even to the [Arctic](#) and remote Pacific islands. Between 50 and 100 million died, making it one of the deadliest [natural disasters](#) in human history. Even using the lower estimate of 50 million people, 3% of the world's population (which was 1.86 billion at the time) died of the disease. Some 500 million, or 27%, were infected. Tissue samples from frozen victims were used to reproduce the virus for study. This research concluded, among other things, that the virus kills through a [cytokine storm](#) (overreaction of the body's [immune system](#)), which perhaps explains its unusually severe nature and the concentrated age profile of its victims. The strong immune system reactions of young adults ravaged the body, whereas the weaker immune systems of children and middle-aged adults resulted in fewer deaths. The "[Spanish flu](#)", 1918–1919. First identified early in March 1918 in US troops training at [Camp Funston, Kansas](#). By October 1918, it had spread to become a worldwide pandemic on all continents, and eventually infected about one-third of the [world's population](#) (or 500 million persons). Unusually deadly and virulent, it ended nearly as quickly as it began, vanishing completely within 18 months. In six months, some 50 million were dead; some estimates put the total of those killed worldwide at over twice that number. About 17 million died in India, 675,000 in the United States and 200,000 in the [UK](#). The virus was recently reconstructed by scientists at the [CDC](#) studying remains preserved by the Alaskan [permafrost](#). The [H1N1](#) virus has a small, but crucial structure that is similar to the Spanish Flu ([Wikipedia, 2012](#)).

40. Asian Flu (1957-1958)

Title: Influenza A Virus Subtype H2N2

Date: 1957-1958

Agent: Influenza

Location: North America & Asia

Deaths: 2 Million

Source: [Wikipedia](#)

Abstract: 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. The [category 2](#) Asian flu pandemic outbreak of influenza A virus originated in [China](#) in early 1956, and lasted until 1958. Some authors believe it originated from a mutation in [wild ducks](#) combining with a pre-existing human strain. Other authors are less certain. The virus was first identified in [Guizhou](#). It spread to [Singapore](#) in February 1957, [\[9\]](#) reached [Hong Kong](#) by April, and the US by June. The death toll in the US was about 69,800. Estimates of worldwide deaths caused by this pandemic varies widely depending on source, ranging from one to four million, with WHO settling on "about two million". Asian flu was of the H2N2 subtype (a notation that refers to the configuration of the [hemagglutinin](#) and [neuraminidase proteins](#) in the virus) of type A influenza, and an [influenza vaccine](#) was developed in 1957 to contain its outbreak. The Asian flu strain later evolved via [antigenic shift](#) into [H3N2](#), which caused a milder pandemic from 1968 to 1969. Both the H2N2 and H3N2 pandemic strains contained avian influenza virus RNA segments. "While the pandemic human influenza viruses of 1957 (H2N2) and 1968 (H3N2) clearly arose through reassortment between human and avian viruses, the influenza virus causing the 'Spanish flu' in 1918 appears to be entirely derived from an avian source (Belshe 2005)" ([Wikipedia, 2012](#)).

41. Seventh Cholera Pandemic (1961-1991)

Title: Seventh Cholera Pandemic

Date: 1961-1991

Agent: Cholera

Location: India, North Africa, Europe & Russia

Deaths: Unknown (Likely Millions)

Source: [Wikipedia](#)

Abstract: The seventh cholera pandemic was the seventh major outbreak of [cholera](#) and occurred from the years 1961 to the 1970s and has continued (though much diminished) to the present. The outbreak began in [Indonesia](#), called [El Tor](#) after the strain, and reached [Bangladesh](#) in 1963, [India](#) in 1964, and the

[USSR](#) in 1966. From [North Africa](#) it spread into [Italy](#) by 1973. In the late 1970s, there were small outbreaks in [Japan](#) and in the [South Pacific](#). There were also many reports of a cholera outbreak near [Baku](#) in 1972, but information about it was suppressed in the USSR. In 1971, the number of reported cases reported worldwide was 155,000. In 1991, it reached 570,000. The spread of the disease was helped by modern transportation and mass migrations. Mortality rates, however, dropped markedly as governments began modern curative and preventative measures. The usual mortality rate of 50% dropped to 10% by the 1980s and less than 3% by the 1990s. The Seventh Cholera Pandemic was the seventh major outbreak of [cholera](#) and occurred from the years 1961 to the 1970s and has continued (though much diminished) to the present. The outbreak began in [Indonesia](#), called [El Tor](#) after the strain, and reached [Bangladesh](#) in 1963, [India](#) in 1964, and the [USSR](#) in 1966. From [North Africa](#) it spread into [Italy](#) by 1973. In the late 1970s, there were small outbreaks in [Japan](#) and in the [South Pacific](#). There were also many reports of a cholera outbreak near [Baku](#) in 1972, but information about it was suppressed in the USSR. In 1971, the number of reported cases reported worldwide was 155,000. In 1991, it reached 570,000 ([Wikipedia, 2012](#)).

42. Hong Kong Flu (1968-1969)

Title: Hong Kong Flu

Date: 1968-1969

Agent: Influenza

Location: Hong Kong (China)

Deaths: 1 Million

Source: [Wikipedia](#)

Abstract: The Hong Kong Flu was a [category 2 flu pandemic](#) whose outbreak in 1968 and 1969 killed an estimated one million people worldwide. It was caused by an [H3N2](#) strain of the [influenza A virus](#), descended from [H2N2](#) through [antigenic shift](#), a [genetic](#) process in which [genes](#) from multiple subtypes [reassorted](#) to form a new virus. The first record of the outbreak in [Hong Kong](#) appeared on 13 July 1968. By the end of July 1968, extensive outbreaks were reported in Vietnam and Singapore. Despite the fatality of the 1957 [Asian Flu](#) in China, little improvement had been made regarding the handling of such [epidemics](#). [The Times](#) newspaper was actually the first source to sound alarm regarding this new possible [pandemic](#). By September 1968, the flu reached [India](#), [Philippines](#), northern Australia and Europe. That same month, the virus entered California from returning [Vietnam War troops](#) but did not become widespread in the US until December 1968. It would reach Japan, Africa and South America by 1969. The outbreak in Hong Kong, where density is about 500 people per acre, reached maximum intensity in 2 weeks, lasting 6 weeks in total from July to December 1968, however worldwide deaths from this virus peaked much later, in December 1968 and January 1969. By that time, public health warnings and virus descriptions were issued in the scientific and medical journals. In comparison to other pandemics, the Hong Kong flu yielded a low death rate, with a [case-fatality ratio](#) below 0.5% making it a category 2 disease on the [Pandemic Severity Index](#). The pandemic infected an estimated 500,000 Hong Kong residents, 15% of the population. In the United States, approximately 33,800 people died. The same virus returned the following years: a year later, in late 1969 and early 1970, and in 1972. 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 ([Wikipedia, 2012](#)).

43. Swine Flu Pandemic (2009)

Title: 2009 Flu Pandemic

Date: 2009

Agent: Influenza

Location: Worldwide

Deaths: 14, 286

Source: [Wikipedia](#)

Abstract: The 2009 flu pandemic or swine flu was an [influenza pandemic](#), and the second of the two pandemics involving [H1N1 influenza virus](#) (the first of them was the [1918 flu pandemic](#)), albeit in a new

version. First described in April 2009, the virus appeared to be a new strain of H1N1 which resulted when a previous triple [reassortment](#) of bird, swine and human flu viruses further combined with a Eurasian pig flu virus, leading to the term "[swine flu](#)" to be used for this pandemic. Unlike most strains of influenza, H1N1 does not disproportionately infect adults older than 60 years; this was an unusual and characteristic feature of the H1N1 [pandemic](#). Even in the case of previously very healthy persons, a small percentage will develop [pneumonia](#) or [acute respiratory distress syndrome](#) (ARDS). This manifests itself as increased breathing difficulty and typically occurs 3–6 days after initial onset of flu symptoms.[\[5\]\[6\]](#) The pneumonia caused by flu can be either direct viral pneumonia or a secondary bacterial pneumonia. In fact, a November 2009 [New England Journal of Medicine](#) article recommends that flu patients whose chest X-ray indicates pneumonia receive both antivirals and antibiotics. In particular, it is a warning sign if a child (and presumably an adult) seems to be getting better and then relapses with high fever, as this relapse may be bacterial pneumonia. Initially coined an "outbreak", the stint began in the state of [Veracruz](#), Mexico, with evidence that there had been an ongoing epidemic for months before it was officially recognized as such. The Mexican government closed most of [Mexico City](#)'s public and private facilities in an attempt to contain the spread of the virus; however, it continued to spread globally, and clinics in some areas were overwhelmed by infected people. In June, the [World Health Organization](#) (WHO) and the [U.S. Centers for Disease Control and Prevention](#) (CDC) stopped counting cases and declared the outbreak a [pandemic](#). Despite being informally called "swine flu", the H1N1 flu virus cannot be spread by eating pork or pork products; similar to other influenza viruses, it is typically contracted by person to person transmission through respiratory droplets. Symptoms usually last 4–6 days. [Antivirals](#) ([oseltamivir](#) or [zanamivir](#)) were recommended for those with more severe symptoms or those in an at-risk group. The pandemic began to taper off in November 2009, and by May 2010, the number of cases was in steep decline. On 10 August 2010, the Director-General of the World Health Organization, [Margaret Chan](#), announced the end of the H1N1 pandemic, and announced that the H1N1 influenza event has moved into the post-pandemic period. According to the latest WHO statistics (July 2010), the virus has killed more than 18,000 people since it appeared in April 2009, however they state that the total mortality (including deaths unconfirmed or unreported) from the H1N1 strain is "unquestionably higher". Critics claimed the WHO had exaggerated the danger, spreading "fear and confusion" rather than "immediate information". The WHO began an investigation to determine whether it had "frightened people unnecessarily". A flu followup study done in September 2010, found that "the risk of most serious complications was not elevated in adults or children." In an August 5, 2011 PLoS ONE article, researchers estimated that the 2009 H1N1 global infection rate was 11% to 21%, lower than what was previously expected ([Wikipedia, 2012](#)).