

Millions of people perished in the plague that struck Medieval Europe in the 14th century. It is reported that as much as 25 million or about a third of Europe's total population died. Deaths were quick with people dying in 2 to 5 days. Entire towns were wiped out. On occasion, there were not enough survivors remaining to bury the dead.

Black Death entered Europe by sea in 1347 when trading ships docked at the Sicilian port of Messina after a long journey through the Black Sea. People who gathered on the docks to greet the ships were met with a horrifying surprise: most sailors were dead or gravely ill with fever, unable to keep food down and in pain. Strangest of all, they were covered in black boils, oozing with pus and blood that gave their illness its name: the "Black Death."

### **What caused the Black Plague?**

Yersinia pestis slide

Yersinia pestis is the bacteria that caused the Black Plague. This is the bacteria under a microscope. (It is stained green here so we can easily see it.) Notice its shape.

### **How did this bacteria infect people?**

In the LAKE region of Central Asia, the Yersinia pestis bacteria lived in the blood of wild rodents or rats.

A drought or an earthquake changed the balance of nature so that the rodents carrying the bacteria were driven from its natural habitat in search for food. This began its deadly exodus.

Mongolian Army slide

Mongolian armies moving about the empire with their supply wagons of grain and other food attracted infected rats and their fleas. Merchant caravans passing through plague-infested Central Asia by 1330s brought the rats and fleas to China's shipping ports. Rats got on board the trading ships and spread to other cities.

Shipping Trade route image

The plague migrated, carried in the blood stream of rats. Fleas that fed on these rats bit humans and other rats and disease spread, along the trade routes from China.

Insert arrow slide

How did the bacteria jump from rodent to human?

Here we have the bacterium Yersinia pestis in the rodent's blood stream. A flea bites this infected rat, taking in blood. Bacteria starts replicating inside flea gut, in time, blocking it. The flea starves and starts aggressive feeding behavior, jumping onto other hosts like humans and other rodents. Biting the new hosts then transmits the bacteria.

The infection got transmitted among human beings via body fluid and respiratory exposure.

Hurling dead in Caffa Slide

Genoa was one of Italy's greatest trading powers, establishing a center for the Asian caravan trade at the Black Sea port of Caffa (now part of Ukraine). In 1346, a dispute between the Mongols and the Genoese led to a small war.

During the siege of Caffa, the Mongolian soldiers got infected by the plague. In the first ever recorded act of biologic warfare, the Mongols were hurled their infected dead soldiers into the walled city, thus infecting the Genoans. Talk about biologic warfare!

Some Genoese merchants escaped from Caffa, but little did they know that the rats infected with the bacteria had come along as well. Many sailors on the ships died. Many other ships along the trade route, not only those from Caffa, were thought to have contributed to the spread of the plague as well.

Ships, rats, sick people

As the Europeans heard of the plague, the sailors and it's cargo were not allowed to enter European cities. No one would let them dock, except Messina. When they discovered illness aboard the ships, they ordered the ships to leave. Rats made their way ashore as the first mooring ropes were being tied. Even when the ships had to move on, this brief, but long enough for the Black Death to enter Europe.

Photos of the sick, buboes

Within one week, anyone who had contact with the sailors was dead, spreading throughout the city of Messina. It quickly spreads to surrounding country-side, and other ports.

A buboe is a greatly enlarged, tender, inflamed lymph node.

photo of Black Death's spread

Most people believed it was Hell on Earth. The dead had to be buried in burial pits hundreds at a time. The disease spread like wildfire, town after town.

photo of people bring dead, burying dead, collecting wagons

Here's a painting of families bringing their dead in coffins for burial. In London, wagons collected the dead.

Plague doctor slide

Plague doctors wore special clothing to protect themselves. Descriptions indicate that the gown was made from heavy fabric or leather and was usually waxed. The beak contained pungent substances like herbs or perfumes, thought at the time to purify the air and helpful in relieving the stench. The person also carries a pointer or rod to keep patients at a distance. (Library of Medicine)

Guy de Chauliac

This man, Chauliac, was the pope's personal doctor. He tended to the sick and survived the infection. In his written records, he identified 2 types of the plague:

Bubonic, with continuous fever but with carbuncles (or buboes) in armpits and groin, death occurring in 5 days.

Pneumonic, also with continuous fever but with spitting of blood, more infectious, with death occurring in 3 days.

During the plague, families were torn apart and villages were deserted. Businesses collapsed, states were bankrupted by loss of taxes. Survivors bore the guilt of surviving.

It seemed the plague would sit for several months then move on. By 1350, it had run it's course.

## Quarantine Slide

Several factors that affected the decline of the Plague include:

Quarantine - staying away from the infected

Improved Hygienic practices- more people washed, began to boil drinking water

Travel and Migration slowing- travel waned, people staying in own homes/communities

use of handkerchiefs soaked in oil covering mouth and nose

shift towards warmer temperatures

Other practices people thought warded off the Plague include: loud noises, charms, herbal tinctures, and use of fire to "clear air" of disease

In the late 19th century it was discovered that the fleas infected by the rats were responsible for the transmission to humans.

Does the bacteria that caused the Black Plague still exist today?

<http://medical-dictionary.thefreedictionary.com/Buboe>: a greatly enlarged, tender, inflamed lymph node

Guy de Chauliac, [http://en.wikipedia.org/wiki/Guy\\_de\\_Chauliac](http://en.wikipedia.org/wiki/Guy_de_Chauliac), March 17, 2014

BRIA 26 2 The Black Death A Catastrophe in Medieval Europe,

<http://www.crf-usa.org/bill-of-rights-in-action/bria-26-2-the-black-death-a-catastrophe-in-medieval-europe.html>,

March 1, 2014

Mongol Siege with Trebuchet, <http://contagions.wordpress.com/2012/06/28/plague-at-the-siege-of-caffa-1346/>,

3/17/14

Origins and Spread of the Black Death in Asia,

<http://historymedren.about.com/od/theblackdeath/ig/Spread-of-the-Black-Death/msAsiaBDa.htm>, 3/17/14

Post-Classical Era, [http://en.wikipedia.org/wiki/Postclassical\\_Era](http://en.wikipedia.org/wiki/Postclassical_Era). 3/17/14

The Bubonic Plague, <http://vs8.tripod.com/bubonic.htm>, 3/17/14

File: Man in Medieval Dress or Costume (38).jpg,

[http://commons.wikimedia.org/wiki/File:Man\\_in\\_Medieval\\_Dress\\_or\\_Costume\\_\(38\).JPG](http://commons.wikimedia.org/wiki/File:Man_in_Medieval_Dress_or_Costume_(38).JPG), 3/17/14

Medieval Sailing, [http://www.themedievalchronicle.com/knights\\_templar4.html](http://www.themedievalchronicle.com/knights_templar4.html), 3/17/14

Ring a Ring o' Roses, [http://en.wikipedia.org/wiki/Ring\\_a\\_Ring\\_o'\\_Roses](http://en.wikipedia.org/wiki/Ring_a_Ring_o'_Roses), 3/17/14

Guy de Chauliac, [http://en.wikipedia.org/wiki/Guy\\_de\\_Chauliac](http://en.wikipedia.org/wiki/Guy_de_Chauliac), March 17, 2014 BRIA 26 2 The Black Death A Catastrophe in Medieval Europe,

<http://www.crf-usa.org/bill-of-rights-in-action/bria-26-2-the-black-death-a-catastrophe-in-medieval-europe.html>,

March 1, 2014 Mongol Siege with Trebuchet,

<http://contagions.wordpress.com/2012/06/28/plague-at-the-siege-of-caffa-1346/>, 3/17/14 Origins and Spread of the

Black Death in Asia,

<http://historymedren.about.com/od/theblackdeath/ig/Spread-of-the-Black-Death/msAsiaBDa.htm>, 3/17/14

Post-Classical Era, [http://en.wikipedia.org/wiki/Postclassical\\_Era](http://en.wikipedia.org/wiki/Postclassical_Era). 3/17/14 The Bubonic Plague,

<http://vs8.tripod.com/bubonic.htm>, 3/17/14 File: Man in Medieval Dress or Costume (38).jpg,  
[http://commons.wikimedia.org/wiki/File:Man\\_in\\_Medieval\\_Dress\\_or\\_Costume\\_\(38\).JPG](http://commons.wikimedia.org/wiki/File:Man_in_Medieval_Dress_or_Costume_(38).JPG), 3/17/14 Medieval Sailing,  
[http://www.themedievalchronicle.com/knights\\_templar4.html](http://www.themedievalchronicle.com/knights_templar4.html), 3/17/14 Ring a Ring o' Roses,  
[http://en.wikipedia.org/wiki/Ring\\_a\\_Ring\\_o'\\_Roses](http://en.wikipedia.org/wiki/Ring_a_Ring_o'_Roses), 3/17/14 Mysteries of Vernacular,  
<https://www.youtube.com/watch?v=MBZBqNrsAPM>, 3/16/14 The Black Death - Worst plague in history (History Channel),  
<https://www.youtube.com/watch?v=kScxc9DPnY&feature=youtu.be&t=1m30s>, 3/16/14 The Black Death - Worst plague in history (History Channel) Part II, <http://youtu.be/sFUQCWghjWc>, 3/16/14 Secrets of the Black Death - by Nature Video, <https://www.youtube.com/watch?v=pRZYb2JI22g>, 3/16/14 How the Black Death Came to an End, <http://ic.galegroup.com/ic/suic/ReferenceDetailsPage/ReferenceDetailsWindow?displayGroupName=Reference&disableHighlighting=false&prodId=SUIC&action=e&windowstate=normal&catId=&documentId=GALE%7CEJ2181500192&mode=view&userGroupName=clov94514&jsid=30b5066db038807d6e65e28f0de3908d>, 3/16/14  
Biological Warfare at the 1346 Siege of Caffa, [http://wwwnc.cdc.gov/eid/article/8/9/01-0536\\_article.htm](http://wwwnc.cdc.gov/eid/article/8/9/01-0536_article.htm), 3/17/14 Big Era Five, <http://worldhistoryforusall.sdsu.edu/eras/era5.php>, 3/18/14