

The Black Death and COVID-19

**Are there
similarities?**

They both started in China

- The Black Death probably began about 1330
- Covid-19 probably began in 2019



By Los Angeles County Museum of Art - [1], Public Domain,
<https://commons.wikimedia.org/w/index.php?curid=1569183>

They both occurred in a time of high connectivity

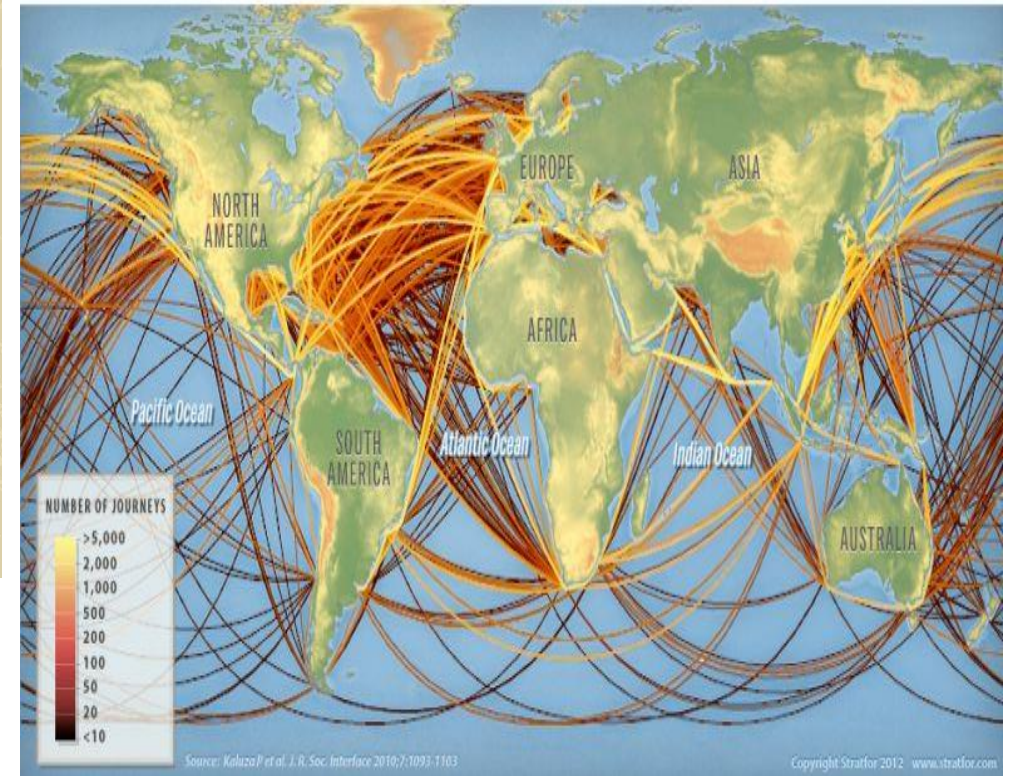
CHINA: 1330



SOURCE: <http://indianasocialstudies.com/on-the-road-with-marco-polo-from-hormuz-to-kashgar-from-educitment/>

The Silk Road: Conveying goods from China to Europe

GLOBAL SHIPPING ROUTES



THE WORLD: 2019

SOURCE: https://arubachamber.com/pages/wp-content/uploads/2019/03/doing_business_in_panama_cur-arv_def.pdf

THE CONNECTIVITY HAS SIMILARITIES

China's New Initiative, the Belt & Road, is a modern-day Silk Road

China's Belt & Road, 2019

- The project is often described as a 21st century SILK ROAD, made up of a "belt" of overland corridors and a maritime "road" of shipping lanes ...



LOOKING BACK 1279

The Spread of the Mongol Empire and The Yuan Dynasty

- 1279 -- Mongols pierced the Great Wall, took northern China and eventually defeated the Han (Chinese) of the Southern Song Dynasty
- Established the Yuan Dynasty of China
 - 1279 founded by Kublai Khan grandson of Genghis Khan head of Mongol invasion
 - Yuan Dynasty became the first non-Han (Chinese) dynasty to rule China
- Kublai Khan promoted commercial, scientific, and cultural growth
- **Commercial growth came through the Silk Road trade-network by**
 - Building the Mongol postal system
 - Constructing infrastructure such as roads
 - Providing loans that financed trade caravans
 - Producing and encouraging the circulation of paper banknotes
- Yuan Dynasty lasted until 1368 when Chinese Ming Dynasty defeated the Mongols

KUBLAI KHAN



SOURCE: https://en.wikipedia.org/wiki/Kublai_Khan

Mongol Empire (1206-1368)

The Largest
Empire in History
of the World

Included China
and
Tributary States



1346

The Black Death

Comes
during a Time of
Globalization

Plague Begins in a
Genoese Trading
Post called Kaffa



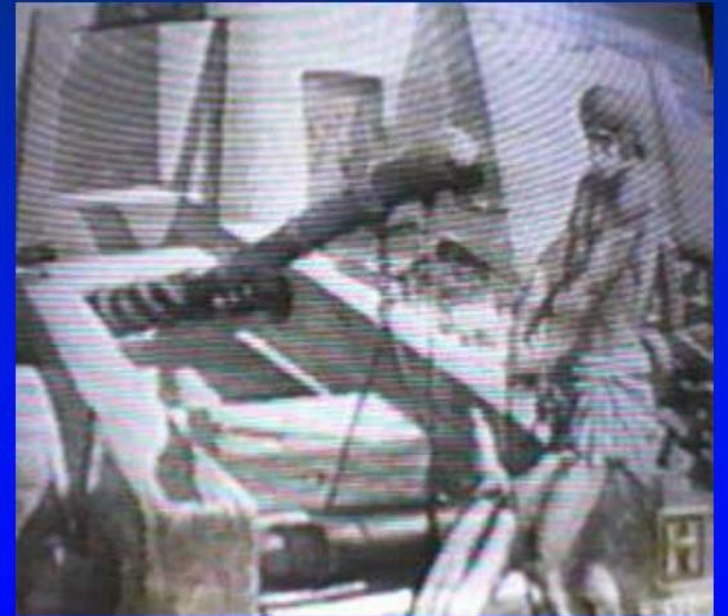
SOURCE: <http://indianasocialstudies.com/on-the-road-with-marco-polo-from-hormuz-to-kashgar-from-educitment/>

Kaffa and the Black Death

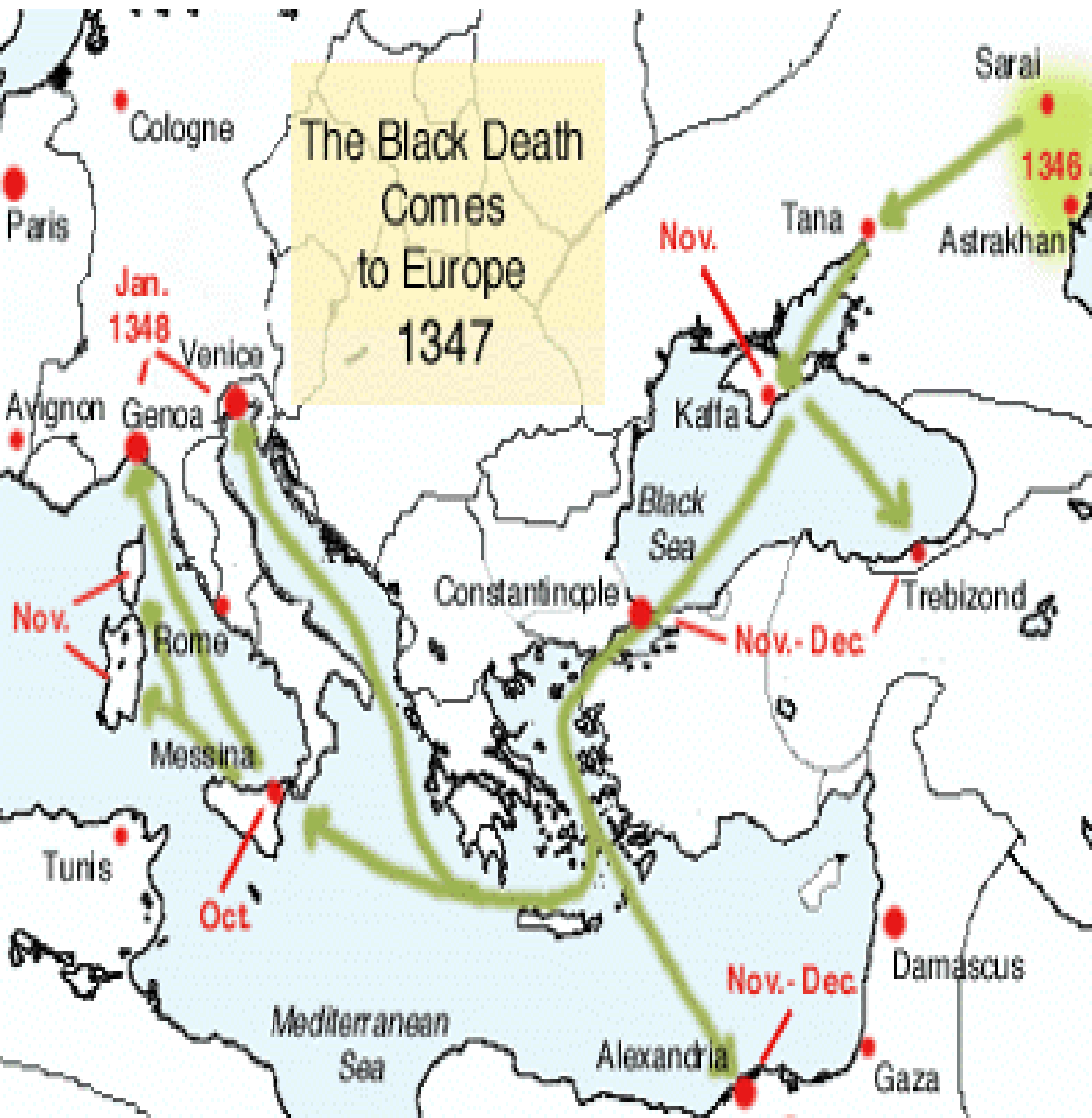
- In 1347
- The Black Death may have been introduced to Europe by the Mongol Army that was besieging Kaffa, located on the Crimea Sea
- At the siege of Kaffa, the Black Death was already inflicting deaths in the Mongol Army
- During the siege, the Mongol army catapulted infected corpses over the city walls of Kaffa to infect the inhabitants
- The Genoese traders in Kaffa fled, spreading the plague throughout the Mediterranean and then into the Italian mainland, whence it spread north

History of Biological Warfare

■ 14th Century: Plague at Kaffa



BIOLOGICAL WARFARE SPREADS BLACK DEATH TO ITALY



- A 14th-century account by the Genoese Gabriele de' Mussi indicates the Black Death reached Europe from the Crimea as the result of a biological warfare attack.
- Based on published translations of the de' Mussi manuscript, other 14th-century accounts of the Black Death, and secondary scholarly literature, Mark Wheelis of University of Calif. concludes that the claim that biological warfare was used at Caffa (Kaffa) provides the best explanation of the entry of plague into the city but not necessarily into Europe.

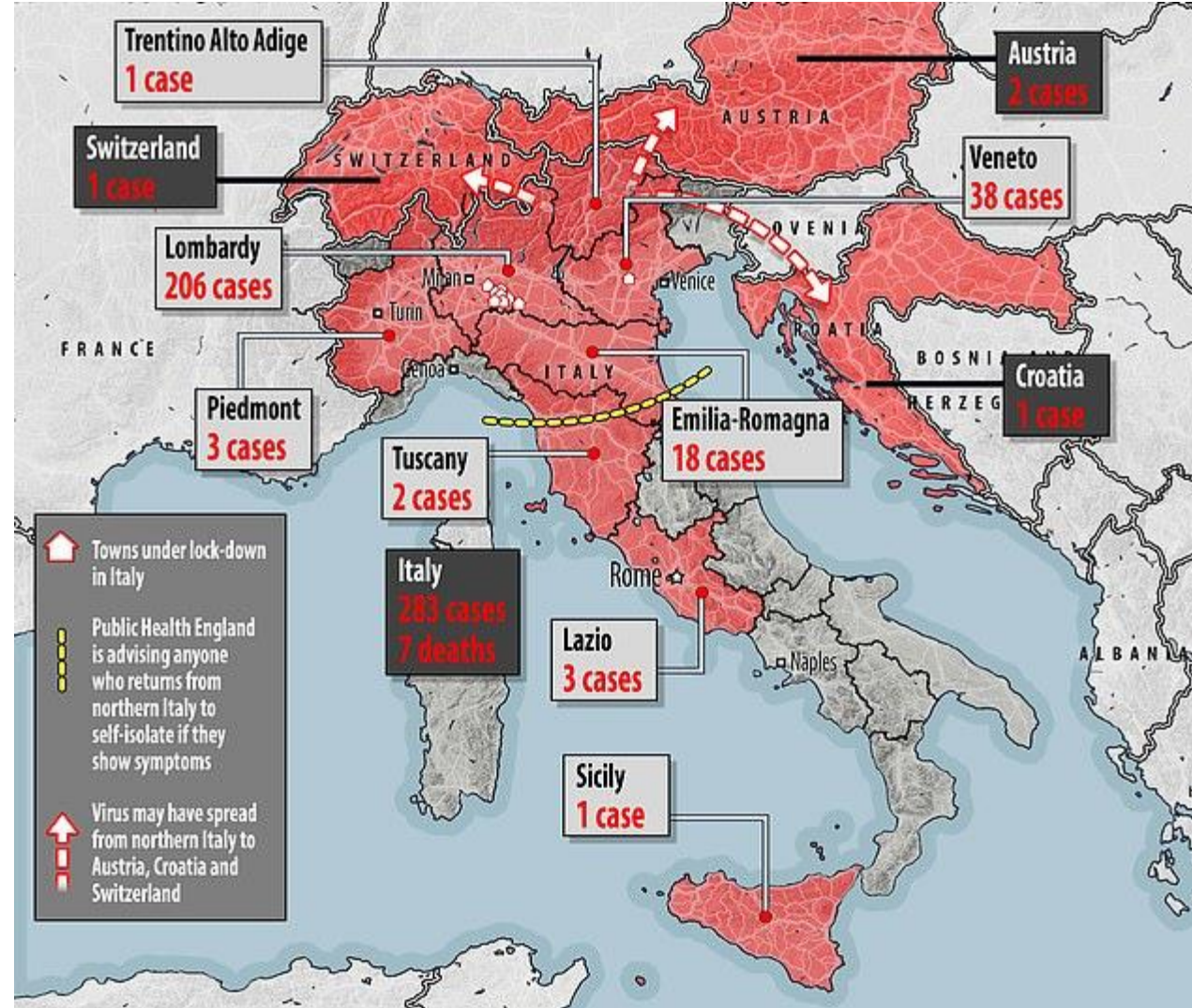
Article Citations

Highlight and copy the desired format.

EID	Wheelis M. Biological Warfare at the 1346 Siege of Caffa. <i>Emerg Infect Dis.</i> 2002;8(9):971-975. https://dx.doi.org/10.3201/eid0809.010536
AMA	Wheelis M. Biological Warfare at the 1346 Siege of Caffa. <i>Emerging Infectious Diseases.</i> 2002;8(9):971-975. doi:10.3201/eid0809.010536.
APA	Wheelis, M. (2002). Biological Warfare at the 1346 Siege of Caffa. <i>Emerging Infectious Diseases</i> , 8(9), 971-975. https://dx.doi.org/10.3201/eid0809.010536 .

**COVID -19
comes to Iran
(Persia) and to
Italy:**

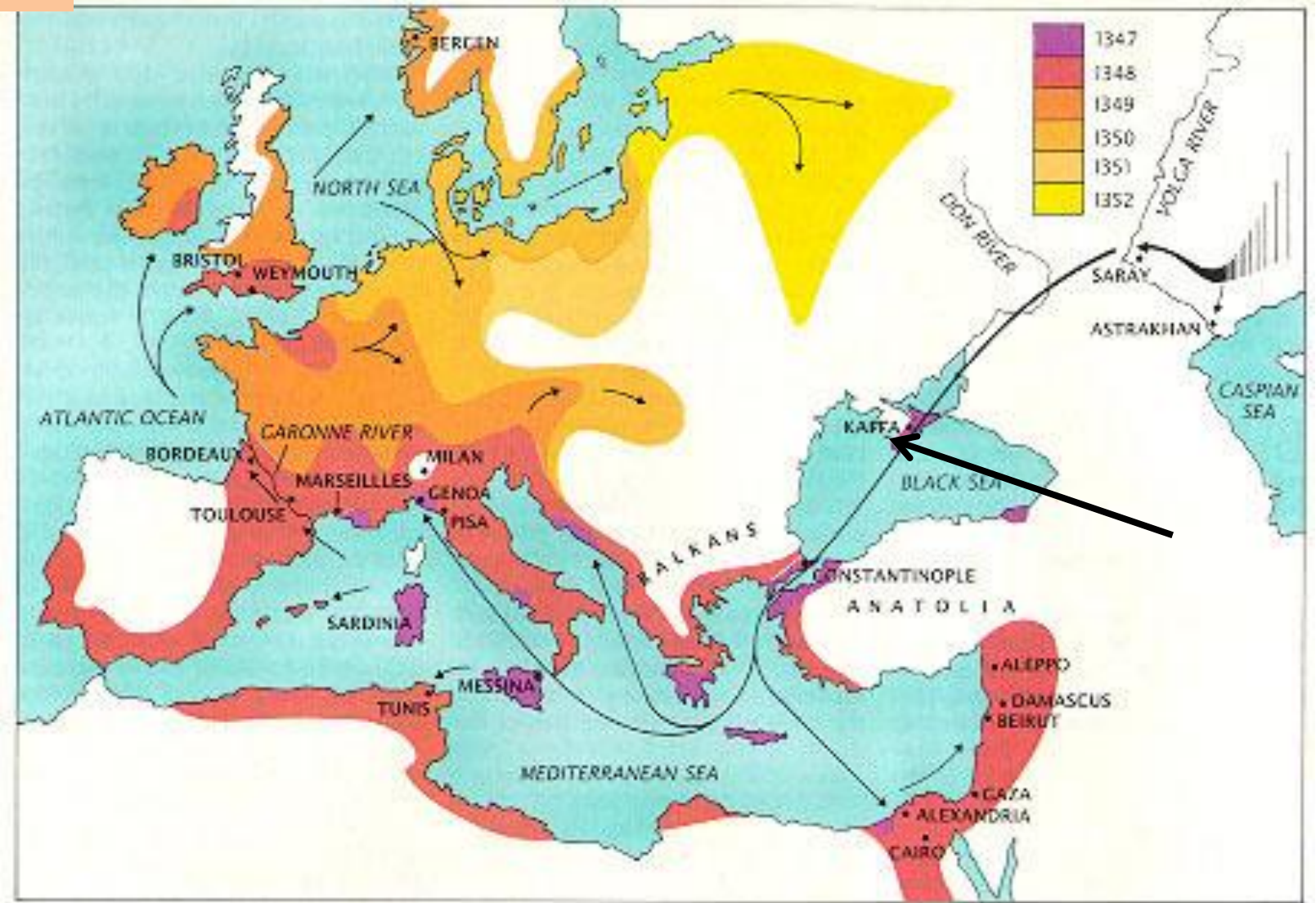
**These are some
of the first
places outside
China to show
large Covid-19
infection**



SOURCE: <https://www.dailymail.co.uk/news/article-8044229/Chevron-sends-300-British-employees-home-coronavirus-precaution.html>

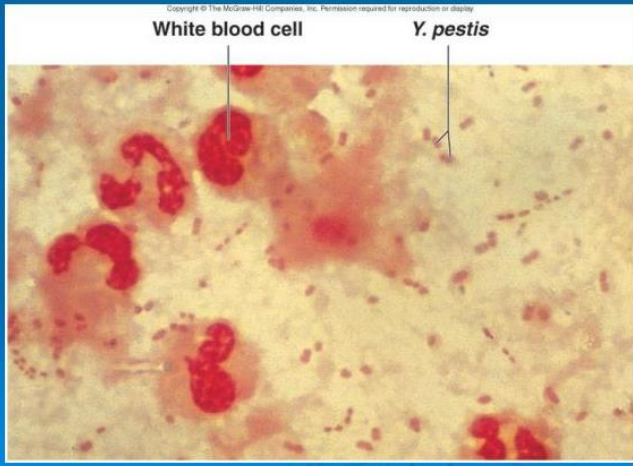
THE SPREAD OF THE BLACK DEATH

1347 - Kaffa
1347 - Black Sea
1347 - Constantinople
1347 - Mediterranean Is
1347 - Greece
1348 - Italy
1348 - Southern France
1348 - North Africa
1348 - Northern France
1348 - Southern England
1350 - Central France
1350 - Ireland
1350 - Eastern Britain
1350 - Norway
1350 - Austria



SOURCE: <http://faculty.humanities.uci.edu/bjbecker/PlaguesandPeople/lecture4.html>

Yersinia pestis



SOURCE: <https://www.slideserve.com/esma/the-gram-negative-bacilli-of-medical-importance-2-2>

Yersinia pestis, Bacteria not a Virus

The Black Death came in three forms:

- Bubonic (lymph nodes)
- Pneumonic (lungs)
- Septicemic (internal)
- All forms were caused by a bacterium called *Yersinia pestis*
- The most common form was the bubonic plague
- Each form of plague killed in a vicious manner
- Most infections attacked the lungs

THE MORTALITY RATE

- Mortality rate: **30-75%**
- In Europe, it killed an estimated 75 million people which was 30 to 75 percent of the population
- In Asia, it is estimated that another 25 million died
- In all, it is estimated that about 100 million died from the Plague

Black Death spread

- from Asia
- to Mediterranean
- to North Africa
- to Europe,
- to England and Ireland

• Source: Barney Sloane, The Black Death in London, 2017

CLIMATE CHANGE PRECEDES THE BLACK DEATH IN THE 14th CENTURY

THE LITTLE
ICE AGE
1315 TO 1322

Climate Change Produced the Little Ice Age:

- In 1315, European climate entered cooling period possibly caused by increasing volcanic activity
- The cooling of the European climate resulted in The Great Famine of 1315–1322
- Famine started in 1315 with 3 years of torrential rains
- Rains resulted in crop failures over most of Europe and lasted until the summer of 1317
- The climate change of 1315 to 1322 called the Little Ice Age caused crop failures, famine and weakened the population's ability to resist disease and increased dramatically the massive death rate

Findings of study in Jan. 2008 in the [Proceedings of the National Academy of Sciences](#) by Anthropologists Sharon N. DeWitte and James W. Wood.

They examined the human remains of a **Black Death** cemetery in London and compared them with remains from cemeteries in Denmark, where the Black Death did not affect the local population

Covid-19 reduces CO₂

As COVID-19 continues its deadly sweep across the globe, it unintentionally proves that we can dramatically decrease pollution levels in a short period of time.

Is it time to question why the climate crisis isn't treated with the same sense of urgency as a virus?

COVID-19 REDUCES GLOBAL WARMING

CHINA SHOWS REDUCTION IN CARBON DIOXIDE AND PARTICULATE POLLUTION

- World experienced a significant reduction in particulate matter pollution in February 2020 reducing triggers that worsen respiratory diseases such as asthma
- The recent drop in emissions over China amounts to a reduction of 200 million tons of carbon dioxide compared with emissions levels in 2019.
- NASA and European Space Agency (ESA) satellites have also detected a 40 per cent reduction in nitrogen dioxide (NO₂) levels over China
- The agencies said that the reduced levels were related to the economic slowdown prompted by COVID-19 containment policies as the gas is predominately emitted by motor vehicles and from industrial facilities

2020 -- PROBLEM OF GLOBAL WARMING SOLVED
WITH SHUTDOWN OF WORLD ECONOMY

HOW DID THE BLACK DEATH SPREAD?

THE BLACK RAT THEORY

Black Rat Theory: *Yersinia pestis* typically infects the Oriental rat flea. The Oriental Rat was believed to be a flea infested passenger on the ships that came to Italian ports. As their rodent hosts die, the infected fleas seek and bite humans.



SOURCE: <https://io9.gizmodo.com/rats-were-not-responsible-for-the-black-death-5833029?comment=44407568>

Sloane in his book the *Black Death in London* uncovered clues that cast doubt on rats with fleas were the main culprit in spreading *Yersinia pestis*

- He examined the timeline of the plague's period in London from 1348 to 1349
- The Plague appeared in November and reached its climax in April
- It spread through the cold winter months when rats and fleas should not be active
- Sloane concludes that if the rat/flea explanation for the spreading was accurate, plague cases should have petered out, not snowballed, when temperatures began to fall.

Source: Sloane, *Black Death in London*

The Black Death & Covid-19 are both spread through human contact

People can become infected with the plague in three different ways.

- Be bitten by a rat flea that's carrying plague
- Be bitten by a human flea carrying the plague
- Catch it from another person. (Plague can spread from person to person through an infected individual's cough or vomit)

The most likely way to spread the Plague is through human contact

WASH YOUR HANDS



SOURCE: <https://www.rgbstock.com/bigphoto/mo6ovTo%2Fhandwash>




SOURCE: <https://berserkon.com/img/get>


SYMPTOMS OF THE PLAGUE AS DESCRIBED IN PIACENZA, ITALY IN 1348

- First, a chilly stiffness and tingling spread through the body
- Then often swollen glands or buboes, up to the size of an apple, make their appearance in the armpit or the groin, growing, hardening, and burning with a fiercely intense pain
- Fever consumes the victim accompanied by an intolerable stench
- Vomiting or spitting of blood and further swellings or blotches of dark blood on the skin appears
- Victim collapses
- Victim lapses into a final coma
- Victim dies within 5 days or less

Symptoms of the plague





Symptoms of the Black Death



Day One

Swellings (buboes) appear in the armpits, groin or neck.

next



Symptoms of COVID-19

Both COVID-19 and the Yersinia Pestis (Black Death) start with a cough and fever and attack the lungs causing shortness of breath. Death occurs within a short period of time.



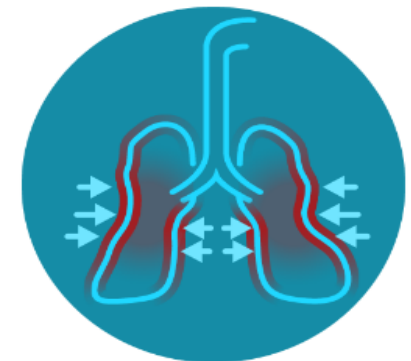
Call your doctor: If you think you have been exposed to COVID-19 and develop a fever and symptoms, such as cough or difficulty breathing, call your healthcare provider for medical advice.

Watch for symptoms

Reported illnesses have ranged from mild symptoms to severe illness and death for confirmed coronavirus disease 2019 (COVID-19) cases.

These symptoms may appear **2-14 days after exposure** (based on the incubation period of MERS-CoV viruses).

- Fever
- Cough
- Shortness of breath



If you develop **emergency warning signs** for COVID-19 get **medical attention immediately**. Emergency warning signs include*:

SOURCE: <https://www.cdc.gov/coronavirus/2019-ncov/symptoms-testing/symptoms.html>

WHAT DID THE PEOPLE OF THE 14TH CENTURY DO TO PROTECT THEMSELVES?

RANGE OF RESPONSES IN FLORENCE TO THE PLAGUE

- Some stockpiled food and water and closed themselves off in their homes, refusing to speak with anyone and hoping to wait out the onslaught (**Social Distancing**)
- Some turned to drinking and carousing, often making use of deserted private homes as much as taverns
- Others tried to continue their lives as normally as possible (**Florida Spring Term Break**)
- Some equipped themselves with flowers or herbs to ward off the evil
- Some abandoned everything and fled the disease by leaving the city
 - **How many are fleeing New York, California, and Washington State? (Flight)**



RUNAWAYS FLEEING FROM THE PLAGUE

WHAT DID THE PEOPLE OF THE 14TH CENTURY DO TO PROTECT THEMSELVES?

TURN TO PRAYER

- WITH INCREASED DEATHS
PEOPLE TURNED TO RELIGION
AND PRAYER

- The Hail Mary prayer was changed and a verse was added in the midst of the Black Plague: “pray for us now and at the hour of our death”



SOURCE: https://commons.wikimedia.org/wiki/File:Brooklyn_Museum_-_Study_for_Prayer_for_Death_in_the_Desert_-_Elihu_Vedder.jpg

COVID-19



Kathleen N. Hattrup

Pope calls for 9pm Rosary for
protection of our families

SOURCE: <https://aleteia.org/2020/03/18/pope-calls-for-9-pm-rosary-for-protection-of-our-families/>

Everything you need
to celebrate
the 4th Sunday of Lent
at home

START HERE

Aleteia

There is no better time to grow in our faith than in a moment of crisis. That is one of the points I made in a letter I sent to Catholics across the Diocese of Erie last week. It was a letter I never could have imagined writing—a letter suspending the celebration of Mass in public until further notice. Bishop Persico, *Erie Times-News*, 33/22/20

**WHAT DID THE
PEOPLE OF THE
14TH CENTURY
DO TO PROTECT
THEMSELVES?**

**CALL FOR
REPENTENCE**

THE FLAGELLANTS

- Groups of people who wandered from town to town whipping themselves and each other with scourges.
- Believed that the plague was a punishment from God
- Believed their self-mutilation was a form of atonement



SOURCE: <https://www.interestly.com/13-bizarre-and-outlandish-cures-for-the-medieval-black-death-including-powdered-unicorn-horn-and-frogs-legs/>

WHAT DID THE PEOPLE OF THE 14TH CENTURY DO TO PROTECT THEMSELVES?

WHO WAS TO BLAME?

- Slaughter the Jews
- Kill black cats
- Burn the witches

On February 14, 1349, the people of Strasbourg and of many other cities captured and burned at the stakes about 2,000 Jews.

- **BLAME THE JEWS**

- Jews – Europe's largest minority group at the time – were blamed for the Black Death
- Many believed that the Jews, were secretly poisoning the wells of Christian towns and cities.
- Thousands of innocent Jews, who had also suffered from the plague, were slaughtered in dozens of European communities



SOURCE: <https://commons.wikimedia.org/wiki/File:Doutielt3.jpg>

Blame the Cats - above all, **black** cats were exterminated in many regions of Europe because they were considered animals linked to **witchcraft**



Guns Don't Kill People

SOURCE: <http://recessappointment.com/2012/12/18/strange-bedfellows-pro-gun-republicans-now-defending-obamacare/>

Burn the Witches



SOURCE: <https://app.hedgeye.com/insights/46105-cartoon-of-the-day-blame-game>



SOURCE: <https://www.sutori.com/story/capital-punishment--eFeHDHw8YK3JRwvsTHh2E1zv>

WHO ARE THE MOST AT RISK?

THE POOR AND THE HOMELESS

- BLACK DEATH
 - The people in the tenements
 - The poor who lived in the streets



SOURCE: <https://www.citymetric.com/politics/lessons-history-century-ago-tories-accepted-only-councils-could-solve-housing-crisis-1972>

- COVID-19
 - The refugees in the camps of Syria, Mexico and elsewhere
 - The Homeless



SOURCE: <https://www.telegraph.co.uk/news/worldnews/middleeast/syria/10570726/Syria-crisis-how-does-Britains-aid-donation-compare.html>

California struggles to protect homeless as coronavirus spreads

WHAT WERE THE OUTCOMES OF THE BLACK DEATH?

SHORT TERM:

- 75 to 100 million dead
- Decrease in population
- Reduction of field labor
- Reduction of land under cultivation
- Substitution of wage labor for feudal labor
- Increase in wages
- Culture turned morbid with common use of representations of death

LONG TERM:

- The Weakening of the Catholic Church
- The End of Feudalism: Manors, Lords & Serfdom
- Increase in Monarchial Power (Louis XIV)
- Beginning of Modern Warfare (100 Years War)
- The Protestant Reformation (Martin Luther)
- The Printing Press (Guttenburg)
- Growth of Science (Galileo)
- The Beginning of the Modern World (1492)



Danse Macabre from the Nuremberg Chronicle (1493).

HOW WAS GOVERNMENT IMPACTED IN THE 14TH CENTURY BY THE BLACK DEATH?

CLOSE GOVERNMENT FUNCTIONS

- “Whereas lately by reason of the deadly pestilence...we caused the Parliament to be prorogued (suspended) . .and because the aforesaid pestilence is increasing we have thought fit to postpone the said Parliament until we shall issue further summons. ”
- On March 10, 1349, King Edward III of Britain accepted the fact that his postponement of the January Parliament would effectively have to be indefinite

• Source: Sloane, *Black Death in London*, 54.

**Will the
House and
Senate
close their
doors and
vote
remotely?**

**Politico: Anxiety grows
in Capitol as lawmakers
weigh remote voting**

WHAT IS THE IMPACT OF COVID-19 ON GOVERNMENT?

1. Several states have decided to cancel their primaries and caucuses.
2. Other states were encouraged to use "winner-takes-all" systems to award delegates instead of using proportional allocation
3. In February 2019, the Republican National Committee voted to provide undivided support to Trump. Trump became the presumptive Republican nominee on March 17, 2020 after securing a majority of pledged delegates
4. Will the Democrats support Biden without further primaries?

- Will the National Party Conventions, (the Republican Convention scheduled for Aug. 24 to 27 and the Democratic National Convention scheduled for July 13 to 16) be cancelled?



WHAT IS
THE COST?

THE BLACK DEATH REAPPEARS:

There is a Plague vaccine against *Yersinia pestis*. Dead bacteria have been used since 1890, but recently, live vaccines have been developed to prevent the disease.

- The plague returned to Europe and the Mediterranean throughout the 14th to 17th centuries.
- The plague was particularly widespread in Europe in the following years: 1360–1363; 1374; 1400; 1438–1439; 1456–1457; 1464–1466; 1481–1485; 1500–1503; 1518–1531; 1544–1548; 1563–1566; 1573–1588; 1596–1599; 1602–1611; 1623–1640; 1644–1654; and 1664–1667

• Source: Wikipedia

WILL THERE BE REPEATED OUTBREAKS OF COVID - 19?

PLAGUE CASES IN 1998

- 1000– 3000 cases reported annually across the world
- Africa , Asia
Northeastern Brazil
- Andes Mountain Regions
- US (19–40 cases a year mostly in Western areas such as New Mexico and Arizona)
- About 15% of reported humans with plague die (Campbell and Dennis, 2001).

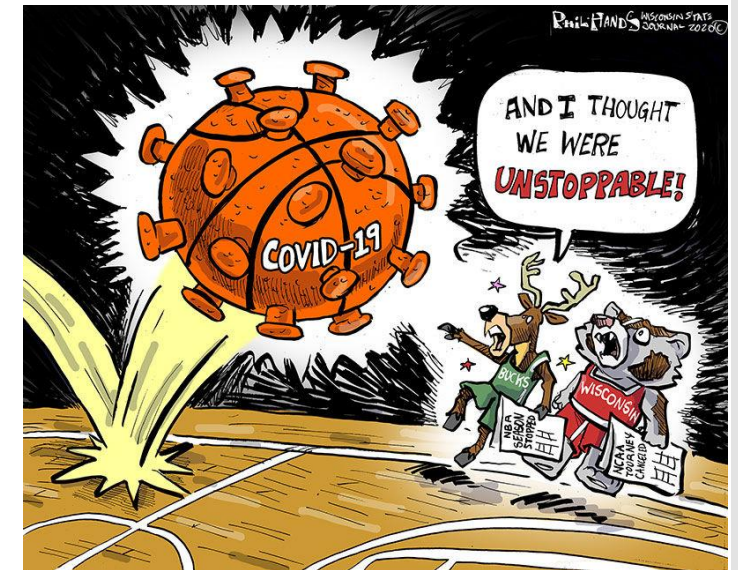
WHAT ARE THE OUTCOMES OF THE COVID - 19 PANDEMIC for the United States and the World?

WHO KNOWS!

- Greater future preparedness?
- Increased research for vaccines for possible future pandemics?
- The end of local businesses and the victory of large corporations (Wal-Mart, CVS)
- World-wide recession?
- Weakening of democratic institutions?
- Businesses reassess their supply chains and locate them close by?
- Move to establish less business connectivity and more internal reliance?
- Closed borders for most people?
- Less travel abroad?
- Working from home becomes the norm?
- Greater support for world organizations such as World Health Organization?
- Social Distancing becomes the new norm?



SOURCE: <https://www.wired.com/story/dating-apps-coronavirus-covid-19/>



MARCH MADNESS

SOURCE: https://madison.com/wsj/opinion/cartoon/hands-on-wisconsin-minnesota-badger-shirts-could-have-been-worse/article_9c8ce057-edeb-513d-9869-a5a82d41abbd.html

Sources to Pursue

BLACK DEATH

- *Black Death In London* by Barney Sloane
- *Black Death, the World's most devastating plague* by Dorsey Armstrong, Great Courses
- "Hunger and History", *Journal of Interdisciplinary History*, 14,2, 1983
- *The Black Death and the Transformation of the West* by David Herlihy
- *The Pandemic Century, One hundred years of panic, hysteria, and hubris* by Mark Honigsbaum

COVID-19

- <https://youtu.be/BtN-goygVOY> (Anita and I believe that this is the best explanation of what we face with COVID- 19)

If you would like a copy of this PowerPoint, please email your name and address to lynch@velocity.net