Future Pandemics and Reduction Measures

Why in News

Recently, the **Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem** (IPBES) has released a **report which warns about future** pandemics, their more frequent emergence, a faster pace of spread and more damage to the world killing more people than **Covid-19**, unless significant measures are taken.
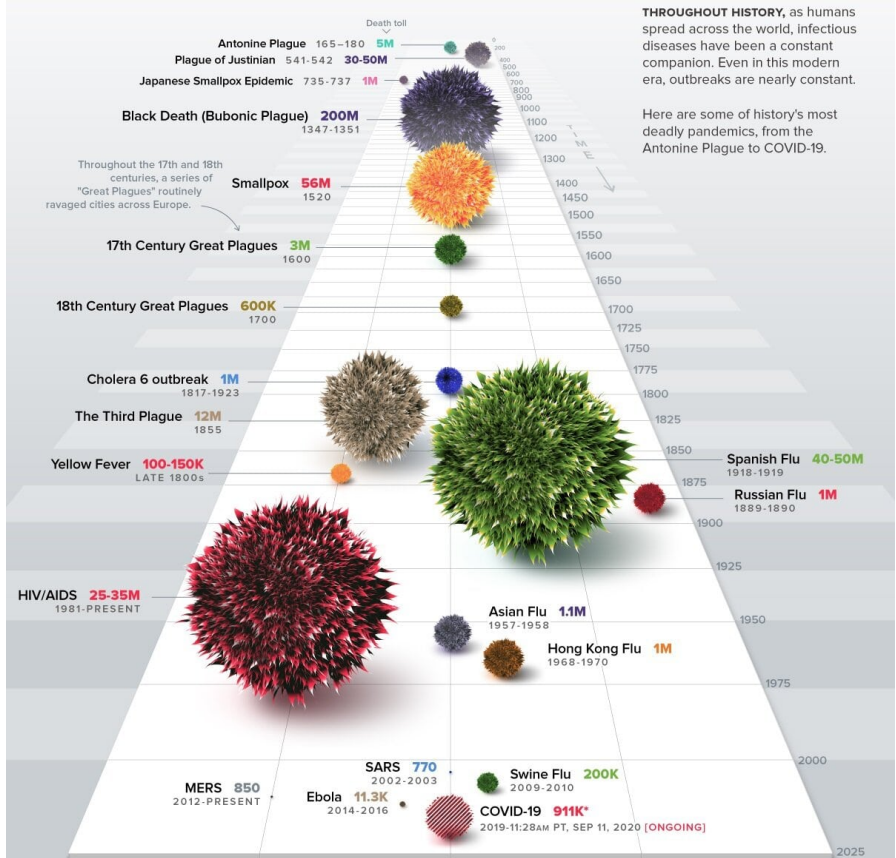
- The IPBES is an independent intergovernmental body, **established by the** United Nations (UN) in 2012.

    - It **aims to strengthen the science-policy interface** for biodiversity and ecosystem services for the conservation and sustainable use of biodiversity, long-term human well-being and sustainable development.

Key Points

- **Pandemics of the Century:** //

HISTORY OF PANDEMICS

PAN·DEM·IC (of a disease) prevalent over a whole country or the world.

THROUGHOUT HISTORY, as humans spread across the world, infectious diseases have been a constant companion. Even in this modern era, outbreaks are nearly constant.

Here are some of history's most deadly pandemics, from the Antonine Plague to COVID-19.

Death toll

Pandemic	Date	Death toll
Antonine Plague	165–180	5M
Plague of Justinian	541-542	30-50M
Japanese Smallpox Epidemic	735-737	1M
Black Death (Bubonic Plague)	1347-1351	200M
Smallpox	1520	56M
17th Century Great Plagues	1600	3M
18th Century Great Plagues	1700	600K
Cholera 6 outbreak	1817-1923	1M
The Third Plague	1855	12M
Yellow Fever	LATE 1800s	100-150K
Spanish Flu	1918-1919	40-50M
Russian Flu	1889-1890	1M
HIV/AIDS	1981-PRESENT	25-35M
Asian Flu	1957-1958	1.1M
Hong Kong Flu	1968-1970	1M
MERS	2012-PRESENT	850
Ebola	2014-2016	11.3K
SARS	2002-2003	770
Swine Flu	2009-2010	200K
COVID-19	2019-11:28AM PT, SEP 11, 2020 [ONGOING]	911K*

Throughout the 17th and 18th centuries, a series of "Great Plagues" routinely ravaged cities across Europe.

(Timeline: 1100, 1200, 1300, 1400, 1450, 1500, 1550, 1600, 1650, 1700, 1725, 1750, 1775, 1800, 1825, 1850, 1875, 1900, 1925, 1950, 1975, 2000, 2025)
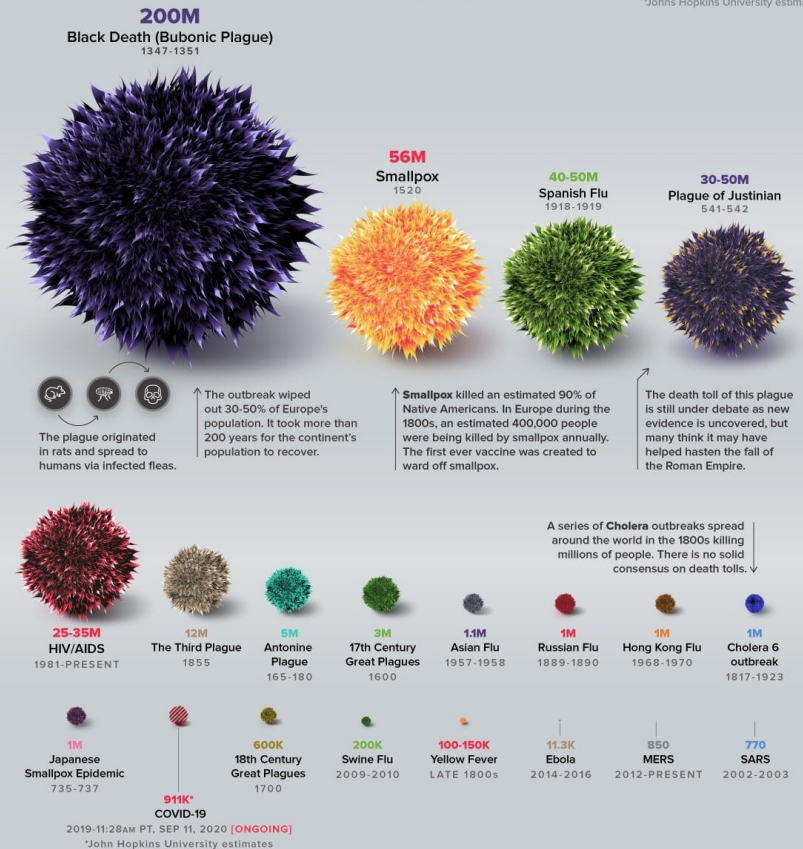
WHO officially declared COVID-19 a pandemic on Mar 11, 2020.

It is hard to calculate and forecast the impact of COVID-19 because the disease is new to medicine, and data is still coming in.

*Johns Hopkins University estimates

DEATH TOLL
[HIGHEST TO LOWEST]

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1347-1351

56M
Smallpox
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40-50M
Spanish Flu
1918-1919

30-50M
Plague of Justinian
541-542

The plague originated in rats and spread to humans via infected fleas.

The outbreak wiped out 30-50% of Europe's population. It took more than 200 years for the continent's population to recover.

Smallpox killed an estimated 90% of Native Americans. In Europe during the 1800s, an estimated 400,000 people were being killed by smallpox annually. The first ever vaccine was created to ward off smallpox.

The death toll of this plague is still under debate as new evidence is uncovered, but many think it may have helped hasten the fall of the Roman Empire.

A series of **Cholera** outbreaks spread around the world in the 1800s killing millions of people. There is no solid consensus on death tolls.

25-35M HIV/AIDS 1981-PRESENT	**12M** The Third Plague 1855	**5M** Antonine Plague 165-180	**3M** 17th Century Great Plagues 1600	**1.1M** Asian Flu 1957-1958	**1M** Russian Flu 1889-1890	**1M** Hong Kong Flu 1968-1970	**1M** Cholera 6 outbreak 1817-1923

1M Japanese Smallpox Epidemic 735-737	**911K*** COVID-19 2019-11:28AM PT, SEP 11, 2020 [ONGOING]	**600K** 18th Century Great Plagues 1700	**200K** Swine Flu 2009-2010	**100-150K** Yellow Fever LATE 1800s	**11.3K** Ebola 2014-2016	**850** MERS 2012-PRESENT	**770** SARS 2002-2003

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- Covid-19 is at least the sixth pandemic to have taken place in the last century since the Spanish Influenza **Pandemic of 1918.**

    - In March 2020, the **World Health Organisation** (WHO) declared Covid-19 a pandemic.
- **Three** of the pandemics were caused **by influenza viruses,** one by **Human Immunodeficiency Virus** (HIV) followed by **Severe Acute Respiratory Syndrome** (SARS) and now Covid-19.

- **Causes:**

    - Almost all the pandemics so far, have been **zoonoses** (diseases caused by germs that spread between animals and people).
    - More than 70% of emerging diseases, such as **Ebola**, **Zika** and **Nipah**, are **caused by microbes found in animals** which **spread due to contact** among wildlife, livestock and people.

        - The estimated value of the legal international wildlife trade in 2019 was about USD 107 billion, a 500% increase since 2005 and a 2000% increase since the 1980s.
    - **Covid-19's origins also lie in microbes carried by animals** but its **emergence has been entirely driven by human activities** like all pandemics.
    - About 30% of emerging infectious diseases are attributed to **land-use change**, **agricultural expansion** and **urbanisation.**

- **Future Possibilities:**

    - Currently, there are over **1.7 million 'undiscovered' viruses** that exist in mammals and birds, out of which **up to 827,000 could have the ability to infect humans.**

- **Reduction Measures:**

    - Pandemic risk can be lowered by **reducing the human activities that drive the loss of biodiversity,** by greater **conservation of protected areas** and through measures that **reduce unsustainable exploitation** of high biodiversity regions.
    - These measures will help in **reducing the contact between wildlife-livestock and humans,** thereby **helping prevent the spread** of new diseases.
    - Policy options like launching a **high-level intergovernmental council on pandemic prevention,** countries setting **mutually-agreed goals or targets** regarding the environment, animals and people, and **reducing zoonotic disease risk in the international wildlife trade** by forming intergovernmental 'health and trade' partnerships will also reduce the risks substantially.

Pandemic

- According to the WHO, a pandemic is declared when a new disease for which people do not have immunity spreads around the world beyond expectations.

Epidemic

- An epidemic is a large outbreak, one that spreads among a population or region. It is less severe than pandemic due to a limited area of spread.

Source: IE