HISTORY OF PANDEMICS

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 Novel Coronavirus (COVID-19).
Dec 31
- China alerts WHO to several "pneumonia" cases in Wuhan

Jan 7
- New virus identified and named it 2019-nCoV
- France confirms Europe's first case

Jan 11
- WHO declares outbreak a Public Health Emergency of Int'l Concern

Jan 19
- First case in the U.S. in Washington state

Feb 2
- First death outside China in the Philippines

Feb 11
- WHO names virus SARS-CoV2 and the disease CoViD-19

Feb 14
- Egypt confirms Africa's first case

Feb 26
- Latin America reports first case

Feb 11
- First case in the U.S. in Washington state

Mar 11
- WHO declare the outbreak a pandemic

March 23
- New York City confirms over 21,000 cases, making it the epicenter of the pandemic in the U.S.

March 26
- The U.S. reaches the highest number of confirmed cases in the world with 82,404 infections

April 2
- The world reaches 1 million infections

April 7
- The U.S. reports the highest single-day death toll for any country: more than 1,900

April 10
- Globally, authorities report 1.67 million cases and 101,700 fatalities
Bad combo:
Respiratory spread; contagious; lethal

• Data suggest similar transmission as seasonal influenza
  • Droplet - primary, large virus-laden nuclei, <6 feet (OSHA) don’t stay long in the air
  • Hands
  • Fomites (surfaces)
  • Possible: gastrointestinal?
Empirical evidence that social distancing works

- Two adjacent Italian provinces in Lombardy region
- One (Lodi) began shelter-in-place on 26 February
- Other (Bergamo) began shelter-in-place on 9 March
- Empirical evidence that shelter in place orders can blunt transmission and new disease
Is social distancing working in San Francisco?
COVID-19 cases by day, San Francisco and Los Angeles, March-April, 2020

San Francisco

Los Angeles

First COVID-19 death
Shelter in place

First COVID-19 death
Shelter in place
COVID-19 cases, Los Angeles and New York City, March-April 2020

COVID-19 cases by date of report, Los Angeles, 2020

COVID-19 cases by date of report, New York City, 2020

California shelter-in-place order

First COVID-19 death

First COVID-19 death

NYS PAUSE
New cases reported in Mexico
Charts of cases and deaths
### Very low number of tests/ million pop.

<table>
<thead>
<tr>
<th>Country, Other</th>
<th>Total Cases</th>
<th>New Cases</th>
<th>Total Deaths</th>
<th>New Deaths</th>
<th>Total Recovered</th>
<th>Active Cases</th>
<th>Serious, Critical</th>
<th>Tot Cases/1M pop</th>
<th>Deaths/1M pop</th>
<th>Total Tests</th>
<th>Tests/1M pop</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Guatemala</strong></td>
<td>294</td>
<td>+5</td>
<td>7</td>
<td></td>
<td>24</td>
<td>263</td>
<td>3</td>
<td>16</td>
<td>0.4</td>
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<tr>
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<td>+26</td>
<td>2,627</td>
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<tr>
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<td>256</td>
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<tr>
<td><strong>Haiti</strong></td>
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<td>5</td>
<td>5</td>
<td>0.3</td>
<td>618</td>
<td>54</td>
</tr>
</tbody>
</table>

Al 20 de Abril de 2020
Total tests for COVID-19 per 1,000 people, Apr 20, 2020

- Iceland: 125.58 (Apr 19, 2020)
- Norway: 26.29
- Italy: 23.64
- United States: 12.08
- South Korea: 10.93
- United Kingdom: 5.73
- Taiwan: 2.25 (Apr 19, 2020)
- Vietnam: 1.66 (Apr 19, 2020)
- Ecuador: 0.9 (Apr 15, 2020)
- Mexico: 0.29 (Apr 19, 2020)

Source: Official sources collated by Our World in Data
Note: There are substantial differences across countries in terms of the units, whether or not all labs are included, the extent to which negative and pending tests are included and other aspects. Details for each country can be found at ourworldindata.org/covid-testing.
Total tests for COVID-19 per 1,000 people

LINEAR

- **Italy** tests performed
- **United States** inconsistent units (COVID Tracking Project)
- **South Korea** cases tested
- **Mexico** cases tested

Source: Official sources collated by Our World in Data

Note: There are substantial differences across countries in terms of the units, whether not all labs are included, the extent to which negative and pending tests are included and other aspects. Details for each country can be found at ourworldindata.org/covid-testing.
Tiempo de duplicación (días) en México, Colombia, Argentina, Chile, Perú, Brasil y España.
Case fatality rate of the ongoing COVID-19 pandemic
The Case Fatality Rate (CFR) is the ratio between confirmed deaths and confirmed cases. During an outbreak of a pandemic the CFR is a poor measure of the mortality risk of the disease. We explain this in detail at OurWorldInData.org/Coronavirus

Source: European CDC – Situation Update Worldwide – Last updated 20th April, 11:30 (London time)
Note: Only countries with more than 100 confirmed cases are included.
Vaccines on development

- 86 vaccines in trials—China, EUA, Europe
How to Save Black and Hispanic Lives in a Pandemic

Minorities are dying of Covid-19 at alarming rates. Here’s what to do about it right now.

By The Editorial Board

The editorial board is a group of opinion journalists whose views are informed by expertise, research, debate and certain longstanding values. It is separate from the newsroom.
What do we need to do to return to the “life we aspire to”

1. Transmission needs to be low
   • Low numbers of new cases
   • Low number of hospital admissions
   • Low incidence as measured in cohort studies
   • Low seroprevalance consistent with models of <1% (or so)
   • Low incidence suggested by sentinel surveillance
     • Remnant specimens
     • Fever surveillance (Kinsa)
     • Cough and fever surveillance (Citizen Scientist)
     • Remnant influenza/RSV swabs

2. Testing must be available essentially on demand

3. Vigorous contact tracing/supervised isolation/supervised quarantine apparatus needs to be in place and functioning – this also means space for people who need to be isolated and quarantined and can’t do so at home

4. Adequate hospital/ICU/ventilator capacity

5. Agreement to continue some community interventions, e.g.,
   • Continued restrictions on mass gatherings
   • Sheltering in place for older adults
   • Options for schools
   • Masks worn outdoors
   • Staggered return to work
DOUBLE FEATURE COMING SOON:

DEATH OF THE CORONAVIRUS

PLUS, END OF DONALD TRUMP
Daily confirmed COVID-19 cases per million, 3-day rolling average

The number of confirmed cases is lower than the number of total cases. The main reason for this is limited testing.

Source: European CDC – Situation Update Worldwide – Last updated 23rd April, 13:45 (London time)  OurWorldInData.org/coronavirus • CC BY

Note: The rolling average is the average across three days – the confirmed cases on the particular date, and the two previous days. For example, the value for 27th March is the average over the 25th, 26th and 27th March.
Daily tests per thousand people

The 3-day rolling average of the daily number of tests for COVID-19 per thousand people of the country’s population. Given in terms of the number of days since the total confirmed cases reached 1 per million.

Source: Official data collated by Our World in Data, European CDC – Situation Update Worldwide OurWorldInData.org/coronavirus • CC BY

Note: For testing figures, there are substantial differences across countries in terms of the units, whether or not all labs are included, the extent to which negative and pending tests are included and other aspects. Details for each country can be found at the linked page.