COVID-19 DATA AND INFORMATION, VARIOUS SOURCES
MARCH 17, 2020
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INVESTING FOR TOMORROW, DELIVERING TODAY.
Total confirmed COVID-19 cases

The large increase in the number of cases globally and in China on Feb 17 is the result of a change in reporting methodology. It is explained at OurWorldInData.org/Coronavirus

A new report shows the number of deaths that could occur in the U.S. and Britain in the absence of actions to control the epidemic. Imperial College COVID-19 Response Team

Case fatality rates: COVID-19 vs. US Seasonal Flu

Case fatality rate (CFR) is specific to a location and time. It is calculated by dividing the total number of deaths from a disease by the number of confirmed cases.

Seasonal Flu
Case fatality rates for the influenza season 2018-19 in the USA.
Symptomatic cases are calculated based on models which aim to account for underreporting – figures based on medical visits are therefore also shown in square brackets, which may be a closer comparison to COVID-19 case fatality rates.

COVID-19
Case fatality rates for the COVID-19 outbreak in China, for the period up to February 11, 2020.
Covid-19’s case fatality rate increases with age, according to China’s data

Estimated case fatality risk in Hubei, China, January-February 2020

Case fatality ratio*

<table>
<thead>
<tr>
<th>Age group</th>
<th>Case fatality ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-9</td>
<td>&lt;0.01%</td>
</tr>
<tr>
<td>10-19</td>
<td>0.02%</td>
</tr>
<tr>
<td>20-29</td>
<td>0.09%</td>
</tr>
<tr>
<td>30-39</td>
<td>0.13%</td>
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<tr>
<td>40-49</td>
<td>1.3%</td>
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<tr>
<td>50-59</td>
<td>4.6%</td>
</tr>
<tr>
<td>60-69</td>
<td>9.8%</td>
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<tr>
<td>70-79</td>
<td>18%</td>
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<td>80+</td>
<td></td>
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*Among all symptomatic and asymptomatic infections

Source: Adjusted age-specific case fatality ratio during the Covid-19 epidemic in Hubei, China, January and February 2020, medRxiv

Coronavirus: early-stage case fatality rates by underlying health condition in China

Case fatality rate (CFR) is calculated by dividing the total number of deaths from a disease by the number of confirmed cases. Data is based on early-stage analysis of the COVID-19 outbreak in China in the period up to February 11, 2020.

- Cardiovascular disease: 10.5%
- Diabetes: 7.3%
- Chronic respiratory disease: 6.3%
- Hypertension: 6%
- Cancer: 5.6%
- No health condition: 0.9%

10.5% of people with a cardiovascular disease who were diagnosed with COVID-19 died.

Individuals with underlying health conditions are more vulnerable than those without.


\texttt{OurWorldinData.org} – Research and data to make progress against the world’s largest problems.
Coronavirus [COVID-19]: the severity of diagnosed cases in China

Descriptions of 44,415 confirmed cases of COVID-19 nationwide in China. Included are confirmed cases in the early period of the outbreak of the disease up to February 11, 2020.

2.3% of all cases died
1,023 of the 44,415 infected people, for which the breakdown is shown on the right, died. The case fatality rate is therefore 2.3%.

5% Critical cases
Critical cases include patients who suffered respiratory failure, septic shock, and/or multiple organ dysfunction/failure.

14% Severe cases
Severe cases include patients suffer from shortness of breath, respiratory frequency ≥ 30/minute, blood oxygen saturation <93%, PaO2/FiO2 ratio <300, and/or lung infiltrates >50% within 24–48 hours.

81% Mild cases
Mild cases include all patients without pneumonia or cases of mild pneumonia.

Cases that were not identified and not diagnosed

COVID-19 DEATH RATES IN CHINA HAVE DECLINED OVER TIME

How contagious is a disease?

Scientists use "R naught," or R0, to estimate how many other people one sick person is likely to infect.

Covid-19
2-3.11

*This estimate is preliminary and likely to change

Zika
3-6.6

Measles
11-18

Ebola
2

*An early estimate based on the Colombia outbreak in 2015

HIV
3.6-3.7

Seasonal flu
1.3

Norovirus
1.6-3.7

*An estimate based on Réunion Island in 2006

Sources: Travel Medicine, PLOS One, JAMA Pediatrics, MDPI, NCBI, New England Journal of Medicine, "The Spread and Control of Norovirus Outbreaks Among Hospitals in a Region"
The symptoms of coronavirus disease [COVID-19]

The most common signs and symptoms of 55,924 laboratory confirmed cases of COVID-19. Reported from China in the period up to February 22, 2020

- Fever: 87.9%
- Dry cough: 67.7%
- Fatigue: 38.1%
- Sputum production: 33.4%
- Shortness of breath: 18.6%
- Muscle pain or joint pain: 14.8%
- Sore throat: 13.9%
- Headache: 13.6%
- Chills: 11.4%
- Nausea or vomiting: 5%
- Nasal congestion: 4.8%
- Diarrhoea: 3.7%

Many of the most common symptoms are shared with those of the flu or cold. So it is also good to know which common symptoms of the flu or the common cold are not symptoms of COVID-19. COVID-19 infection seems to rarely cause a runny nose.

Flattening the curve

- Delay outbreak peak
- Reduction in peak of outbreak
- Cases without protective measures
- Cases with protective measures

Source: CDC
A baseline simulation with case isolation only (red); a simulation with social distancing in place throughout the epidemic, flattening the curve (green), and a simulation with more effective social distancing in place for a limited period only, typically followed by a resurgence when social distancing is halted (blue). These are not quantitative predictions but robust qualitative illustrations for a range of model choices. Source: https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(20)30567-5/fulltext
In the outbreak of an epidemic *early* counter measures are important. Their intention is to ‘flatten the curve’: to lower the rate of infection to spread out the epidemic. This way the number of people who are sick at the same time does not exceed the capacity of the healthcare system.

Development of the pandemic without measures that slow the rate of infection.

- The capacity is determined by the number of doctors, nurses, hospital beds, intensive care units and more.
- The capacity can change during an epidemic, for example when healthcare workers might be sick or in quarantine.

Capacity of the healthcare system

Development of the pandemic with measures that slow the rate of infection early after the outbreak.

Based on the Centers for Disease Control and Prevention
OurWorldinData.org – Research and data to make progress against the world’s largest problems.
Total COVID-19 tests performed per million people

Most recent data available from official sources as of 13 March 2020 - 9:00 GMT

Source: Our World in Data based on official country reports
# Year-over-year change in weekly US travel sales

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</tr>
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<tbody>
<tr>
<td><strong>Online travel agencies</strong></td>
<td>2.1%</td>
<td>16.6%</td>
<td>-0.4%</td>
<td>-1.9%</td>
<td>9.1%</td>
<td>7.8%</td>
<td>-6.2%</td>
<td>-20.5%</td>
</tr>
<tr>
<td><strong>Airlines</strong></td>
<td>5.6%</td>
<td>3.2%</td>
<td>4.9%</td>
<td>-5.7%</td>
<td>-4.0%</td>
<td>0.5%</td>
<td>-7.4%</td>
<td>-16.5%</td>
</tr>
<tr>
<td><strong>Cruiselines</strong></td>
<td>0.6%</td>
<td>3.1%</td>
<td>13.4%</td>
<td>-3.9%</td>
<td>-12.2%</td>
<td>-11.1%</td>
<td>-6.4%</td>
<td>-14.9%</td>
</tr>
<tr>
<td><strong>Hotels</strong></td>
<td>7.5%</td>
<td>11.6%</td>
<td>12.1%</td>
<td>6.2%</td>
<td>4.6%</td>
<td>7.6%</td>
<td>3.4%</td>
<td>-0.6%</td>
</tr>
</tbody>
</table>

Source: Earnest Research