COVID-19 Chartbook

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COVID EXPLODES
COVID OUTBREAK HAS BEEN, IS, AND WILL CONTINUE TO BE DOMINANT THEME IN ECONOMIC DISCUSSIONS

Confirmed Cases Daily by Country and Region
7-Day Moving Average

Largest Reported Outbreaks: Cases and Fatality Rates

Sources: Bloomberg, Vining Sparks (*Other includes countries not listed in top 100 outbreaks)
COVID-19 DAILY GROWTH

DAILY INCREASE IN NUMBER OF CASES AND DEATHS GLOBALLY

Total Cases Globally (Daily)
Total Deaths Globally (Daily)
7 per. Mov. Avg. (Total Cases Globally (Daily))
7 per. Mov. Avg. (Total Deaths Globally (Daily))

Sources: Bloomberg, Vining Sparks

Today’s Figures Are Incomplete
U.S. OUTBREAK

Sources: Bloomberg, Covid Tracking Project, Vining Sparks
## U.S. STATE-LEVEL DATA

**Sources:** Bloomberg (Reported with one-day lag due to slower reporting states), Hospitalizations from Covid Tracking Project Data, Vining Sparks

<table>
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<th>State</th>
<th>Confirmed Cases</th>
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<td>1,109,900</td>
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</tbody>
</table>
U.S. STATE-LEVEL DATA

Confirmed Cases per 100,000 Population

Reported Deaths per 100,000 Population and Fatality Rates

Sources: Bloomberg, Vining Sparks
7-DAY VERSUS 14-DAY GROWTH RATES PER CAPITA: IS OUTBREAK SPREADING OR SLOWING IN EACH STATE

Sources: Bloomberg, Vining Sparks; Darkest bars represent 7-day averages within 3% of peak 7-day growth rate.
U.S. STATE-LEVEL DATA
BREADTH AND RATE OF SPREAD

Outbreak Slowing (7D Avg Less than 14D Avg)
Outbreak Accelerating (7D Avg Exceeds 14D Avg)

Confirmed Cases Per 100,000 Population
7-Day Minus 14-Day Growth of Cases Per 100,000

Sources: Bloomberg, Vining Sparks
U.S. TESTING AND RESULTS

DAILY TESTING HAS INCREASED BUT CONFIRMED CASES APPEAR TO HAVE PLATEAUED

Sources: Covid Tracking Project (as Reported by State and Local Agencies), Vining Sparks

Updated Weekly
U.S. MEDICAL SITUATION
CURRENT DISPOSITION OF CASES

Sources: Covid Tracking Project (as Reported by State and Local Agencies), Vining Sparks
HOSPITALIZATIONS BY STATE

Current Per Capita Hospitalizations

Week Ago Per Capita Hospitalizations

Peak Per Capita Hospitalizations

Sources: Covid Tracking Project, Bloomberg, Vining Sparks (FL, HI, KS Not Reporting Hospitalizations)
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<tr>
<th>Country</th>
<th>Confirmed Cases</th>
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<tr>
<td></td>
<td>Total</td>
<td>New</td>
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<td><strong>Afghanistan</strong></td>
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Sources: Bloomberg, Vining Sparks
SITUATION BY COUNTRY
NUMBER OF CONFIRMED CASES AND REPORTED DEATHS PER 100,000 POPULATION

Sources: Bloomberg, Census Bureau, Vining Sparks

Cases per 100,000
Deaths per 100,000

Qatar, Bahrain, Kuwait, Oman, Chile, Maldives, Brazil, U.S., Andorra, Armenia, Israel, Peru, Brazil, Belgium, U.A.E., Russia, Ecuador, Saudi Arabia, Singapore, Dom. Republic, South Africa, Moldova, Luxembourg, Argentina, Spain, Saudi Arabia, Belguim, Macedoim, Ireland, Portugal, Bosnia-Herzegovina, Britain, Switzerland, France, Mexico, Iran, Serbia, Italy, Romania, Canada, Azerbaijan, Turkey, Austria, Albania, Lebanon, Germany, Denmark
RATE OF PER CAPITA GROWTH
COUNTRIES BY CURRENT GROWTH RATE (7D AVG) VERSUS LONGER RUN GROWTH RATE (14D AVG)

7-Day Average Growth Per Capita Minus 14-Day Average Growth Per Capita

Week Ago Level

25 Fastest Accelerating Outbreaks by Country
7D Growth Rate Higher Than 14D Growth Rate

25 Fastest Decelerating Outbreaks by Country
7D Growth Rate Lower Than 14D Growth Rate

Confirmed Cases Over Last 7 Days

Sources: Bloomberg, Vining Sparks
LARGEST OUTBREAKS
OUTBREAKS HAVE MOVED FROM EUROPE TO THE U.S. AND NOW TO LATIN AMERICA, RUSSIA, AND INDIA

Current Growth (7D Avg.) as Percent of Peak Growth (7D Avg.)

Sources: Bloomberg, Vining Sparks
CASE GROWTH BY COUNTRY

Sources: Bloomberg, Vining Sparks

Cases by Country - 20 Largest Outbreaks

- U.S.
- Brazil
- India
- Russia
- Peru
- South Africa
- Colombia
- Mexico
- Spain
- Argentina
- Chile
- Iran
- Britain
- France
- Bangladesh
- Saudi Arabia
- Pakistan
- Turkey
- Turkey
- Italy
- Germany

Sources: Bloomberg, Vining Sparks
CASE GROWTH BY COUNTRY

Sources: Bloomberg, Vining Sparks

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- Spain
- Argentina
- Chile
- Iran
- Britain
- France
- Bangladesh
- Saudi Arabia
- Pakistan
- Turkey
- Italy
- Germany

Logarithmic Scale (Base = 10)

Mar
Apr
May
Jun
Jul
Aug
Sep
Includes metrics on school closings, workplace closings, canceling public events, restrictions on gathering size, closing public transportation, issuing stay-at-home requirements, restrictions on internal movement, restrictions on international travel.

Sources: Oxford COVID-19 Government Response Tracker, Blavatnik School of Government, Vining Sparks
PER CAPITA GROWTH (7-DAY)

Sources: Bloomberg, Vining Sparks
GOVERNMENT STRINGENCY
OXFORD STRINGENCY INDEX – QUANTIFYING STRINGENCY OF GOVERNMENT RESPONSES

Includes metrics on school closings, workplace closings, canceling public events, restrictions on gathering size, closing public transportation, issuing stay-at-home requirements, restrictions on internal movement, restrictions on international travel.

Per Capita Case Growth (per 100k, 7-Day Avg)

Sources: Oxford COVID-19 Government Response Tracker, Blavatnik School of Government, Vining Sparks
GOVERNMENT STRINGENCY

OXFORD STRINGENCY INDEX – QUANTIFYING STRINGENCY OF GOVERNMENT RESPONSES VS CASE GROWTH

Sources: Oxford COVID-19 Government Response Tracker, Blavatnik School of Government, Vining Sparks
CASE FATALITY RATE

CASE FATALITY RATE OF COVID-19 HAS BEGUN TO DECLINE AS TESTING HAS INCREASED

Sources: Bloomberg, Vining Sparks
FATALITY RATES BY COUNTRY

Fatality Rate of Confirmed Cases

Lowest 25

Highest 25

Italy

Britain

Mexico

France

Hungary

Canada

Sweden

Spain

Ireland

France

Spain

Iran

Ecuador

San Marino

China

Egypt

Peru

Andorra

Slovenia

Indonesia

Macedonia

Romania

Finland

Burkina Faso

India

Russia

Thailand

Czechoslovakia

Philippines

South Korea

Azerbaijan

Cyprus

Bangladesh

Malaysia

New Zealand

Saudi Arabia

Georgia

Lebanon

Belarus

Slovakia

Oman

Israel

Kuwait

U.A.E.

Iceland

Sierra Leone

Mali

Guinea

Burkina Faso

Cote d’Ivoire

Senegal

Mauritania

Gambia

Niger

Chad

Cameroon

Democratic Republic of the Congo

Eritrea

Somalia

Ethiopia

Botswana

Namibia

Lesotho

Zimbabwe

Zambia

Malawi

Mozambique

Angola

Guinea-Bissau

Equatorial Guinea

Benin

Burundi

Central African Republic

Djibouti

Somalia

Sudan

SOUTH AFRICA

Nigeria

Egypt

Algeria

Morocco

Tunisia

Israel

Kuwait

U.A.E.

Egypt

Switzerland

Peru

Andorra

Slovenia

Indonesia

Macedonia

Romania

Finland

Burkina Faso

India

Russia

Thailand

Czechoslovakia

Philippines

South Korea

Azerbaijan

Cyprus

Bangladesh

Malaysia

New Zealand

Saudi Arabia

Georgia

Lebanon

Belarus

Slovakia

Oman

Israel

Kuwait

U.A.E.

Iceland

Sierra Leone

Mali

Guinea

Burkina Faso

Cote d’Ivoire

Senegal

Mauritania

Gambia

Niger

Chad

Cameroon

Democratic Republic of the Congo

Eritrea

Somalia

Ethiopia

Botswana

Namibia

Lesotho

Zimbabwe

Zambia

Malawi

Mozambique

Angola

Guinea-Bissau

Equatorial Guinea

Benin

Burundi

Central African Republic

Djibouti

Somalia

Sudan

SOUTH AFRICA

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Egypt

Algeria

Morocco

Tunisia

Israel

Kuwait

U.A.E.

Egypt

Switzerland

Peru

Andorra

Slovenia

Indonesia

Macedonia

Romania

Finland

Burkina Faso

India

Russia

Thailand

Czechoslovakia

Philippines

South Korea

Azerbaijan

Cyprus

Bangladesh

Malaysia

New Zealand

Saudi Arabia

Georgia

Lebanon

Belarus

Slovakia

Oman

Israel

Kuwait

U.A.E.

Iceland

Sierra Leone

Mali

Guinea

Burkina Faso

Cote d’Ivoire

Senegal

Mauritania

Gambia

Niger

Chad

Cameroon

Democratic Republic of the Congo

Eritrea

Somalia

Ethiopia

Botswana

Namibia

Lesotho

Zimbabwe

Zambia

Malawi

Mozambique

Angola

Guinea-Bissau

Equatorial Guinea

Benin

Burundi

Central African Republic

Djibouti

Somalia

Sudan

SOUTH AFRICA

Nigeria

Egypt

Algeria

Morocco

Tunisia

Israel

Kuwait
According to guidance from the N.H.C. dated February 6, China will begin classifying coronavirus results into four categories: “suspected cases,” “clinically diagnosed cases,” “positive tests,” and “confirmed cases.” Only patients who test positive for the virus AND who have symptoms will be included in the count of “confirmed cases.” If someone tests positive but shows no symptoms, they will be classified in the “positive tests” category and excluded from the “confirmed cases” count going forward. [Link to N.H.C. Statement]

The N.H.C. begins reporting “clinically diagnosed cases,” those which test positive but without the confirmation of a nucleic acid test, as “confirmed cases.”

[Johns Hopkins CSSE data used beginning March 18 due to lagged reporting from C.D.C. and W.H.O.]