Global cases numbers remain constant and daily deaths are declining slightly. Despite the apparent pause on the epidemic, we are seeing clear evidence of the fall/winter surge unfolding in most of Europe and beginning to unfold in North America. With some exceptions, peaks in India and declines in South America explain why the global case numbers remain stable. We expect the Northern Hemisphere fall/winter surge will increase global daily deaths; this likely will become much more evident in late November and December. Increasing mask use remains the best option for delaying and reducing cumulative death rates.

Current situation

- Daily cases have remained constant in the last four weeks at around 275,000 (Figure 1).
- Daily deaths have declined from 5,400 in the prior week to 5,200 a day this week (Figure 2).
- Effective R, estimated on the basis of cases, hospitalizations, and deaths, is greater than 1 in the northern half the United States, much of Canada, most of Europe, and selected locations in sub-Saharan Africa and Southeast Asia (Figure 3). This pattern is consistent with a seasonal surge in the Northern Hemisphere.
- The daily death rate is over 4 per million in four states in the US, Argentina, several regions in Spain, and Montenegro (Figure 6).

Trends in key drivers of transmission (mobility, mask use, testing, and seasonality)

- National and state mandates have largely remained the same; exceptions include the lifting of educational restrictions in Pakistan, and the re-imposition of some business restrictions in Oman. Many mandates have been re-imposed at local levels in Europe (Figure 7).
- Global mobility has remained flat in the last week. Mobility is more than 30% below pre-COVID-19 baseline in a corridor from Ecuador to Argentina and in India and Myanmar (Figure 8).
- Global mask use has declined slightly, dipping below 60%. Mask use as reported in the Facebook platform surveys has risen above 70% in most of the Americas, South and Southeast Asia, and Southern Europe. Much lower rates are seen in selected US states, Northern and Eastern Europe, and North and West Africa (Figure 9).
- Global testing continues to increase but remains well below 100 per 100,000 (Figure 10).

Projections

- In the reference scenario, the scenario that we think is most likely to occur, daily deaths will exceed 15,000 a day in January (Figure 13).
- Cumulative deaths will likely reach 2.4 million in the reference scenario by February 1 (Figure 12).
- Increasing mask use from approximately 60% to 95% could reduce cumulative mortality to 1.8 million deaths in that period and save 618,000 lives (Figure 12).
- In the reference scenario, government mandates would need to be re-imposed in many countries and regions in the Northern Hemisphere before February 1 (Figure 15).

Model updates

There are no major updates to our model this week. We continue to search for evidence on whether the infection-fatality rate (IFR) has changed during the pandemic. There is a clear shift to younger ages in diagnosed cases. This shift alone would – because of the age dependence of the IFR – reduce the all-age IFR even if treatments have not improved. However, the shift in the age distribution of confirmed cases may be due to the scale-up in testing capacity. Analysis underway of data on individual clinical treatments and outcomes may provide a more direct measure of whether the IFR by age has changed. If the IFR has declined, this would alter our forecasted death rates; to date, however, we have not been able to find sufficient evidence to support this change to our model.

covid.healthdata.org

Institute for Health Metrics and Evaluation
IHME wishes to warmly acknowledge the support of these and others who have made our COVID-19 estimation efforts possible. Thank you.

For all COVID-19 resources at IHME, visit http://www.healthdata.org/covid.

COVID-19 Results Briefing: Global

Institute for Health Metrics and Evaluation (IHME)

October 15, 2020

This briefing contains summary information on the latest projections from the IHME model on COVID-19 globally. The model was run on October 13, 2020.

Model updates

Updates to the model this week include additional data on deaths, cases, and updates on covariates.
Current situation

Figure 1. Reported daily COVID-19 cases
Table 1. Ranking of COVID-19 among the leading causes of mortality this week, assuming uniform deaths of non-COVID causes throughout the year

<table>
<thead>
<tr>
<th>Cause name</th>
<th>Weekly deaths</th>
<th>Ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ischemic heart disease</td>
<td>175,727</td>
<td>1</td>
</tr>
<tr>
<td>Stroke</td>
<td>126,014</td>
<td>2</td>
</tr>
<tr>
<td>Chronic obstructive pulmonary disease</td>
<td>63,089</td>
<td>3</td>
</tr>
<tr>
<td>Lower respiratory infections</td>
<td>47,946</td>
<td>4</td>
</tr>
<tr>
<td>Tracheal, bronchus, and lung cancer</td>
<td>39,282</td>
<td>5</td>
</tr>
<tr>
<td>COVID-19</td>
<td>36,617</td>
<td>6</td>
</tr>
<tr>
<td>Neonatal disorders</td>
<td>36,201</td>
<td>7</td>
</tr>
<tr>
<td>Alzheimer’s disease and other dementias</td>
<td>31,217</td>
<td>8</td>
</tr>
<tr>
<td>Diabetes mellitus</td>
<td>29,830</td>
<td>9</td>
</tr>
<tr>
<td>Diarrheal diseases</td>
<td>29,509</td>
<td>10</td>
</tr>
</tbody>
</table>

Figure 2a. Reported daily COVID-19 deaths and smoothed trend estimate
**Figure 2b.** Estimated cumulative deaths by age group

**Figure 3.** Mean effective R on October 01, 2020. The estimate of effective R is based on the combined analysis of deaths, case reporting and hospitalizations where available. Current reported cases reflect infections 11-13 days prior so estimates of effective R can only be made for the recent past. Effective R less than 1 means that transmission should decline all other things being held the same.
Figure 4. Estimated percent infected with COVID-19 on October 12, 2020

Figure 5. Percent of COVID-19 infections detected. This is estimated as the ratio of reported COVID-19 cases to estimated COVID-19 infections based on the SEIR model.
Figure 6. Daily COVID-19 death rate per 1 million on October 12, 2020
Critical drivers

Figure 7. Total number of mandates
Figure 8a. Trend in mobility as measured through smartphone app use compared to January 2020 baseline

Figure 8b. Mobility level as measured through smartphone app use compared to January 2020 baseline (percent)
Figure 9a. Trend in the proportion of the population reporting always wearing a mask when leaving home.

Figure 9b. Proportion of the population reporting always wearing a mask when leaving home on October 12, 2020.
Figure 10a. Trend in COVID-19 diagnostic tests per 100,000 people

Figure 10b. COVID-19 diagnostic tests per 100,000 people on October 09, 2020
Figure 11. Increase in the risk of death due to pneumonia on February 1 compared to August 1
Projections and scenarios

Figure 12. Cumulative COVID-19 deaths until February 01, 2021 for three scenarios. The reference scenario is our forecast of what we think is most likely to happen. The mandate easing scenario is what would happen if governments continue to ease social distancing mandates. The universal mask mandate scenario is what would happen if mask use increased immediately to 95%.

Fig 13. Daily COVID-19 deaths until February 01, 2021 for three scenarios. The reference scenario is our forecast of what we think is most likely to happen. The mandate easing scenario is what would happen if governments continue to ease social distancing mandates. The universal mask mandate scenario is what would happen if mask use increased immediately to 95%.
**Fig 14.** Daily COVID-19 infections until February 01, 2021 for three scenarios. The reference scenario is our forecast of what we think is most likely to happen. The mandate easing scenario is what would happen if governments continue to ease social distancing mandates. The universal mask mandate scenario is what would happen if mask use increased immediately to 95%.

**Fig 15.** Month of assumed mandate re-implementation. (Month when daily death rate passes 8 per million, when model assumes mandates will be re-imposed.)
Figure 16. Forecasted percent infected with COVID-19 on February 01, 2021

Figure 17. Daily COVID-19 deaths per million forecasted on February 01, 2021 in the reference scenario
Table 2. Ranking of COVID-19 among the leading causes of mortality in the full year 2020. Deaths from COVID-19 are projections of cumulative deaths on Jan 1, 2021 from the reference scenario. Deaths from other causes are from the Global Burden of Disease study 2019 (rounded to the nearest 100).

<table>
<thead>
<tr>
<th>Cause name</th>
<th>Annual deaths</th>
<th>Ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ischemic heart disease</td>
<td>9,137,800</td>
<td>1</td>
</tr>
<tr>
<td>Stroke</td>
<td>6,552,700</td>
<td>2</td>
</tr>
<tr>
<td>Chronic obstructive pulmonary disease</td>
<td>3,280,600</td>
<td>3</td>
</tr>
<tr>
<td>Lower respiratory infections</td>
<td>2,493,200</td>
<td>4</td>
</tr>
<tr>
<td>Tracheal, bronchus, and lung cancer</td>
<td>2,042,600</td>
<td>5</td>
</tr>
<tr>
<td>COVID-19</td>
<td>1,906,160</td>
<td>6</td>
</tr>
<tr>
<td>Neonatal disorders</td>
<td>1,882,400</td>
<td>7</td>
</tr>
<tr>
<td>Alzheimer’s disease and other dementias</td>
<td>1,623,300</td>
<td>8</td>
</tr>
<tr>
<td>Diabetes mellitus</td>
<td>1,551,200</td>
<td>9</td>
</tr>
<tr>
<td>Diarrheal diseases</td>
<td>1,534,400</td>
<td>10</td>
</tr>
</tbody>
</table>

Mask data source: Premise; Facebook Global symptom survey (This research is based on survey results from University of Maryland Social Data Science Center); Kaiser Family Foundation; YouGov COVID-19 Behaviour Tracker survey

A note of thanks:

We would like to extend a special thanks to the Pan American Health Organization (PAHO) for key data sources; our partners and collaborators in Argentina, Brazil, Bolivia, Chile, Colombia, Cuba, the Dominican Republic, Ecuador, Egypt, Honduras, Israel, Japan, Malaysia, Mexico, Moldova, Panama, Peru, the Philippines, Russia, Serbia, South Korea, Turkey, and Ukraine for their support and expert advice; and to the tireless data collection and collation efforts of individuals and institutions throughout the world.

In addition, we wish to express our gratitude for efforts to collect social distancing policy information in Latin America to University of Miami Institute for Advanced Study of the Americas (Felicia Knaul, Michael Touchton), with data published here: http://observcovid.miami.edu/; Fundación Mexicana para la Salud (Héctor Arreola-Ornelas) with support from the GDS Services International: Tómatelo a Pecho A.C.; and Centro de Investigaciones en Ciencias de la Salud, Universidad Anáhuac (Héctor Arreola-Ornelas); Lab on Research, Ethics, Aging and Community-Health at Tufts University (REACH Lab) and the University of Miami Institute for Advanced Study of the Americas (Thalia Porteny).

Further, IHME is grateful to the Microsoft AI for Health program for their support in hosting our COVID-19 data visualizations on the Azure Cloud. We would like to also extend a warm thank you to the many others who have made our COVID-19 estimation efforts possible.