COVID-19 Results Briefing

Iraq

January 14, 2021

This document contains summary information on the latest projections from the IHME model on COVID-19 in Iraq. The model was run on January 13, 2021, with data through January 11, 2021.

Current situation

- Daily reported cases in the last week decreased to about 700 per day on average compared to about 900 the week before (Figure 1).
- Daily deaths in the last week were about 10 per day on average (Figure 2). This makes COVID-19 the number 16 cause of death in Iraq this week (Table 1).
- Effective R, computed using cases, hospitalizations, and deaths, on December 31 was 0.8 (Figure 3).
- We estimated that 20% of people in Iraq have been infected as of January 11 (Figure 4).
- The daily death rate is greater than less than 1 per million (Figure 6).

Trends in drivers of transmission

- In the last week, no new mandates have been imposed and no mandates have been lifted (Table 2).
- Mobility last week was similar to that observed at the pre-COVID-19 baseline (Figure 8).
- As of January 11, we estimated that 31% of people always wore a mask when leaving their home (Figure 9).
- There were 89 diagnostic tests per 100,000 people on January 11 (Figure 10).
- In Iraq, 59.3% of people say they would accept a vaccine for COVID-19 and 21.3% say they are unsure if they would accept one (Figure 12).
- We expect that 5 million people will be vaccinated by May 1 (Figure 13).

Projections

- In our reference scenario, which represents what we think is most likely to happen, our model projects about 13,000 cumulative deaths on May 1, 2021. Daily deaths peaked at 10 on January 12, 2021 (Figure 15).
- Under our mandates easing scenario, our model projects about 13,000 cumulative deaths on May 1, 2021 (Figure 14).
• We estimate that 73.3% of people will still be susceptible on May 1, 2021 (Figure 17).

• Figure 21 compares our reference scenario forecasts to other publicly archived models. Forecasts are widely divergent.

• At some point from January through May 1, Iraq will have high or extreme stress on hospital bed and ICU capacity (Figures 22 and 23).

Model updates

Methods have not been changed in this week’s update. Reported data on vaccination scale-up for select countries has led us to revise the expected rates of vaccination. For some countries, the revision has reduced the expected vaccination rates, and for others – such as Israel – the revision has increased expected vaccination rates.
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>901</td>
<td>1</td>
</tr>
<tr>
<td>Stroke</td>
<td>505</td>
<td>2</td>
</tr>
<tr>
<td>Diabetes mellitus</td>
<td>178</td>
<td>3</td>
</tr>
<tr>
<td>Chronic kidney disease</td>
<td>152</td>
<td>4</td>
</tr>
<tr>
<td>Neonatal disorders</td>
<td>140</td>
<td>5</td>
</tr>
<tr>
<td>Road injuries</td>
<td>108</td>
<td>6</td>
</tr>
<tr>
<td>Interpersonal violence</td>
<td>93</td>
<td>7</td>
</tr>
<tr>
<td>Exposure to mechanical forces</td>
<td>91</td>
<td>8</td>
</tr>
<tr>
<td>Tracheal, bronchus, and lung cancer</td>
<td>81</td>
<td>9</td>
</tr>
<tr>
<td>Congenital birth defects</td>
<td>71</td>
<td>10</td>
</tr>
<tr>
<td>COVID-19</td>
<td>48</td>
<td>16</td>
</tr>
</tbody>
</table>

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

**Figure 3.** Mean effective R on December 31, 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 of the population infected with COVID-19 on January 11, 2021

Figure 5. Percent of COVID-19 infections detected. This is estimated as the ratio of reported daily COVID-19 cases to estimated daily COVID-19 infections based on the SEIR disease transmission model.
Figure 6. Daily COVID-19 death rate per 1 million on January 11, 2021
## Critical drivers

**Table 2.** Current mandate implementation

*Not all locations are measured at the subnational level.
**Figure 7.** Total number of social distancing mandates (including mask use)
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) on January 11, 2021
**Figure 9a.** Trend in the proportion of the population reporting always wearing a mask when leaving home

![Graph showing trend in mask wearing](image)

**Figure 9b.** Proportion of the population reporting always wearing a mask when leaving home on January 11, 2021

![Map showing mask wearing percentages](image)
**Figure 10a.** Trend in COVID-19 diagnostic tests per 100,000 people

**Figure 10b.** COVID-19 diagnostic tests per 100,000 people on December 31, 2020
Figure 11. Increase in the risk of death due to pneumonia on February 1, 2020 compared to August 1, 2020.
**Figure 12.** This figure shows the estimated proportion of the adult (18+) population that is open to receiving a COVID-19 vaccine based on Facebook survey responses (yes and unsure).

**Figure 13.** The number of people who receive any vaccine and those who are immune, accounting for efficacy, loss to follow up for two-dose vaccines, partial immunity after one dose, and immunity after two doses.
Projections and scenarios

We produce six scenarios when projecting COVID-19. The reference scenario is our forecast of what we think is most likely to happen. We assume that if the daily mortality rate from COVID-19 reaches 8 per million, social distancing (SD) mandates will be re-imposed. The mandate easing scenario is what would happen if governments continue to ease social distancing mandates with no re-imposition. The universal mask mandate scenario is what would happen if mask use increased immediately to 95% and social distancing mandates were re-imposed at 8 deaths per million. These three scenarios assume our reference vaccine delivery scale up where vaccine delivery will scale to full capacity over 90 days.

The rapid vaccine rollout scenario assumes that vaccine distribution will scale up to full delivery capacity in half the time as the reference delivery scenario and that the maximum doses that can be delivered per day is twice as much as the reference delivery scenario. The rapid vaccine rollout to high-risk populations scenario is the same but high-risk populations are vaccinated before essential workers or other adults. The no vaccine scenario is the same as our reference scenario but with no vaccine use.
Figure 14. Cumulative COVID-19 deaths until May 01, 2021 for six scenarios

![Cumulative COVID-19 deaths until May 01, 2021 for six scenarios](image)

Figure 15. Daily COVID-19 deaths until May 01, 2021 for six scenarios

![Daily COVID-19 deaths until May 01, 2021 for six scenarios](image)
**Figure 16.** Daily COVID-19 infections until May 01, 2021 for six scenarios

![Graph showing daily COVID-19 infections](image)

- **Reference scenario**
- **Rapid rollout**
- **Universal mask use**
- **Continued SD mandate easing**
- **Rapid rollout to high-risk**
- **No vaccine**

**Figure 17.** Susceptible population, accounting for infections and people immune through vaccination

![Graph showing susceptible population](image)

- **Reference scenario**
- **Rapid rollout**
- **Universal mask use**
- **Continued SD mandate easing**
- **Rapid rollout to high-risk**
- **No vaccine**
Figure 18. Month of assumed mandate re-implementation. (Month when daily death rate passes 8 per million, when reference scenario model assumes mandates will be re-imposed.)
Figure 19. Forecasted percent infected with COVID-19 on May 01, 2021

Figure 20. Daily COVID-19 deaths per million forecasted on May 01, 2021 in the reference scenario
Figure 21. Comparison of reference model projections with other COVID modeling groups. For this comparison, we are including projections of daily COVID-19 deaths from other modeling groups when available: Delphi from the Massachusetts Institute of Technology (Delphi; https://www.covidanalytics.io/home), Imperial College London (Imperial; https://www.covidsim.org), The Los Alamos National Laboratory (LANL; https://covid-19.bsvgateway.org/), and the SI-KJalpha model from the University of Southern California (SIKJalpha; https://github.com/scc-usc/ReCOVER-COVID-19). Daily deaths from other modeling groups are smoothed to remove inconsistencies with rounding. Regional values are aggregates from available locations in that region.
Figure 22. The estimated inpatient hospital usage is shown over time. The percent of hospital beds occupied by COVID-19 patients is color coded based on observed quantiles of the maximum proportion of beds occupied by COVID-19 patients. Less than 5% is considered low stress, 5-9% is considered moderate stress, 10-19% is considered high stress, and greater than 20% is considered extreme stress.
Figure 23. The estimated intensive care unit (ICU) usage is shown over time. The percent of ICU beds occupied by COVID-19 patients is color coded based on observed quantiles of the maximum proportion of ICU beds occupied by COVID-19 patients. Less than 10% is considered low stress, 10-29% is considered moderate stress, 30-59% is considered high stress, and greater than 60% is considered extreme stress.
Table 3. 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>46,800</td>
<td>1</td>
</tr>
<tr>
<td>Stroke</td>
<td>26,300</td>
<td>2</td>
</tr>
<tr>
<td>COVID-19</td>
<td>12,829</td>
<td>3</td>
</tr>
<tr>
<td>Diabetes mellitus</td>
<td>9,300</td>
<td>4</td>
</tr>
<tr>
<td>Chronic kidney disease</td>
<td>7,900</td>
<td>5</td>
</tr>
<tr>
<td>Neonatal disorders</td>
<td>7,300</td>
<td>6</td>
</tr>
<tr>
<td>Road injuries</td>
<td>5,600</td>
<td>7</td>
</tr>
<tr>
<td>Interpersonal violence</td>
<td>4,800</td>
<td>8</td>
</tr>
<tr>
<td>Exposure to mechanical forces</td>
<td>4,700</td>
<td>9</td>
</tr>
<tr>
<td>Tracheal, bronchus, and lung cancer</td>
<td>4,200</td>
<td>10</td>
</tr>
</tbody>
</table>
More information

Data sources:

Mask use data sources include PREMISE; Facebook Global symptom survey (This research is based on survey results from University of Maryland Social Data Science Center) and the Facebook United States symptom survey (in collaboration with Carnegie Mellon University); Kaiser Family Foundation; YouGov COVID-19 Behaviour Tracker survey.

Vaccine hesitancy data are from the COVID-19 Beliefs, Behaviors, and Norms Study, a survey conducted on Facebook by the Massachusetts Institute of Technology (https://covidsurvey.mit.edu/).

Data on vaccine candidates, stages of development, manufacturing capacity, and pre-purchasing agreements are primarily from Linksbridge and supplemented by Duke University.

A note of thanks:

We wish to warmly acknowledge the support of these and others who have made our covid-19 estimation efforts possible.

More information:

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