COVID-19 Results Briefing

The Eastern Mediterranean Region

February 18, 2022

This document contains summary information on the latest projections from the IHME model on COVID-19 in the Eastern Mediterranean Region. The model was run on February 17, 2022, with data through February 14, 2022.

Current situation

In the majority of the countries in the area, the Omicron wave has already dissipated or is beginning to dissipate. In March, most countries would have reached the lowest numbers of cases, hospitalizations, and deaths. In a few countries, however, such as Kuwait, Egypt, and Yemen, a second wave is projected throughout April.

• Daily infections in the last week decreased to 3,066,000 per day on average compared to 4,966,000 the week before (Figure 1.1). Daily hospital census in the last week (through February 14) decreased to 78,000 per day on average compared to 86,000 the week before.

• Daily reported cases in the last week decreased to 90,000 per day on average compared to 111,000 the week before (Figure 2.1).

• Reported deaths due to COVID-19 in the last week increased to 490 per day on average compared to 370 the week before (Figure 3.1).

• Total deaths due to COVID-19 in the last week increased to 2,800 per day on average compared to 2,500 the week before (Figure 3.1). This makes COVID-19 the number 1 cause of death in the Eastern Mediterranean Region this week (Table 1). Estimated total daily deaths due to COVID-19 in the past week were 5.7 times larger than the reported number of deaths.

• The daily rate of reported deaths due to COVID-19 is greater than 4 per million in two countries and no subnational locations (Figure 4.1).

• The daily rate of total deaths due to COVID-19 is greater than 4 per million in 10 countries and one subnational location (Figure 4.2).

• We estimate that 75% of people in the Eastern Mediterranean Region have been infected at least once as of February 14 (Figure 6.1). Effective R, computed using cases, hospitalizations, and deaths, is greater than 1 in two countries and one subnational location (Figure 7.1).

• The infection-detection rate in the Eastern Mediterranean Region was close to 1% on February 14 (Figure 8.1).
Based on the GISAID and various national databases, combined with our variant spread model, we estimate the current prevalence of variants of concern (Figures 9.1–9.5). We estimate that the Alpha variant is circulating in 21 countries and six subnational locations, that the Beta variant is circulating in 19 countries and two subnational locations, that the Delta variant is circulating in 22 countries and seven subnational locations, that the Gamma variant is circulating in 20 countries and five subnational locations, and that the Omicron variant is circulating in 22 countries and seven subnational locations.

Trends in drivers of transmission

- Mobility last week was 32% higher than the pre-COVID-19 baseline (Figure 11.1). Mobility was lower than 30% of baseline in no locations.
- As of February 14, in the COVID-19 Trends and Impact Survey, 36% of people self-report that they always wore a mask when leaving their home compared to 37% last week (Figure 13.1).
- There were 151 diagnostic tests per 100,000 people on February 14 (Figure 15.1).
- As of February 14, seven countries have reached 70% or more of the population who have received at least one vaccine dose, and four countries have reached 70% or more of the population who are fully vaccinated (Figure 17.1). 44% of people in the Eastern Mediterranean Region have received at least one vaccine dose, and 38% are fully vaccinated.
- In the Eastern Mediterranean Region, 72.3% of the population that is 12 years and older say they would accept, or would probably accept, a vaccine for COVID-19. Note that vaccine acceptance is calculated using survey data from the 18+ population. This is down by 0.2 percentage points from last week. The proportion of the population who are open to receiving a COVID-19 vaccine ranges from 36% in Djibouti to 100% in United Arab Emirates (Figure 19.1).
- In our current reference scenario, we expect that 360.5 million people will be vaccinated with at least one dose by June 1 (Figure 20.1). We expect that 45% of the population will be fully vaccinated by June 1.

Projections and scenarios

We produce three scenarios when projecting COVID-19. The reference scenario is our forecast of what we think is most likely to happen:

- Vaccines are distributed at the expected pace. Brand- and variant-specific vaccine efficacy is updated using the latest available information from peer-reviewed publications and other reports.
- Future mask use is the mean of mask use over the last seven days.
• Mobility increases as vaccine coverage increases.

• Omicron variant spreads according to our flight and local spread model.

• 80% of those who have had two doses of vaccine (or one dose for Johnson & Johnson) receive a third dose at six months after their second dose.

The **80% mask use scenario** makes all the same assumptions as the reference scenario but assumes all locations reach 80% mask use within seven days. If a location currently has higher than 80% use, mask use remains at the current level.

The **third dose scenario** is the same as the reference scenario but assumes that 100% of those who have received two doses of vaccine will get a third dose at six months.

**Projections**

**Infections**

• Daily estimated infections in the **reference scenario** will decline to 213,510 by June 1, 2022 (Figure 22.1).

• Daily estimated infections in the **80% mask use scenario** will decline to 60,710 by June 1, 2022 (Figure 22.1).

• Daily estimated infections in the **third dose scenario** will decline to 172,760 by June 1, 2022 (Figure 22.1).

**Cases**

• Daily estimated cases in the **reference scenario** will decline to 2,720 by June 1, 2022 (Figure 22.2).

• Daily estimated cases in the **80% mask use scenario** will decline to 1,310 by June 1, 2022 (Figure 22.2).

• Daily estimated cases in the **third dose scenario** will decline to 1,870 by June 1, 2022 (Figure 22.2).

**Hospitalizations**

• Daily hospital census in the **reference scenario** will decline to 3,230 by June 1, 2022 (Figure 22.3).

• Daily hospital census in the **80% mask use scenario** will decline to 1,060 by June 1, 2022 (Figure 22.3).

• Daily hospital census in the **third dose scenario** will decline to 2,460 by June 1, 2022 (Figure 22.3).
Deaths

- In our **reference scenario**, our model projects 346,000 cumulative reported deaths due to COVID-19 on June 1. This represents 18,000 additional deaths from February 14 to June 1. Daily reported COVID-19 deaths in the **reference scenario** will rise to 680 by February 19, 2022 (Figure 22.4).

- Under our **reference scenario**, our model projects 1,790,000 cumulative total deaths due to COVID-19 on June 1. This represents 91,000 additional deaths from February 14 to June 1 (Figure 25.2).

- In our **80% mask use scenario**, our model projects 343,000 cumulative reported deaths due to COVID-19 on June 1. This represents 15,000 additional deaths from February 14 to June 1. Daily reported COVID-19 deaths in the **80% mask use scenario** will rise to 680 by February 19, 2022 (Figure 22.4).

- In our **third dose scenario**, our model projects 344,000 cumulative reported deaths due to COVID-19 on June 1. This represents 17,000 additional deaths from February 14 to June 1. Daily reported COVID-19 deaths in the **third dose scenario** will rise to 660 by February 19, 2022 (Figure 22.4).

- Figure 23.1 compares our reference scenario forecasts to other publicly archived models. Forecasts are widely divergent.

- At some point from February through June 1, four countries will have high or extreme stress on hospital beds (Figure 24.1). At some point from February through June 1, 14 countries will have high or extreme stress on intensive care unit (ICU) capacity (Figure 25.1).
Model updates
No model updates.
Figure 1.1: Daily COVID-19 hospital census and estimated infections

Figure 2.1: Reported daily COVID-19 cases, moving average
The Eastern Mediterranean Region

Table 1: Ranking of total deaths due to 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>COVID-19</td>
<td>19,448</td>
<td>1</td>
</tr>
<tr>
<td>Ischemic heart disease</td>
<td>15,912</td>
<td>2</td>
</tr>
<tr>
<td>Neonatal disorders</td>
<td>7,028</td>
<td>3</td>
</tr>
<tr>
<td>Stroke</td>
<td>6,729</td>
<td>4</td>
</tr>
<tr>
<td>Lower respiratory infections</td>
<td>3,385</td>
<td>5</td>
</tr>
<tr>
<td>Road injuries</td>
<td>2,935</td>
<td>6</td>
</tr>
<tr>
<td>Cirrhosis and other chronic liver diseases</td>
<td>2,806</td>
<td>7</td>
</tr>
<tr>
<td>Chronic kidney disease</td>
<td>2,501</td>
<td>8</td>
</tr>
<tr>
<td>Diabetes mellitus</td>
<td>2,403</td>
<td>9</td>
</tr>
<tr>
<td>Diarrheal diseases</td>
<td>2,386</td>
<td>10</td>
</tr>
</tbody>
</table>

Figure 3.1: Smoothed trend estimate of reported daily COVID-19 deaths (blue) and total daily deaths due to COVID-19 (orange)
Daily COVID-19 death rate per 1 million on February 14, 2022

Figure 4.1: Daily reported COVID-19 death rate per 1 million

Figure 4.2: Daily total COVID-19 death rate per 1 million
Cumulative COVID-19 deaths per 100,000 on February 14, 2022

Figure 5.1: Reported cumulative COVID-19 deaths per 100,000

Figure 5.2: Total cumulative COVID-19 deaths per 100,000
Figure 6.1: Estimated percent of the population infected with COVID-19 on February 14, 2022

Figure 7.1: Mean effective R on February 3, 2022. Effective R less than 1 means that transmission should decline, all other things being held the same. 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.
**Figure 8.1: Percent of estimated 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. Due to measurement errors in cases and testing rates, the infection-detection rate can exceed 100% at particular points in time.
Estimated percent of circulating SARS-CoV-2 for primary variant families on February 14, 2022

**Figure 9.1:** Estimated percent of new infections that are Alpha variant

**Figure 9.2:** Estimated percent of new infections that are Beta variant
The Eastern Mediterranean Region

Figure 9.3: Estimated percent of new infections that are Delta variant

Figure 9.4: Estimated percent of new infections that are Gamma variant
Figure 9.5: Estimated percent of new infections that are Omicron variant
Figure 10.1: Infection-fatality rate on February 14, 2022. This is estimated as the ratio of COVID-19 deaths to estimated daily COVID-19 infections.
Critical drivers

Table 2: Current mandate implementation

| Location                     | Primary school closure | Secondary school closure | Higher school closure | Entry restrictions for some non-residents | Entry restrictions for all non-residents | Individual movements restricted | Curfew for businesses | Individual curfew | Gathering limit: 6 indoor, 10 outdoor | Gathering limit: 10 indoor, 25 outdoor | Gathering limit: 25 indoor, 50 outdoor | Gathering limit: 50 indoor, 100 outdoor | Gathering limit: 100 indoor, 250 outdoor | Restaurants closed | Bars closed | Restaurants / bars closed | Restaurants / bars curbside only | Gyms, pools, other leisure closed | Non-essential retail closed | Non-essential workplaces closed | Stay home order | Stay home fine | Mask mandate | Mask mandate fine |
|------------------------------|------------------------|--------------------------|-----------------------|-----------------------------------------|-----------------------------------------|---------------------------------------|-----------------------|-------------------|----------------------------------------|----------------------------------------|----------------------------------------|----------------------------------------|----------------------------------------|----------------|----------------|------------------|----------------|---------------|----------------|----------------|
| Afghanistan                  |                         |                          |                       |                                         |                                         |                                       |                       |                   |                                        |                                        |                                        |                                        |                                        |                |               |                  |                |               |
| Bahrain                      |                         |                          |                       |                                         |                                         |                                       |                       |                   |                                        |                                        |                                        |                                        |                                        |                |               |                  |                |               |
| Djibouti                     |                         |                          |                       |                                         |                                         |                                       |                       |                   |                                        |                                        |                                        |                                        |                                        |                |               |                  |                |               |
| Egypt                        |                         |                          |                       |                                         |                                         |                                       |                       |                   |                                        |                                        |                                        |                                        |                                        |                |               |                  |                |               |
| Iran (Islamic Republic of)   |                         |                          |                       |                                         |                                         |                                       |                       |                   |                                        |                                        |                                        |                                        |                                        |                |               |                  |                |               |
| Iraq                         |                         |                          |                       |                                         |                                         |                                       |                       |                   |                                        |                                        |                                        |                                        |                                        |                |               |                  |                |               |
| Jordan                       |                         |                          |                       |                                         |                                         |                                       |                       |                   |                                        |                                        |                                        |                                        |                                        |                |               |                  |                |               |
| Kuwait                       |                         |                          |                       |                                         |                                         |                                       |                       |                   |                                        |                                        |                                        |                                        |                                        |                |               |                  |                |               |
| Lebanon                      |                         |                          |                       |                                         |                                         |                                       |                       |                   |                                        |                                        |                                        |                                        |                                        |                |               |                  |                |               |
| Libya                        |                         |                          |                       |                                         |                                         |                                       |                       |                   |                                        |                                        |                                        |                                        |                                        |                |               |                  |                |               |
| Morocco                      |                         |                          |                       |                                         |                                         |                                       |                       |                   |                                        |                                        |                                        |                                        |                                        |                |               |                  |                |               |
| Oman                         |                         |                          |                       |                                         |                                         |                                       |                       |                   |                                        |                                        |                                        |                                        |                                        |                |               |                  |                |               |
| Pakistan                     |                         |                          |                       |                                         |                                         |                                       |                       |                   |                                        |                                        |                                        |                                        |                                        |                |               |                  |                |               |
| Palestine                    |                         |                          |                       |                                         |                                         |                                       |                       |                   |                                        |                                        |                                        |                                        |                                        |                |               |                  |                |               |
| Qatar                        |                         |                          |                       |                                         |                                         |                                       |                       |                   |                                        |                                        |                                        |                                        |                                        |                |               |                  |                |               |
| Saudi Arabia                 |                         |                          |                       |                                         |                                         |                                       |                       |                   |                                        |                                        |                                        |                                        |                                        |                |               |                  |                |               |
| Somalia                      |                         |                          |                       |                                         |                                         |                                       |                       |                   |                                        |                                        |                                        |                                        |                                        |                |               |                  |                |               |
| Sudan                        |                         |                          |                       |                                         |                                         |                                       |                       |                   |                                        |                                        |                                        |                                        |                                        |                |               |                  |                |               |
| Syrian Arab Republic         |                         |                          |                       |                                         |                                         |                                       |                       |                   |                                        |                                        |                                        |                                        |                                        |                |               |                  |                |               |
| Tunisia                      |                         |                          |                       |                                         |                                         |                                       |                       |                   |                                        |                                        |                                        |                                        |                                        |                |               |                  |                |               |
| United Arab Emirates         |                         |                          |                       |                                         |                                         |                                       |                       |                   |                                        |                                        |                                        |                                        |                                        |                |               |                  |                |               |
| Yemen                        |                         |                          |                       |                                         |                                         |                                       |                       |                   |                                        |                                        |                                        |                                        |                                        |                |               |                  |                |               |

*Not all locations are measured at the subnational level.
Figure 11.1: Trend in mobility as measured through smartphone app use, compared to January 2020 baseline

The graph shows the percent reduction from average mobility for different regions over time. The x-axis represents dates from December 2019 to February 2022, and the y-axis represents the percent reduction from average mobility. The graph includes lines for the African Region, South-East Asia Region, Eastern Mediterranean Region, Region of the Americas, European Region, and Western Pacific Region.
Figure 12.1: Mobility level as measured through smartphone app use, compared to January 2020 baseline (percent) on February 14, 2022
Figure 13.1: Trend in the proportion of the population reporting always wearing a mask when leaving home

Figure 14.1: Proportion of the population reporting always wearing a mask when leaving home on February 14, 2022
Figure 15.1: Trend in COVID-19 diagnostic tests per 100,000 people

Figure 16.1: COVID-19 diagnostic tests per 100,000 people on February 14, 2022
Table 3: Estimates of vaccine effectiveness for specific vaccines used in the model at preventing severe disease and infection. We use data from clinical trials directly, where available, and make estimates otherwise. More information can be found on our website.

<table>
<thead>
<tr>
<th>Vaccine</th>
<th>Ancestral</th>
<th>Alpha</th>
<th>Beta</th>
<th>Gamma</th>
<th>Delta</th>
<th>Omicron</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Severe disease</td>
<td>Infection</td>
<td>Severe disease</td>
<td>Infection</td>
<td>Severe disease</td>
<td>Infection</td>
</tr>
<tr>
<td>AstraZeneca</td>
<td>94%</td>
<td>63%</td>
<td>94%</td>
<td>63%</td>
<td>94%</td>
<td>69%</td>
</tr>
<tr>
<td>CanSino</td>
<td>60%</td>
<td>62%</td>
<td>66%</td>
<td>62%</td>
<td>64%</td>
<td>61%</td>
</tr>
<tr>
<td>CoronaVac</td>
<td>50%</td>
<td>47%</td>
<td>50%</td>
<td>47%</td>
<td>49%</td>
<td>46%</td>
</tr>
<tr>
<td>Covaxin</td>
<td>78%</td>
<td>73%</td>
<td>78%</td>
<td>73%</td>
<td>76%</td>
<td>72%</td>
</tr>
<tr>
<td>Johnson &amp; Johnson</td>
<td>86%</td>
<td>72%</td>
<td>86%</td>
<td>72%</td>
<td>76%</td>
<td>64%</td>
</tr>
<tr>
<td>Moderna</td>
<td>97%</td>
<td>92%</td>
<td>97%</td>
<td>92%</td>
<td>97%</td>
<td>91%</td>
</tr>
<tr>
<td>Novavax</td>
<td>89%</td>
<td>83%</td>
<td>89%</td>
<td>83%</td>
<td>86%</td>
<td>82%</td>
</tr>
<tr>
<td>Pfizer/BioNTech</td>
<td>95%</td>
<td>86%</td>
<td>95%</td>
<td>86%</td>
<td>95%</td>
<td>84%</td>
</tr>
<tr>
<td>Sinopharm</td>
<td>73%</td>
<td>68%</td>
<td>73%</td>
<td>68%</td>
<td>71%</td>
<td>67%</td>
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<tr>
<td>Sputnik-V</td>
<td>92%</td>
<td>86%</td>
<td>92%</td>
<td>86%</td>
<td>89%</td>
<td>85%</td>
</tr>
<tr>
<td>Other vaccines</td>
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<td>75%</td>
<td>70%</td>
<td>73%</td>
<td>69%</td>
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<td>Other vaccines</td>
<td>91%</td>
<td>86%</td>
<td>91%</td>
<td>86%</td>
<td>88%</td>
<td>85%</td>
</tr>
</tbody>
</table>

(covid19.healthdata.org) Institute for Health Metrics and Evaluation
Percent of the population having received at least one dose (17.1) and fully vaccinated against SARS-CoV-2 (17.2) by February 14, 2022

Figure 17.1: Percent of the population having received one dose of a COVID-19 vaccine

Figure 17.2: Percent of the population fully vaccinated against SARS-CoV-2
The Eastern Mediterranean Region

Figure 18.1: Trend in the estimated proportion of the population that is 12 years and older that has been vaccinated or would probably or definitely receive the COVID-19 vaccine if available. Note that vaccine acceptance is calculated using survey data from the 18+ population.

Figure 19.1: Estimated proportion of the population that is 12 years and older that has been vaccinated or would probably or definitely receive the COVID-19 vaccine if available. Note that vaccine acceptance is calculated using survey data from the 18+ population.
Figure 20.1: Percent of people who receive at least one dose of a COVID-19 vaccine and those who are fully vaccinated

Figure 21.1: Percent of people who are immune to Delta or Omicron. Immunity is based on protection due to prior vaccination and infection(s). Moreover, variant-specific immunity is also based on variant-variant specific protection.
The Eastern Mediterranean Region

Projections and scenarios

Figure 22.1: Daily COVID-19 infections until June 01, 2022 for three scenarios

Figure 22.2: Daily COVID-19 reported cases until June 01, 2022 for three scenarios
Figure 22.3: Daily COVID-19 hospital census until June 01, 2022 for three scenarios
Figure 22.4: Reported daily COVID-19 deaths per 100,000
Figure 22.5: Total daily COVID-19 deaths per 100,000
Figure 23.1: 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, last model update in brackets: Delphi from the Massachusetts Institute of Technology (Delphi) [February 17, 2022], Imperial College London (Imperial) [January 2, 2022], the SI-KJalpha model from the University of Southern California (SIKJalpha) [February 17, 2022]. Daily deaths from other modeling groups are smoothed to remove inconsistencies with rounding. Regional values are aggregates from available locations in that region.
Figure 24.1: 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 20% or greater is considered extreme stress.

All hospital beds

Stress level

- Low
- Moderate
- High
- Extreme

Afghanistan
Bahrain
Djibouti
Egypt
Iran
Iraq
Jordan
Kuwait
Lebanon
Libya
Morocco
Oman
Pakistan
Palestine
Qatar
Saudi Arabia
Somalia
Sudan
Syria
Tunisia
United Arab Emirates
Yemen
Figure 25.1: 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 60% or greater is considered extreme stress.
More information

Data sources:
Mask use and vaccine confidence data are from the The Delphi Group at Carnegie Mellon University and University of Maryland COVID-19 Trends and Impact Surveys, in partnership with Facebook. Mask use data are also from Premise, the Kaiser Family Foundation, and the YouGov COVID-19 Behaviour Tracker survey.
Genetic sequence and metadata are primarily from the GISAID Initiative. Further details available on the COVID-19 model FAQ page.

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.
To download our most recent results, visit our Data downloads page.