COVID-19 Results Briefing

The African Region

February 18, 2022

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

The Omicron wave continues to recede in the African Region. Estimated infections declined to 593,000 on average per day and daily reported cases declined to 5,600, while daily reported deaths remained steady at 200. Based on previous infection, the current wave of Omicron, and vaccination, we estimate that nearly 45% of people are immune to Omicron in the African Region. In our reference scenario, which does not include the emergence of a new variant, we expect transmission, reported cases, hospitalizations, and reported deaths to maintain low levels through June. Given seasonality, we expect a very slight increase in transmission during the Southern Hemisphere’s winter months, though this increase is not expected to lead to a large increase in deaths or hospitalizations. We expect countries to continue to ease mandates, and these steps should not lead to a substantial increase in transmission given we believe the declines in cases are likely due to the exhaustion of the number of susceptible individuals in the population.

While the current trajectory is very favorable, several steps should be taken to protect against risks from future variants. First, surveillance efforts should be maintained and strengthened so that if a new variant emerges anywhere in the world, the African Region is prepared in advance. Second, production of effective antivirals should be accelerated if possible so that sufficient doses are available if a new variant, particularly one that is more severe than Omicron, emerges. Even in the absence of a new variant, likely increases in Omicron transmission in the winter months mean antivirals will be necessary. Third, efforts to increase access to vaccination by all means possible and to persuade the unvaccinated to get vaccinated should continue. Fourth, even as most individuals return to pre-COVID-19 activities, vulnerable individuals at risk should take precautions if and when transmission increases. These precautions should include using a high-quality mask, avoiding high-risk indoor settings, and social distancing.

Current situation

- Daily infections in the last week decreased to 593,000 per day on average compared to 713,000 the week before (Figure 1.1). Daily hospital census in the last week (through February 14) decreased to 18,000 per day on average compared to 20,000 the week before.

- Daily reported cases in the last week decreased to 5,600 per day on average compared to 7,300 the week before (Figure 2.1).
• Reported deaths due to COVID-19 in the last week remained the same at 200 per day on average compared to the week before (Figure 3.1).

• Total deaths due to COVID-19 in the last week decreased to 1,500 per day on average compared to 1,900 the week before (Figure 3.1). This makes COVID-19 the number 6 cause of death in the African Region this week (Table 1). Estimated total daily deaths due to COVID-19 in the past week were 7.6 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 no countries (Figure 4.1).

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

• We estimate that 67% of people in African 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 five countries (Figure 7.1).

• The infection-detection rate in African 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 42 countries, that the Beta variant is circulating in 41 countries, that the Delta variant is circulating in 47 countries, that the Gamma variant is circulating in 27 countries, and that the Omicron variant is circulating in 47 countries.

Trends in drivers of transmission

• Mobility last week was 31% 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, 39% of people self-report that they always wore a mask when leaving their home compared to 40% last week (Figure 13.1).

• There were 18 diagnostic tests per 100,000 people on February 14 (Figure 15.1).

• As of February 14, two countries have reached 70% or more of the population who have received at least one vaccine dose, and one country has reached 70% or more of the population who are fully vaccinated (Figure 17.1). 14% of people in the African Region have received at least one vaccine dose, and 10% are fully vaccinated.
• In the African Region, 57.7% 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 0.6 percentage points from last week. The proportion of the population who are open to receiving a COVID-19 vaccine ranges from 31% in Namibia to 87% in Cabo Verde (Figure 19.1).

• In our current reference scenario, we expect that 214.9 million people will be vaccinated with at least one dose by June 1 (Figure 20.1). We expect that 15% 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 rise to 743,880 by May 18, 2022 (Figure 22.1).

• Daily estimated infections in the 80% mask use scenario will decline to 189,440 by March 22, 2022 (Figure 22.1).

• Daily estimated infections in the third dose scenario will rise to 667,490 by May 20, 2022 (Figure 22.1).
Cases

- Daily estimated cases in the **reference scenario** will decline to 2,240 by April 3, 2022 (Figure 22.2).
- Daily estimated cases in the **80% mask use scenario** will decline to 1,090 by April 16, 2022 (Figure 22.2).
- Daily estimated cases in the **third dose scenario** will decline to 1,960 by April 5, 2022 (Figure 22.2).

Hospitalizations

- Daily hospital census in the **reference scenario** will rise to 18,410 by February 17, 2022 (Figure 22.3).
- Daily hospital census in the **80% mask use scenario** will rise to 18,390 by February 17, 2022 (Figure 22.3).
- Daily hospital census in the **third dose scenario** will rise to 17,760 by February 17, 2022 (Figure 22.3).

Deaths

- In our **reference scenario**, our model projects 170,000 cumulative reported deaths due to COVID-19 on June 1. This represents 3,800 additional deaths from February 14 to June 1. Daily reported COVID-19 deaths in the **reference scenario** will decline to 10 by April 15, 2022 (Figure 22.4).
- Under our **reference scenario**, our model projects 1,943,000 cumulative total deaths due to COVID-19 on June 1. This represents 30,000 additional deaths from February 14 to June 1 (Figure 25.2).
- In our **80% mask use scenario**, our model projects 170,000 cumulative reported deaths due to COVID-19 on June 1. This represents 3,200 additional deaths from February 14 to June 1. Daily reported COVID-19 deaths in the **80% mask use scenario** will decline to 10 by April 24, 2022 (Figure 22.4).
- In our **third dose scenario**, our model projects 170,000 cumulative reported deaths due to COVID-19 on June 1. This represents 3,400 additional deaths from February 14 to June 1. Daily reported COVID-19 deaths in the **third dose scenario** will decline to 10 by April 17, 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, two countries will have high or extreme stress on hospital beds (Figure 24.1). At some point from February through June 1, 13 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
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>Neonatal disorders</td>
<td>14,422</td>
<td>1</td>
</tr>
<tr>
<td>Lower respiratory infections</td>
<td>12,732</td>
<td>2</td>
</tr>
<tr>
<td>HIV/AIDS</td>
<td>12,224</td>
<td>3</td>
</tr>
<tr>
<td>Malaria</td>
<td>11,351</td>
<td>4</td>
</tr>
<tr>
<td>Diarrheal diseases</td>
<td>11,088</td>
<td>5</td>
</tr>
<tr>
<td>COVID-19</td>
<td>10,439</td>
<td>6</td>
</tr>
<tr>
<td>Ischemic heart disease</td>
<td>8,306</td>
<td>7</td>
</tr>
<tr>
<td>Stroke</td>
<td>8,063</td>
<td>8</td>
</tr>
<tr>
<td>Tuberculosis</td>
<td>7,097</td>
<td>9</td>
</tr>
<tr>
<td>Congenital birth defects</td>
<td>3,721</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.
The African Region

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
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

<table>
<thead>
<tr>
<th>Mandate in place</th>
<th>Mandate in place (imposed this week)</th>
<th>Mandate in place (updated from previous reporting)</th>
<th>No mandate</th>
<th>No mandate (lifted this week)</th>
<th>No mandate (updated from previous reporting)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary school closure</td>
<td>Secondary school closure</td>
<td>Entry restrictions for some non-residents</td>
<td>Entry restrictions for all non-residents</td>
<td>Individual movements restricted</td>
<td>Individual curfew</td>
</tr>
<tr>
<td>Gathering limit: 6 indoor, 10 outdoor</td>
<td>Gathering limit: 10 indoor, 25 outdoor</td>
<td>Gathering limit: 25 indoor, 50 outdoor</td>
<td>Gathering limit: 50 indoor, 100 outdoor</td>
<td>Gathering limit: 100 indoor, 250 outdoor</td>
<td>Restaurants closed</td>
</tr>
<tr>
<td>Restaurants / bars closed</td>
<td>Bars closed</td>
<td>Restaurants / bars curbside only</td>
<td>Gyms, pools, other leisure closed</td>
<td>Non-essential retail curbside only</td>
<td>Non-essential workplaces closed</td>
</tr>
<tr>
<td>Non-essential retail closed</td>
<td>Non-essential workplaces closed</td>
<td>Stay home order</td>
<td>Stay home fine</td>
<td>Stay home mandate</td>
<td>Mask mandate</td>
</tr>
</tbody>
</table>

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Figure 11.1: Trend in mobility as measured through smartphone app use, compared to January 2020 baseline
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 Infection</td>
<td>Severe disease Infection</td>
<td>Severe disease Infection</td>
<td>Severe disease Infection</td>
<td>Severe disease Infection</td>
<td>Severe disease 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>62%</td>
<td>64%</td>
<td>61%</td>
<td>64%</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>73%</td>
<td>73%</td>
<td>73%</td>
<td>78%</td>
<td>72%</td>
<td>76%</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>
</tr>
<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>
<td>75%</td>
<td>70%</td>
<td>75%</td>
<td>70%</td>
<td>73%</td>
<td>69%</td>
</tr>
<tr>
<td>Other vaccines (mRNA)</td>
<td>91%</td>
<td>86%</td>
<td>91%</td>
<td>86%</td>
<td>88%</td>
<td>85%</td>
</tr>
</tbody>
</table>
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**
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.
Projections and scenarios

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

![Daily COVID-19 infections graph](image1)

Figure 22.2: Daily COVID-19 reported cases until June 01, 2022 for three scenarios

![Daily COVID-19 cases graph](image2)
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.
**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.