COVID-19 Results Briefing

Indonesia

February 18, 2022

This document contains summary information on the latest projections from the IHME model on COVID-19 in Indonesia. The model was run on February 17, 2022, with data through February 13, 2022.

Current situation

The Omicron wave continues to subside globally. Based on vaccination, previous infection, and the current wave of Omicron, we estimate that 3% of the population is immune to Omicron. In our reference scenario, which does not include the emergence of a new variant, we expect transmission, cases, hospitalizations, and deaths to reach low levels in the coming months. Given seasonality, transmission should stay low throughout the summer unless a new, more transmissible variant with immune escape emerges.

We expect countries to continue to relax mandates; these steps should not lead to an increase in transmission given we believe that the declines in cases are likely due to the exhaustion of susceptible individuals in the population. Given the extremely low infection-fatality rate in children and declining transmission, consideration should be given to lifting mask and other mitigation measures in schools in the coming weeks.

The Omicron wave is still on the rise in Indonesia. Reported cases are expected to peak on February 22. Hospitalizations and deaths are expected to peak on February 24 and March 3, respectively. Following their peaks, the numbers are expected to gradually decrease until they reach minimal levels in early April. The trends in deaths will lead to a total of 158,625 reported deaths on June 1, which is 13,000 more deaths than on February 14.

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 country is prepared in advance. Second, purchasing 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. We expect Omicron, in the absence of a new variant, to return in the winter of 2022, so there will be a need for antivirals even in the absence of a new variant. Third, efforts to persuade the unvaccinated to get vaccinated should continue. And careful consideration should be given to need and timing for a fourth dose of vaccine. Evidence has accumulated that shows immunity after a third dose wanes steadily. Given that the Omicron wave is rapidly subsiding, a major push on a fourth dose now seems unnecessary except in high-risk individuals. A fourth dose push when a new variant emerges, or later in the year in anticipation of a winter increase in Omicron, may be more appropriate. Fourth, even as most individuals return to pre-COVID-19 activities, individuals at risk (over 65, immunocompromised, and multiple co-morbidities) 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.
• Daily infections in the last week increased to 4,109,000 per day on average compared to 3,650,000 the week before (Figure 1.1). Daily hospital census in the last week (through February 13) increased to 32,000 per day on average compared to 15,000 the week before.

• Daily reported cases in the last week increased to 42,000 per day on average compared to 22,000 the week before (Figure 2.1).

• Reported deaths due to COVID-19 in the last week increased to 91 per day on average compared to 42 the week before (Figure 3.1).

• Total deaths due to COVID-19 in the last week increased to 390 per day on average compared to 180 the week before (Figure 3.1). This makes COVID-19 the number 3 cause of death in Indonesia this week (Table 1). Estimated total daily deaths due to COVID-19 in the past week were 4.3 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 locations (Figure 4.1).

• The daily rate of total deaths due to COVID-19 is greater than 4 per million in no locations (Figure 4.2).

• We estimate that 72% of people in Indonesia 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 locations. Effective R in Indonesia was 1.4 on February 3 (Figure 7.1).

• The infection-detection rate in Indonesia was close to 2% 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 five locations, that the Beta variant is circulating in two locations, that the Delta variant is circulating in eight locations, that the Gamma variant is circulating in four locations, and that the Omicron variant is circulating in eight locations.

Trends in drivers of transmission

• Mobility last week was 6% lower than the pre-COVID-19 baseline (Figure 11.1). Mobility was lower than 30% of baseline in one location in the region.

• As of February 14, in the COVID-19 Trends and Impact Survey, 67% of people self-report that they always wore a mask when leaving their home, the same as last week (Figure 13.1).

• There were 43 diagnostic tests per 100,000 people on February 14 (Figure 15.1).
As of February 14, five locations have reached 70% or more of the population who have received at least one vaccine dose, and two locations have reached 70% or more of the population who are fully vaccinated (Figure 17.1). 72% of people in Indonesia have received at least one vaccine dose, and 52% are fully vaccinated.

In Indonesia, 86.8% 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 66% in Timor-Leste to 100% in Bhutan (Figure 19.1).

In our current reference scenario, we expect that 202.8 million people will be vaccinated with at least one dose by June 1 (Figure 20.1). We expect that 71% 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 49,980 by June 1, 2022 (Figure 22.1).
- Daily estimated infections in the 80% mask use scenario will decline to 47,600 by June 1, 2022 (Figure 22.1).
- Daily estimated infections in the third dose scenario will decline to 34,490 by June 1, 2022 (Figure 22.1).
Cases

- Daily estimated cases in the **reference scenario** will rise to 59,170 by February 22, 2022 (Figure 22.2).
- Daily estimated cases in the **80% mask use scenario** will rise to 59,170 by February 22, 2022 (Figure 22.2).
- Daily estimated cases in the **third dose scenario** will rise to 57,880 by February 22, 2022 (Figure 22.2).

Hospitalizations

- Daily hospital census in the **reference scenario** will rise to 56,210 by February 26, 2022 (Figure 22.3).
- Daily hospital census in the **80% mask use scenario** will rise to 56,180 by February 26, 2022 (Figure 22.3).
- Daily hospital census in the **third dose scenario** will rise to 54,200 by February 25, 2022 (Figure 22.3).

Deaths

- In our **reference scenario**, our model projects 159,000 cumulative reported deaths due to COVID-19 on June 1. This represents 13,000 additional deaths from February 14 to June 1. Daily reported COVID-19 deaths in the **reference scenario** will rise to 350 by March 3, 2022 (Figure 22.4).
- Under our **reference scenario**, our model projects 686,000 cumulative total deaths due to COVID-19 on June 1. This represents 57,000 additional deaths from February 14 to June 1 (Figure 25.2).
- In our **80% mask use scenario**, our model projects 158,000 cumulative reported deaths due to COVID-19 on June 1. This represents 13,000 additional deaths from February 14 to June 1. Daily reported COVID-19 deaths in the **80% mask use scenario** will rise to 350 by March 3, 2022 (Figure 22.4).
- In our **third dose scenario**, our model projects 158,000 cumulative reported deaths due to COVID-19 on June 1. This represents 13,000 additional deaths from February 14 to June 1. Daily reported COVID-19 deaths in the **third dose scenario** will rise to 330 by March 3, 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, seven locations will have high or extreme stress on hospital beds (Figure 24.1). At some point from February through June 1, seven locations 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>Stroke</td>
<td>6,372</td>
<td>1</td>
</tr>
<tr>
<td>Ischemic heart disease</td>
<td>4,718</td>
<td>2</td>
</tr>
<tr>
<td>COVID-19</td>
<td>2,744</td>
<td>3</td>
</tr>
<tr>
<td>Diabetes mellitus</td>
<td>2,045</td>
<td>4</td>
</tr>
<tr>
<td>Cirrhosis and other chronic liver diseases</td>
<td>1,705</td>
<td>5</td>
</tr>
<tr>
<td>Tuberculosis</td>
<td>1,472</td>
<td>6</td>
</tr>
<tr>
<td>Chronic obstructive pulmonary disease</td>
<td>1,379</td>
<td>7</td>
</tr>
<tr>
<td>Diarrheal diseases</td>
<td>1,146</td>
<td>8</td>
</tr>
<tr>
<td>Hypertensive heart disease</td>
<td>973</td>
<td>9</td>
</tr>
<tr>
<td>Tracheal, bronchus, and lung cancer</td>
<td>951</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
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

| Tableau | 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 |
|---------|------------------------|--------------------------|-----------------------|-------------------------------------------|------------------------------------------|---------------------------------------|-------------------------------|-------------------|-----------------------------------|-----------------------------------|-----------------------------------|----------------------------------|----------------------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| Bangladesh | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Bhutan | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| India | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Indonesia | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Maldives | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Myanmar | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Nepal | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Sri Lanka | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Thailand | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Timor-Leste | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |

*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
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>66%</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>
</tr>
<tr>
<td>Sputnik-V</td>
<td>92%</td>
<td>85%</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>
Indonesia

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

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.
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.