COVID-19 Results Briefing

The South-East Asia Region

February 18, 2022

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

The Omicron-driven wave has peaked already in the western portions of the South-East Asia Region (SEAR), as seen in India, Nepal, and Bangladesh, but Omicron infections are just beginning to increase in many countries in the eastern parts of the region. Therefore, the region is expected to see a long tail to this current Omicron wave with the varied timing of location-specific Omicron surges, likely resulting in a four- to six-week-long period where the region will see daily COVID-19 cases and deaths continuing to decline slowly. At a regional level, estimated daily infections decreased from last week to approximately 6,700,000 per day, reported cases decreased to 127,000 per day, and reported deaths decreased to 560 per day on average. However, the quintessential rapid increase and decline of an Omicron surge is still expected to occur in those eastern locations yet to observe a peak this year, like Sri Lanka, Thailand, and Indonesia. We estimate that approximately 55% of the region is now immune to the Omicron variant due to past infection or vaccination (Figure 21.1). In our reference scenario, which does not include the emergence of a new variant, infections and deaths will continue to decline slowly through the start of the Northern Hemisphere’s summer months, with cumulative reported deaths reaching 785,000 by June 1.

Given the timing of the Omicron wave and the seasonality of COVID-19 transmission, we expect a longer period of low COVID-19 transmission starting from mid-May through to the start of winter in the Northern Hemisphere. We expect countries to continue to ease mandates after their Omicron surges, and we do not expect these steps to lead to a substantial increase in transmission given that we believe these 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, policymakers can prepare appropriate responses. 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. 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 expand access to vaccinations and combatting vaccine hesitancy should continue through public health messaging.
Additionally, the availability and timing of vaccine boosters should be considered carefully given that the current levels of population immunity are high, but waning immunity potentially leaves the region vulnerable heading into the next winter season when Omicron may reemerge. Fourth, even as most individuals return to pre-COVID-19 activities, individuals at risk (those over 65, immunocompromised, or with 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 when around those outside your household.

**Current situation**

- Estimated daily infections in the last week decreased to 6,706,000 per day on average compared to 6,956,000 the week before (Figure 1.1). Daily hospital census in the last week (through February 14) decreased to 123,000 per day on average compared to 179,000 the week before.

- Daily reported cases in the last week decreased to 127,000 per day on average compared to 186,000 the week before (Figure 2.1).

- Reported deaths due to COVID-19 in the last week decreased to 560 per day on average compared to 680 the week before (Figure 3.1).

- Total deaths due to COVID-19 in the last week decreased to 3,200 per day on average compared to 4,100 the week before (Figure 3.1). This makes COVID-19 the number 3 cause of death in the South-East Asia Region this week (Table 1). Estimated total daily deaths due to COVID-19 in the past week were 5.8 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 one country and one subnational location (Figure 4.1).

- The daily rate of total deaths due to COVID-19 is greater than 4 per million in one country and four subnational locations (Figure 4.2).

- We estimate that 69% of people in the South-East Asia 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 six countries (Figure 7.1).

- The infection-detection rate in South-East Asia Region 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 six countries and 21 subnational locations, that the Beta variant is circulating in three countries and seven subnational locations, that the Delta variant is circulating in nine countries and 30 subnational locations, that the Gamma variant is circulating in five countries and five subnational locations, and that the Omicron variant is circulating in nine countries and 30 subnational locations.
Trends in drivers of transmission

- Mobility last week was 0% lower than the pre-COVID-19 baseline (Figure 11.1). Mobility was lower than 30% of baseline in one country in the region.

- As of February 14, in the COVID-19 Trends and Impact Survey, 63% of people self-report that they always wore a mask when leaving their home compared to 64% last week (Figure 13.1).

- There were 86 diagnostic tests per 100,000 people on February 14 (Figure 15.1).

- As of February 14, six countries and 14 subnational locations have reached 70% or more of the population who have received at least one vaccine dose, and three countries and six subnational locations have reached 70% or more of the population who are fully vaccinated (Figure 17.1). 65% of people in the South-East Asia Region have received at least one vaccine dose, and 51% are fully vaccinated.

- In the South-East Asia Region, 90.2% 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 1.4 billion people will be vaccinated with at least one dose by June 1 (Figure 20.1). We expect that 63% 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 582,020 by June 1, 2022 (Figure 22.1).
- Daily estimated infections in the **80% mask use scenario** will decline to 360,500 by June 1, 2022 (Figure 22.1).
- Daily estimated infections in the **third dose scenario** will decline to 281,250 by June 1, 2022 (Figure 22.1).

**Cases**

- Daily estimated cases in the **reference scenario** will decline to 13,520 by June 1, 2022 (Figure 22.2).
- Daily estimated cases in the **80% mask use scenario** will decline to 9,460 by June 1, 2022 (Figure 22.2).
- Daily estimated cases in the **third dose scenario** will decline to 6,430 by June 1, 2022 (Figure 22.2).

**Hospitalizations**

- Daily hospital census in the **reference scenario** will decline to 11,020 by June 1, 2022 (Figure 22.3).
- Daily hospital census in the **80% mask use scenario** will decline to 7,100 by June 1, 2022 (Figure 22.3).
- Daily hospital census in the **third dose scenario** will decline to 5,640 by June 1, 2022 (Figure 22.3).

**Deaths**

- In our **reference scenario**, our model projects 785,000 cumulative reported deaths due to COVID-19 on June 1. This represents 34,000 additional deaths from February 14 to June 1. Daily reported COVID-19 deaths in the **reference scenario** will decline to 60 by June 1, 2022 (Figure 22.4).
- Under our **reference scenario**, our model projects 4,401,000 cumulative total deaths due to COVID-19 on June 1. This represents 121,000 additional deaths from February 14 to June 1 (Figure 25.2).
- In our **80% mask use scenario**, our model projects 783,000 cumulative reported deaths due to COVID-19 on June 1. This represents 33,000 additional deaths from February 14 to June 1. Daily reported COVID-19 deaths in the **80% mask use scenario** will decline to 40 by June 1, 2022 (Figure 22.4).
• In our **third dose scenario**, our model projects 782,000 cumulative reported deaths due to COVID-19 on June 1. This represents 32,000 additional deaths from February 14 to June 1. Daily reported COVID-19 deaths in the **third dose scenario** will decline to 30 by June 1, 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 countries will have high or extreme stress on hospital beds (Figure 24.1). At some point from February through June 1, seven 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>Ischemic heart disease</td>
<td>39,868</td>
<td>1</td>
</tr>
<tr>
<td>Stroke</td>
<td>27,102</td>
<td>2</td>
</tr>
<tr>
<td>COVID-19</td>
<td>22,693</td>
<td>3</td>
</tr>
<tr>
<td>Chronic obstructive pulmonary disease</td>
<td>21,984</td>
<td>4</td>
</tr>
<tr>
<td>Diarrheal diseases</td>
<td>14,328</td>
<td>5</td>
</tr>
<tr>
<td>Lower respiratory infections</td>
<td>11,327</td>
<td>6</td>
</tr>
<tr>
<td>Tuberculosis</td>
<td>10,815</td>
<td>7</td>
</tr>
<tr>
<td>Neonatal disorders</td>
<td>10,504</td>
<td>8</td>
</tr>
<tr>
<td>Diabetes mellitus</td>
<td>9,152</td>
<td>9</td>
</tr>
<tr>
<td>Cirrhosis and other chronic liver diseases</td>
<td>8,514</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.
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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

| Country       | 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 | 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    |                        |                          |                       |                                          |                                         |                                       |                      |                   | Mandate imposed imposed in some subnational locations | Mandate in place (imposed this week) | Mandate imposed in some subnational locations (imposed this week) | Mandate imposed in some subnational locations (updated from previous reporting) | Mandate imposed in some subnational locations (updated from previous reporting) | No mandate | No mandate | No mandate | No mandate |
| Bhutan        |                        |                          |                       |                                          |                                         |                                       |                      |                   |                      |                                      |                                      |                                      |                        |                |                  | |
| India         |                        |                          |                       |                                          |                                         |                                       |                      |                   |                      |                                      |                                      |                                      |                        |                |                  | |
| Indonesia     |                        |                          |                       |                                          |                                         |                                       |                      |                   |                      |                                      |                                      |                                      |                        |                |                  | |
| Maldives      |                        |                          |                       |                                          |                                         |                                       |                      |                   |                      |                                      |                                      |                                      |                        |                |                  | |
| Myanmar       |                        |                          |                       |                                          |                                         |                                       |                      |                   |                      |                                      |                                      |                                      |                        |                |                  | |
| Nepal         |                        |                          |                       |                                          |                                         |                                       |                      |                   |                      |                                      |                                      |                                      |                        |                |                  | |
| Sri Lanka     |                        |                          |                       |                                          |                                         |                                       |                      |                   |                      |                                      |                                      |                                      |                        |                |                  | |
| Thailand      |                        |                          |                       |                                          |                                         |                                       |                      |                   |                      |                                      |                                      |                                      |                        |                |                  | |
| Timor-Leste   |                        |                          |                       |                                          |                                         |                                       |                      |                   |                      |                                      |                                      |                                      |                        |                |                  | |

*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>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>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

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

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covid19.healthdata.org  Institute for Health Metrics and Evaluation
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.