

Technical Brief: Enhancing Readiness for Omicron (B.1.1.529) in the WHO South-East Asia Region

Interim Document
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Summary

Background

- On 26 November 2021, [WHO designated the variant B.1.1.529 a variant of concern, as Omicron](#) on the basis of advice from WHO's Technical Advisory Group on Virus Evolution.
- This variant has a large number of mutations, some of which are concerning – Omicron may be associated with higher transmissibility and immune escape potential. However, there are still considerable uncertainties.

Risk Assessment

- Given its immune escape potential and possible transmissibility advantage compared to Delta, likelihood of potential introduction and subsequent transmission of Omicron in the South-East Asia region is high. In case another major surge of COVID-19 take place in the Region driven by the Omicron, consequences will be severe. Overall risk related to the novel variant Omicron for WHO South-East Asia Region is assessed high.

Priority actions for the countries in South-East Asia Region

- Enhance surveillance and sequencing efforts to better understand circulating SARS-CoV-2 variants. Where capacity exists, perform field investigations and laboratory assessments to improve understanding of the potential impacts of the Omicron.
- As S gene target failure (SGTF) is indicated for Omicron, the SGTF can be used as the marker for this variant, which may lead to efficient detection of the Omicron.
- Report initial cases/clusters associated with VOC infection to WHO through the IHR mechanism.
- Continue to accelerate the vaccination coverage, especially among priority populations initially targeted for COVID-19 vaccination who remain unvaccinated or not yet fully vaccinated.
- Use a risk-based approach to timely adjust international travel measures. Timely adjustment of international travel measures in precautionary manner guided by risk assessment is advisable.
- The use of masks, physical distancing, hand hygiene, and improving ventilation of indoor spaces remain key to reducing transmission of SARS CoV-2 even with the Omicron. Contact tracing of COVID-19 cases with an epidemiological link to the affected areas is strongly advised.
- Ensure early warning system is in place to timely adjust the public health and social measures.
- In the anticipation of COVID-19 case-load and associated pressure on the health system, ensure mitigation plans are in place to maintain essential health services and necessary health care resources are in place to respond to potential surges.
- The authority should regularly communicate evidence-based information on the Omicron and potential implication for the public in timely and transparent manner, including what is known, what is unknown and what is being done by responsible authorities.

1. Background

- On 26 November 2021, [WHO designated the variant B.1.1.529 a variant of concern, as Omicron](#) on the basis of advice from WHO's Technical Advisory Group on Virus Evolution.
- The variant Omicron was first reported to WHO from South Africa on 24 November 2021. In recent weeks, infections have increased steeply in South Africa, coinciding with the detection of Omicron. The first known confirmed Omicron infection was from a specimen collected on 9 November 2021. The number of cases of this variant appears to be increasing in almost all provinces in South Africa.
- The variant Omicron was also detected in Botswana in samples collected on 11 November 2021. As of 27 November 2021, travel-related cases have also been detected in Belgium, Hong Kong, Israel and some European countries.
- This variant has a large number of mutations, some of which are concerning. Preliminary evidence suggests there may be an increased risk of reinfection with this variant, as compared to other variants of concern (VOCs).
- Current SARS-CoV-2 PCR diagnostics continue to detect this variant. Several labs have indicated that for one widely used PCR test, one of the three target genes is not detected (called S gene dropout or S gene target failure) and this test can therefore be used as marker for this variant, pending sequencing confirmation.
- There are a number of studies underway to evaluate this variant. WHO will communicate new findings with Member States and to the public as needed.
- As such, countries are asked to do the following:
 - enhance surveillance and sequencing efforts to better understand circulating SARS-CoV-2 variants.
 - submit complete genome sequences and associated metadata to a publicly available database, such as GISAID.
 - report initial cases/clusters associated with VOC infection to WHO through the IHR mechanism.
 - where capacity exists and in coordination with the international community, perform field investigations and laboratory assessments to improve understanding of the potential impacts of the VOC on COVID-19 epidemiology, severity, effectiveness of public health and social measures, diagnostic methods, immune responses, antibody neutralization, or other relevant characteristics.

2. Risk assessment for South-East Asia Region

- There is still substantial uncertainty related to Omicron, with regard to its transmissibility, immune escape potential (from infection- and vaccine-induced immunity), severity of disease, and response to available countermeasures (e.g. diagnostics, vaccines, therapeutics).
- At present, there is no evidence of importation and transmission of the Omicron in the countries in South-East Asia. Given travel has been ongoing between the affected countries and countries in South-East Asia, it is possible that the Omicron might have been introduced or may be introduced into the Region. Given its immune escape potential and possible transmissibility advantage

compared to Delta (as indicated by rapid surge in South Africa), likelihood of potential introduction and subsequent transmission of Omicron in the South-East Asia region is **high**.

- In case another major surge of COVID-19 take place driven by the Omicron in the Region, consequences will be **severe**. It may pose overwhelming demands on health care systems, and may lead to increased morbidity and mortality. Countries in the Region underwent major surge driven by Delta, and has already experienced major social erosion and economic losses. The impact on vulnerable populations would be enormous.
- Overall risk related to the novel variant Omicron for WHO South-East Asia Region is thus considered **high**. This assessment is based on considerable uncertainty and will be updated as more information becomes available.

3. Potential scenarios

The following four scenarios can be considered to guide for planning and enhancing readiness for the potential introduction and subsequent spread of the Omicron in the countries in the South-East Asia Region.

- 1) The novel variant Omicron is not yet detected in the country, and considered not yet present in the country.
- 2) The novel variant Omicron is considered not yet present in the community, but was detected among the incoming travelers.
- 3) The novel variant Omicron was detected in community, but as sporadic cases or within a few manageable sizes of clusters
- 4) The novel variant Omicron is in the country and it is wide spread in communities

4. Priority Actions for countries in the Region

Based on the risk assessment and potential scenarios, the following priority actions were recommended for the countries in the Region to enhance readiness for the novel variant Omicron.

4.1 Enhanced Surveillance

- Enhance surveillance and sequencing efforts to better understand circulating SARS-CoV-2 variants.
- Report initial cases/clusters associated with VOC infection to WHO (including the Omicron).
- Genomic surveillance is of crucial importance for early detection and monitoring the epidemiological trends of emerging variants, and will provide information to guide response. This includes regular testing of representative samples but also strengthening targeted sampling from persons coming from high-risk areas.
- For the sampling of specimens among incoming travelers, please see the section 4.2.
- For the surveillance in communities, use indicator-based and event-based surveillance to timely detect potential signals of emerging variants:

- Reports of rapidly spreading outbreaks in healthcare facilities or communities might raise the concern that these events are due to a variant that spreads more easily from person to person.
- Similar reports from populations expected to have a high level of immunity (due to prior infections or high vaccination coverage) may indicate the presence of a variant able to evade the immune response.
- Outbreaks causing unexpectedly high levels of morbidity and mortality may be due to a variant causing more severe disease.
- Where capacity and resources are available, conduct field investigations guided by detected signals (in coordination with the international community where appropriate). Specimens collected during such investigations may warrant prioritization for sequencing.
- The epidemiological studies and sequencing of specimens can be targeted to those with particular individual-level characteristics (e.g. clinical characteristics; immunocompromised patients and selective sequencing of vaccine breakthrough), as well as usual clusters and super-spreader events.
- Further details on surveillance in the context of emerging variants, including sampling strategy, please refer to [WHO guidance for surveillance of SARS-CoV-2 variants Interim guidance 9 August 2021](#) and [ECDC Guidance for representative and targeted genomic SARS-CoV-2 monitoring](#).
- Ensure early warning system is in place, composed of a set of indicators such as indicator of rapid growth (e.g. growth rate, effective reproduction number), case incidence, and test positivity proportion. It is also crucial to use indicators related to disease severity and pressure on health care systems (e.g. bed occupancy of general ward and intensive care unit)

4.2 Laboratory

- The variant Omicron belongs to Pango lineage B.1.1.529, Nextstrain clade 21K, and is characterized by 30 amino acid changes, three small deletions and one small insertion in the spike protein compared to the original virus.
- Most diagnostic tests continue to work and can detect the variant Omicron.
- S gene dropout or S gene target failure (SGTF) due to deletion at Spike position 69-70, similar to the detection of the Alpha variant, has been reported. Thermo Fischer TaqPath assay can therefore be used as proxy test for this variant, pending sequencing confirmation. Use of the SGTF approach may lead to faster detection rates.
- Analysis of the mutations in the nucleocapsid (N gene) of Omicron (B.1.1.529) viruses suggests that rapid antigen tests are currently unaffected.
- In countries with sequencing capacity, WHO advises that a subset (amount will depend on local capacities – WHO is available to provide technical assistance on tailored sampling strategy) of SARS-CoV-2 confirmed cases be sequenced. Sampling selection criteria should include cases from any unusual transmission events (e.g., increased transmission despite interventions in place), unexpected disease presentation/severity, vaccine breakthrough, severely ill patients and international travelers.
- For countries that do not have access sequencing at the national level, WHO can provide support with collaborating laboratories with sequencing capacities
- WHO advises on the timely reporting of genomic data to the public domain and the collection of metadata including clinical and epidemiologic data for careful interpretation of results.

- It is critical that all SARS-CoV-2 testing is linked to public health actions to ensure appropriate clinical care and support and to carry out contact tracing to break chains of transmission

SGTF testing / algorithm

- For countries with access to diagnostic tests in which at least one gene target contains the S gene target.
 - Prioritize specimens with S Gene target failure (no detection for S gene and detection for other gene targets) for sequencing confirmation of the Omicron.
 - A sudden increase in S gene target failures may be indicative of circulation of the Omicron in light with reducing prevalence of Alpha variant, however, confirmation by sequencing is recommended.
- For countries without access to diagnostic tests with S gene target, enhanced surveillance and sequencing is recommended to characterize the circulating SARS-CoV-2 variants.

Retrospective sampling

- A retrospective review of available genomic sequences at country level should be done, with sample collection dates from mid-October 2021 till date.
- Specimens with S gene target failure in the recent past, preferably from mid-October 2021, till date can be sequenced to identify variant strain– if not done already
- Genomic sequences submitted to public domain (like GISAID) may automatically be subjected to retrospective analysis, therefore timely reporting of genomic data to public domain is highly encouraged.

Prospective sampling

- Due to the increased risk of importation by incoming travelers from high-risk countries and areas including reporting countries, countries may increase sampling from inbound travelers. Positive rRT-PCR samples should be sequenced to confirm presence of the Omicron
- [National testing strategies](#) should be updated to include available diagnostic tools for rapid testing and reporting and effective decentralization of testing.
- WHO recommends that national testing capacity and genomic sequencing capabilities and appropriate planning be undertaken for possible surges in testing demand.

4.3 Vaccination

- The presence of multiple mutations of the spike protein in the receptor-binding domain indicates that the Omicron have a high likelihood of immune escape from antibody-mediated protection. However, immune escape potential from cell-mediated immunity is more difficult to predict. Overall, there is still considerable uncertainties in the magnitude of immune escape potential of the Omicron. Further research studies are needed to better understand the escape potential against vaccine- and infection-induced immunity. Research efforts are ongoing, and the data are expected to be available within two to three weeks.
- Despite uncertainties, it is legitimate to consider that currently available vaccines may offer some level of protection against hospitalization and death.

- Meanwhile, efforts should be intensified to accelerate the vaccination coverage, especially among priority populations initially targeted for COVID-19 vaccination who remain unvaccinated or not yet fully vaccinated. Increasing COVID-19 vaccination coverage in all eligible age groups, but particularly in the old adults, health care workers and others with high risks of severe diseases should be prioritized by public health authorities.

4.4 Risk-based approach in adjusting international travel measures

- WHO recommends that countries apply a risk-based and scientific approach when implementing travel measures, in accordance with the [IHR Temporary Recommendations issued by the WHO Director-General following the 9th Emergency Committee for COVID-19, issued on 26 October 2021](#).
- WHO has released an interim guidance on [Considerations for implementing a risk-based approach to international travel in the context of COVID-19](#). The guidance advises a precautionary approach in the presence of scientific uncertainties such as emergence of variants of concern (VOCs).
- Given the low level of transmission in the South-East Asia region, many countries have relaxed international travel measures. A precautionary approach is important and the timely adjustment of international travel measures is strongly advised guided by risk assessment.
- Any measures implemented to prevent or delay the importation of new variants must be continuously adjusted in light of emerging information; without bias towards countries that are sequencing and sharing findings; based on thorough assessments of risk; and continuously adapted to emerging information.
- **Risk assessment:** National authorities should conduct thorough and regular risk assessments as new information emerges to inform the introduction, adjustment and discontinuation of risk mitigation measures. The following factors should be taken into account in the context of emergence of the Omicron. WHO has also developed risk assessment tool for international travel (available upon request)
 - Up-to-date information on the Omicron – transmissibility, immune-escape potential, disease severity, and effectiveness of countermeasures (e.g. diagnostics, vaccines, therapeutics).
 - Presence or potential presence of variant Omicron and epidemiological situation in the country of departure (taking to consideration the capacity of genomic sequencing in the country of departure)
 - Volume of air travelers from the country of departure
 - Response capacities of country of destination (your country) (e.g. surveillance, health care and public health systems)
 - Vaccination coverage and uptake of public health measures
- **Risk mitigation:** Guided by risk assessment in the context of emergence of Omicron, countries may consider adjusting risk mitigation measures – supplementary measures could be strengthened while ensuring basic mitigation measures.

Basic risk mitigation measures

- Travel advice, including temporarily avoiding or delaying travel to and from the known affected areas
- Self-monitoring for international travelers
- Multisectoral coordination and planning for disease prevention and control, surveillance, and case management

- International contact tracing
- Environmental controls & PHSM at points of entry and on board conveyances, including crowd control, engineering modification and enhanced compliance

Supplementary mitigation measures

- Exit and entry screening for signs and symptoms
- SARS-CoV-2 testing for incoming travelers - Avoid significantly diverting resources from settings where testing can have a higher public health impact
- Sequencing of the samples from incoming travelers tested positive (see above section on laboratory)
- Quarantine of travelers – possible adjustment of quarantine measures and duration in the context of resumption of international travel, guided by thorough risk assessment
- **Risk communication:** It is essential to proactively communicate to travelers in advance of their trip to help them with personal planning. Overarching changes to travel guidance that affect the general public and operators should be shared through traditional media, social media, COVID-19 helplines and travel websites (such as airline, airport and hotel booking sites).

4.5 Public health and social measures (PHSM)

- The use of masks, physical distancing, hand hygiene, and improving ventilation of indoor spaces remain key to reducing transmission of SARS CoV-2, even in the context of emerging variants. However, higher level of adherence may be required to control transmission with more transmissible variant.
- Given the low level of transmission in the South-East Asia region, many countries have relaxed PHSM, including international travel measures. A precautionary approach is important and the timely adjustments of PHSM is advised.
- The use of established PHSM in response to individual cases or clusters of cases, including contact tracing, quarantine and isolation, must continue to be adapted to the epidemiological and social context and enforced. Contact tracing of COVID-19 cases with an epidemiological link to the affected areas is strongly advised.
- Guided by risk assessment, taking into account epidemiological situation, response capacities, vaccination coverage and public perception, as well as uncertainties related to the rapidly evolving situation of Omicron, countries should be ready to timely escalate PHSM to avoid overwhelming demands to health care services.
- For further guidance on risk-based calibration of PHSM, please see WHO guidance on [Considerations for implementing a risk-based approach to international travel in the context of COVID-19](#).

4.6 Health care system readiness

- The rapid pace of replacement of the Delta variant by Omicron in South Africa raises concerns that this variant is significantly more transmissible than Delta. In addition, the high observed growth rate could be due to immune escape. As part of preparedness activities and in the anticipation of COVID-19 case-load and associated pressure on the health system, countries are advised to ensure mitigation plans are in place to [maintain essential health services](#), and necessary resources are in

place to respond to potential surges. Tools such as [COVID-19 Essential Supplies Forecasting Tool](#) are available for use.

4.7 Risk communication and community engagement

- The authority should regularly communicate information related to Omicron and potential implication for the public in timely and transparent manner to further foster trust and increase acceptance on response measures.
- One of the most important and effective interventions in a public health response to any event is to proactively communicate with the population what is known, what is unknown and what is being done by responsible authorities to get more information.
- COVID-19 information overload and misinformation should be managed at all stages of the response by providing the right information at the right time to the right people through trusted channels (e.g. community and faith leaders, family doctors and other influential members of society). There should be a monitoring system in place to capture emerging trends to enable delivery of a targeted communication package.
- When PHSMs are adjusted, communities should be fully and regularly informed, engaged and enabled before changes are made, to allow them to take ownership of the selected PHSM. It is critical to build and foster trust, especially in contexts where there is little or no involvement of the local population in decision-making. Clear, concise and transparent risk communication, including an evidence-based rationale for adjusting measures, should be developed with communities targeted for PHSM.
- Communities will be critical to implementing population-wide PHSMs and contributing to the mitigation of the social and economic impact of certain measures (e.g. disrupting availability of food and other needed supplies).

References

- WHO. Classification of Omicron (B.1.1.529): SARS-CoV-2 Variant of Concern. [https://www.who.int/news/item/26-11-2021-classification-of-omicron-\(b.1.1.529\)-sars-cov-2-variant-of-concern](https://www.who.int/news/item/26-11-2021-classification-of-omicron-(b.1.1.529)-sars-cov-2-variant-of-concern)
- European Centre for Disease Prevention and Control. Threat Assessment Brief: Implications of the emergence and spread of the SARS-CoV-2 B.1.1. 529 variant of concern (Omicron) for the EU/EEA. <https://www.ecdc.europa.eu/en/publications-data/threat-assessment-brief-emergence-sars-cov-2-variant-b.1.1.529>
- Other references are embedded as hyper link at each section.

Acknowledgement

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