The INSACOG reports genomic surveillance of SARS-CoV-2 across the country through sequencing of samples from Sentinel sites and also detailed State wise district analysis for some states under State MoUs (Maharashtra, Kerala and some others). A summary of the cumulative data of INSACOG and other state sequencing initiatives can be found at the INSACOG data portal link (http://clingen.igib.res.in/covid19genomes/) along with other INSACOG information at https://dbtindia.gov.in/insacog. New web-based query tool is now available on the data portal. All data presented on the portal is organized by date of sample collection, state, assigned lineage and mutations found on analysis.

INSACOG:

- Total number of samples processed so far is 1,05,996
- Total number of samples sequenced is 1,05,996
- Total number of sequences analysed are 1,03,210

Samples from MoUs with state governments:

- Number of samples sequenced is 20,153

Total number of samples sequenced: 1,26,149

The number of samples with pangolin lineage assigned are 72,205

<table>
<thead>
<tr>
<th>Community sample</th>
<th>Travelers sample</th>
<th>Total pangolin lineage assigned</th>
<th>Total VOC/VOI</th>
<th>Proportion</th>
</tr>
</thead>
<tbody>
<tr>
<td>66,951</td>
<td>5,254</td>
<td>72,205</td>
<td>51,001</td>
<td>70.6</td>
</tr>
</tbody>
</table>

Table 1: Cumulative samples with pangolin lineage assigned (as on 03-12-2021)

<table>
<thead>
<tr>
<th>Alpha Variant</th>
<th>Beta Variant</th>
<th>Gamma Variant</th>
<th>Delta Variant</th>
<th>B.1.617.1 and B.1.617.3</th>
<th>AY Series</th>
<th>Omicron</th>
<th>Total VOC/VOI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tr&amp;Co</td>
<td>Com</td>
<td>Total</td>
<td>Tr&amp;Co</td>
<td>Com</td>
<td>Total</td>
<td>Tr&amp;Co</td>
<td>Com</td>
</tr>
<tr>
<td>577</td>
<td>3673</td>
<td>4250</td>
<td>117</td>
<td>102</td>
<td>219</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

Tr&Co= Travelers and contacts; Com= Community samples

Table 2: Cumulative distribution of VoC/VOI (as on 03.12.2021)
Variants reported during the period

Global

While Delta, including B.1.617.2 (AY) and AY.x sublineages, continues to be the main VOC globally, the Omicron VOC has appeared in more than 35 countries, with rapidly growing outbreaks in Southern Africa. The data available so far suggests high infectivity, possibly greater than Delta. Reinfection risk estimated by epidemiologic surveillance system is greater than previously seen with either Beta or Delta variants (1). Population-level evidence thus suggests that the Omicron variant is associated with substantial ability to evade immunity from prior infection and transmit rapidly in populations with high levels of naturally acquired immunity. The degree by which Omicron would be able to evade vaccine-induced immunity is not known yet. There is insufficient data to determine whether disease severity is different from previous variants, but rising hospitalizations in affected regions suggest that it would be premature to consider it less virulent.

National

Two cases of Omicron have been identified in Karnataka. One had travel exposure, while one was a doctor with no travel history. Both were fully vaccinated. Both had mild disease. Public health measures and investigations are being conducted.

In view of the emerging evidence from South Africa and some other countries about its substantial ability to evade immunity from previous infection with COVID variants and consequently risk of re-infection with Omicron, there was a discussion about the potential role of additional dose of the COVID 19 vaccines in high risk populations in the INSACOG Bulletin of 29th November 2021. However, this was not a recommendation or suggestion for booster dose in the national immunization program. Immunity and protection from SARS-CoV-2 is multifactorial with several unknown factors and further compounded by emerging VOCs. Many more scientific experiments are needed to assess the impacts of booster dose, which are being guided and monitored by National Technical Advisory Group on Immunization (NTAGI) and National Expert Group on Vaccine Administration for COVID-19 (NEGVAC). The recommendations and suggestions regarding vaccines, schedule, and roll out comes under expressed mandate of NTAGI and the NEGVAC.

1. Pulliam et al, Increased risk of SARS-CoV-2 reinfection associated with emergence of the Omicron variant in South Africa
   https://www.medrxiv.org/content/10.1101/2021.11.11.21266068v2