

Genomic Surveillance for SARS-CoV-2 Variants: what is the impact and why we need it now?

📅 27th Aug 2021 ⌚ 9am-10:30am (PHT/ SGT)
8am-9:30am (JKT)

Organised by ASEAN Dx Initiative

Speakers and Panelists:

- **Prof Amin Soebandrio** - Professor, Chairman, Eijkman Institute, Indonesia
- **Prof David Hillyard** - Professor (Pathology) The University of Utah, United States
- **Dr Safarina Malik** - Head, Laboratory, Eijkman Institute, Indonesia
- **Dr Anurag Agrawal** - Director, Institute of Genomics and Integrative Biology, CSIR, India
- **Dr Sebastian Maurer-Stroh** - Executive Director, Bioinformatics Institute, A*STAR, Singapore
- **Ms Anita Suresh** - Head, Sequencing Programme, FIND, Singapore

Chair and Moderator:

Dr Benedict Yan - Pathologist and Director, Molecular Diagnostics Centre, National University Health Systems, Singapore



875
registrations



571
attendees



20
Countries

AU, BD, BT, BN, KH, CN, GB, ID, IN, KH, MM, MY, NP, PS, PG, PH, SG, TH, US, VN



89%
From ASEAN



32
questions asked

Highlights from the webinar

- SARS-CoV-2 has been mutating continuously. Four strains were discussed: Alpha, Beta, Gamma and Delta. Also, Variants of Interest (VOI), Variants of Concern (VOC) and Variants for Further Monitoring were highlighted. More details about SARS-CoV-2 evolution can be found at <https://www.gisaid.org/>.
- SARS-CoV-2 Delta variant is a variant of great concern and potentially one of high consequence. It has mutations in the gene encoding spike protein causing substitutions T478K, P681R and L452R.
- At least two factors are responsible for the quick spread of SARS-CoV-2 Delta variant: changes in the receptor affinity enabling better binding of the virus to host cell and antibody escape.
- Genomic surveillance provides early warning that new variants are on the horizon. It helps to investigate global spread of SARS-CoV-2, study outbreak dynamics including changes in the size of epidemic over time, understand its spatiotemporal spread, examine transmission routes and support the development of diagnostics, drugs and vaccine.
- SARS-CoV-2 whole genome sequencing (WGS) can be useful for variant surveillance, identification, lineage tracking, transmission, evolution and nearly real time response to a public health crisis. There are several challenges for implementing genomic surveillance in island nation like Indonesia, including: access to facilities, human resource, cost of importing reagents, access to equipment and large distance between various provinces.
- SARS-CoV-2 sequencing results from portable machines, such as MinION from Oxford Nanopore have become as accurate as the ones obtained from Illumina sequencing, as per Dr Agrawal. Thus, these platforms can provide an economical alternative to a sequencing laboratory for surveillance purpose. Also, nucleic acid sequence barcode based parallel sequencing of multiple samples has been very useful for efficient sequencing of SARS-CoV-2.
- There is a need to understand whether changes in variant sequence will confound vaccine efficacy, and to understand if variant changes will impact current and future therapeutics.
- Data sharing and collaboration are key to fight the ongoing pandemic. As part of the Access to COVID-19 Tools Accelerator (ACT-A), there is a dedicated working group for genomic surveillance to enable coordination of efforts, training, tools, sharing of best practices and country support (in kind or funding). Learn more at: <https://www.finddx.org/covid-19/covid-19-genomic-surveillance/> or contact sequencing@finddx.org.

Poll Results (255 votes):

- **65% practice genomic surveillance** for SARS-CoV-2 Variants
- **81% voted for awareness and training** to build up genomic surveillance capacity in their country
- **Funding (71%) and Training (58%)** are the main challenges faced when implementing genomic surveillance
- **Top three topics** of interest for future webinars
 - **75%** are interested in **updates on vaccine and immunology** for the next webinar
 - 68% voted for Upcoming technologies for infectious diseases
 - 55% voted for Rapid Antigen Test and use cases

Watch the webinar:

<https://youtu.be/yXDZZ2ihQZo>