Why Does COVID-19 Virus Mutate?

- Uninterrupted transmission due to lack of COVID Appropriate Behavior
- As the virus transmits, it acquires added fitness
- Random error during replication
- Immune pressure after treatment
  - Convalescent Plasma
  - Vaccination
  - Monoclonals

Dated: 25 June, 2021
What Happens Due to Mutations?

The mutated virus can have serious impact on human health

- Increased severity of infection
- Increased transmissibility
- Immune escape capability
- Improved binding to lung cells
- Clustering of infections
- Neutralization escape from monoclonals
Current Status of COVID-19 Variants of Concern in India

Variants of Concerns (VOC) are found to be distributed in 174 districts in 35 States in India.

Highest numbers are reported from districts in Maharashtra, Delhi, Punjab, Telangana, West Bengal & Gujarat.

VOC with public health importance detected in community samples in India:
- Alpha – 3,969
- Beta – 149
- Gamma – 1
- B.1.617, Delta and Kappa – 16,238

Proportion of cases with Variants of Concerns has risen from 10.31% in May 2021 to 51% on 20th June 2021.

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Types & Characteristics of Delta Variant

Delta variant (B.1.617) has 3 subtypes (B.1.617.1, B.1.617.2 and B.1.617.3)

- B.1.617.1 (Kappa) and B.1.617.3 (Lambda) are classified as Variants of Interest (VOI)
- B.1.617.2 (Delta Plus or AY.1) is classified as VOC by Public Health England on 7 May 2021

Delta Plus variant has the following characteristics:

- Increased transmissibility
- Stronger binding to receptors of lung cells
- Potential post vaccination immune escape
- Potential reduction in monoclonal antibody response
**Status of Delta Plus Variant in India**

- 48 cases of Delta Plus Variant found from 45,000 samples sequenced in 11 States
- Characterisation ongoing (3 mutations)
- At present, the Virus is being isolated & cultured at ICMR-NIV
- Ongoing laboratory tests to check the effectiveness of vaccine

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Public Health Interventions & Advisory to States

Public health interventions:

- Cluster containment
- Isolation & Treatment of cases
- Quarantine contacts
- Ramp up vaccination

States/UTs advised to keep strict surveillance in the districts reporting new VOC and take up stringent public health measures

- Testing, contact tracing, genome sequencing of positive samples, restrictions on crowds and intermingling of people

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