Update on SARS-CoV-2 variant nomenclature

THE LATEST ON THE COVID-19 GLOBAL SITUATION & THE MAIN DRIVERS OF TRANSMISSION
Overview

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Current global situation

CASES REPORTED TO WHO AS OF 9 JUNE 2021

- Cases: > 173 million
- Deaths: > 3.7 million

Note: Data smoothed with 7-day moving average
All viruses evolve over time

- Most changes have little to no impact on the virus’ properties
- However, some changes to SARS-CoV-2 lead to variants of the virus that may affect:
  - **virus transmissibility**
  - **disease severity**
  - **efficacy of vaccines**, therapeutics or diagnostic tools
WHO has been monitoring the evolution of SARS-CoV-2 since January 2020

A SARS-CoV-2 variant of concern (VOC)
- Increases transmissibility or
- Changes the clinical disease presentation; or
- Decreases the effectiveness of public health and social measures, available diagnostics, vaccines or therapeutics.

A SARS-CoV-2 variant of interest (VOI)
- Causes community transmission or multiple COVID-19 cases/clusters or has been detected in multiple countries; or
- Is assessed to be a VOI by WHO in consultation with the WHO SARS-CoV-2 Virus Evolution Working Group

- The WHO Virus Evolution Working Group (VEWG) monitors changes to SARS-CoV-2 to detect potential variants of concern (VOC) and variants of interest (VOI) that pose an increased risk to global public health
- Most changes to the virus are insignificant
- However, if significant changes are identified, variants are given scientific names and the public is informed
Nomenclature systems for virus variants are directed at scientists

- GISAID, NEXTstrain and Pango are established systems that name and track virus variants of concern and variants of interest.

- These systems are designed to give scientists a common language in which they can discuss and investigate the evolution of SARS-CoV-2.

- To assist with public discussions of variants, the WHO VEWG and additional scientists established easy-to-pronounce and non-stigmatising labels for SARS-CoV-2 variants.

- The labels used by GISAID, NEXTstrain and Pango will remain in use by scientists.

https://www.gisaid.org/
https://nextstrain.org/
https://cov-lineages.org/
Nomenclature systems used by scientists

An example of how SARS-CoV-2 variants are labelled*:

- The SARS-CoV-2 variants that first circulated were denoted as lineages A or B. As they evolved, their descendants were marked by a series of numbers
- For example, B.1 includes the outbreak in Europe in early 2020
- The variant named B.1.351, is its 351st descendant
- If these names become too long, a new lineage begins under a different letter of the alphabet
- For example, the variant that was first identified in Brazil is called P.1

*Labelling used by Pango; NEXTstrain and GiSAID use a different nomenclature system based on the virus sequence

Image: Visualization of current circulating global lineages by Pango
https://cov-lineages.org/index.html
A new WHO SARS-CoV-2 variant nomenclature aimed at the general public uses letters of the Greek alphabet

• The complex and different SARS-CoV-2 variant naming systems have created confusion among the public. Alternative SARS-CoV-2 variant names have been used that include country names

• However, this can be stigmatizing to the countries or communities from which the virus variants derive their names

• Hence, a new WHO system assigns SARS-CoV-2 variant names that are easy to pronounce and minimizes negative effects on countries and their citizens

• WHO recommends labels using letters of the Greek alphabet, i.e., Alpha, Beta, Gamma

• Once all 24 letters have been assigned, other lists of names will be considered
# WHO labels for SARS-CoV-2 variants of concern (VOC)

As of 31 May 2021

<table>
<thead>
<tr>
<th>WHO label</th>
<th>Pango lineage</th>
<th>GISAID clade/lineage</th>
<th>Nextstrain clade</th>
<th>Earliest documented samples</th>
<th>Date of designation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alpha</td>
<td>B.1.1.7</td>
<td>GRY (formerly GR/501YV1)</td>
<td>20I/S:501YV1</td>
<td>United Kingdom, Sep-2020</td>
<td>18-Dec-2020</td>
</tr>
<tr>
<td>Gamma</td>
<td>P.1</td>
<td>GR/501Y.V3</td>
<td>20J/S:501Y.V3</td>
<td>Brazil, Nov-2020</td>
<td>11-Jan-2021</td>
</tr>
</tbody>
</table>

https://www.who.int/activities/tracking-SARS-CoV-2-variants
https://www.nature.com/articles/s41564-021-00932-w
### COVID-19 Variant Nomenclature

#### WHO labels for SARS-CoV-2 variants of interest (VOI)

*As of 31 May 2021*

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</thead>
<tbody>
<tr>
<td>Zeta</td>
<td>P.2</td>
<td>GR</td>
<td>20B/S.484K</td>
<td>Brazil, Apr-2020</td>
<td>17-Mar-2021</td>
</tr>
<tr>
<td>Eta</td>
<td>B.1.525</td>
<td>G/484K.V3</td>
<td>20A/S484K</td>
<td>Multiple countries, Dec-2020</td>
<td>17-Mar-2021</td>
</tr>
<tr>
<td>Theta</td>
<td>P.3</td>
<td>GR</td>
<td>20B/S:265C</td>
<td>Philippines, Jan-2021</td>
<td>24-Mar-2021</td>
</tr>
<tr>
<td>Iota</td>
<td>B.1.526</td>
<td>GH</td>
<td>20C/S:484K</td>
<td>USA Nov-2020</td>
<td>24-Mar-2021</td>
</tr>
<tr>
<td>Kappa</td>
<td>B.1.617.1</td>
<td>G/452R.V3</td>
<td>21A/S:154K</td>
<td>India, Oct-2020</td>
<td>4-Apr-2021</td>
</tr>
</tbody>
</table>

[https://www.who.int/activities/tracking-SARS-CoV-2-variants](https://www.who.int/activities/tracking-SARS-CoV-2-variants)
Communicate using the new WHO labels for SARS-CoV-2 variants

All WHO representatives are encouraged to:

• Introduce the new labels when publicly speaking about VOCs and VOIs

• Share the information with and encourage national counterparts to adopt these new labels in all public communications
Additional resources

• Tracking SARS-CoV-2 variants
  https://www.who.int/activities/tracking-SARS-CoV-2-variants

• WHO issues best practices for naming new human infectious diseases

• www.gisaid.org
  The GISAID Initiative promotes the rapid sharing of data from all influenza viruses and the coronavirus causing COVID-19
  https://www.gisaid.org/

• www.nextstrain.org
  Nextstrain is an open-source project to harness the scientific and public health potential of pathogen genome data
  https://nextstrain.org

• COVID-19 weekly epidemiological update & weekly operational update
  https://www.who.int/emergencies/diseases/novel-coronavirus-2019/situation-reports

• www.cov-lineages.org
  The latest Pango lineages: daily updated information about currently circulating global lineages
  https://cov-lineages.org/
COVID-19 protective measures
Protect yourself & others

- Keep your distance
- Wash your hands frequently
- Cough & sneeze into your elbow
- Ventilate or open windows
- Wear a mask