



Bij deze een uitvraag of er zaken zijn die jullie graag beantwoord zouden willen zien, of die ik zou moeten inbrengen vanuit Nederland.

Excuses voor de korte deadline: graag ontvang ik jullie suggesties zo spoedig mogelijk.

Met vriendelijke groet

5.1.2e

**Van:** WHO Media <5.1.2e@campaign.who.int>

**Verzonden:** 22 dec. 2020 09:16

**Aan:** "5.1.2e)" <5.1.2e@minvws.nl>

**Onderwerp:** Disease Outbreak News: SARS-CoV-2 Variant – United Kingdom

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Tuesday, 22 December 2020

### Disease Outbreak News

#### [SARS-CoV-2 Variant - United Kingdom](#)

On 14 December 2020, authorities of the United Kingdom (UK) reported to WHO that a new SARS-CoV-2 variant was identified through viral genomic sequencing. This variant is referred to as SARS-CoV-2 VUI 202012/01 (Variant Under Investigation, year 2020, month 12, variant 01). Initial analysis indicates that the variant may spread more readily between people. Investigations are ongoing to determine if this variant is associated with any changes in the severity of symptoms, antibody response or vaccine efficacy.

A total of 1108 cases infected with SARS-CoV-2 VUI 202012/01 have been detected in the UK as of 13 December 2020. The variant was picked up as part of an epidemiological and virological investigation initiated earlier in December 2020 following an unexpected rise in COVID-19 cases in South East England. It was characterized by a more than three-fold increase in the 14-day case notification rate from epidemiological week 41 to week 50 (5 October to 13 December 2020). On average, between 5 - 10% of all SARS-CoV-2 viruses have routinely been sequenced in the UK and 4% routinely sequenced in South East England since the beginning of the pandemic. From 5 October to 13 December, over 50% of isolates were identified as the variant strain in South East England. Retrospective analysis traced the first identified variant to Kent, South East England, on 20 September 2020, which was followed by a rapid increase of the same variant identified later in November. Most COVID-19 cases from whom this variant has been identified have occurred in people under 60 years of age.

The variant is defined by the presence of a range of 14 mutations resulting in amino acid changes and three deletions. Some of these mutations may influence the transmissibility of the virus in humans:

- One of the mutations identified (N501Y) is altering an amino acid within the six key residues in the receptor binding domain (RBD). According to the Global Initiative on Sharing Avian Influenza Data (GISAID) database, this same receptor binding domain mutation (N501Y) has been independently reported in several countries including South Africa (n=45) and Australia (n=37). Sequence analysis revealed that N501Y mutation of the virus reported in the UK and South Africa originated separately.
- Another mutation of biological significance, P681H, has been found in the RBD.
- Finally, the deletion at position 69/70 has been found to affect the performance of some diagnostic PCR assays that use an S gene target. Most PCR assays worldwide use multiple targets and therefore the impact of the variant on diagnostics is not anticipated to be significant.

The new VUI-202012/01 variant has been identified in several countries including Australia, Denmark, Italy, Iceland and the Netherlands.

Preliminary reports by the UK are that this variant is more transmissible than previous circulating viruses, with an estimated increase of between 40% and 70% in transmissibility (adding 0.4 to the basic reproduction number R0,

bringing it to a range of 1.5 to 1.7). Laboratory studies are ongoing to determine whether these variant viruses have different biological properties or alter vaccine efficacy. There is not enough information at present to determine if this variant is associated with any change in severity of clinical disease, antibody response or vaccine efficacy.

#### **Public health response**

The authorities in the UK are conducting epidemiological and virological investigations to further assess the transmissibility, infection-severity, risk of reinfection and antibody response of this new variant. As one of the mutations (N501Y) is in the receptor binding domain, the authorities are urgently investigating the neutralization activity of sera from recovered and vaccinated patients against this variant to determine if there is any impact on vaccine performance.

Genomic data of this variant has been uploaded to GISAID by the authorities of the UK and genomic surveillance of the virus continues across the country to monitor the situation.

On 19 December 2020, authorities in the UK announced that affected areas would be subject to Tier 4 restrictions including reduced social gatherings, tighter movement restrictions, requests to work from home wherever possible, and closures of non-essential businesses.

#### **WHO risk assessment**

All viruses, including SARS-CoV-2, change over time, but most of these mutations or changes do not have a direct benefit to the virus or may even be detrimental to its propagation. Further laboratory investigations are required to more fully understand the impact of specific mutation on viral properties and the effectiveness of diagnostics, therapeutics and vaccines. These investigations are complex and require time and collaboration amongst different research groups.

The sharing of full genome sequences is facilitating detailed analyses by partners. The WHO SARS-CoV-2 Virus Evolution Working Group is working with colleagues from the UK to better understand the available results and support further studies.

Further epidemiological and laboratory-based studies are rapidly required to understand the implications of these viruses in terms of available SARS-CoV-2 clinical presentation, diagnosis, treatment and vaccine development.

#### **WHO advice**

The preliminary findings by the UK signal the broader issue of SARS-CoV-2 virus mutations, and WHO underscores the importance of prompt sharing of epidemiological, virological and full genome sequence information with other countries and research teams, including through open-source platforms such as GISAID and others.

WHO advises that further epidemiological and virological studies be conducted to understand the specific mutations described by the UK and other countries to further investigate any changes in the function of the virus in terms of infectivity and pathogenicity. WHO advises all countries to increase the routine sequencing of SARS-CoV-2 viruses where possible, and sharing of sequence data internationally, in particular, to report if the same mutations of concern are found.

WHO would like to draw attention to the concern about the reported loss of performance of PCR assays that target the spike (S) gene of the virus. Laboratories using commercial PCR kits for which the targeted viral genes are not clearly identified in the manufacturer's instructions are advised to contact the manufacturer for more information. Laboratories using in-house PCR assays that target the S gene of the virus should also be aware of this potential issue. In order to limit the impact on the detection capacities in the countries, an approach using different assays in parallel or multiplex assays targeting different viral genes is also recommended to allow the detection of potential arising variants.

All countries need to assess their level of local transmission and apply appropriate prevention and control activities including adapting public health and social measures as per WHO guidance.

It is important to remind communities and health workers of the basic principles to reduce the general risk of transmission of acute respiratory infections:

- Avoiding close contact with people suffering from acute respiratory infections;
- Frequent hand-washing, especially after direct contact with ill people or their environment;
- People with symptoms of acute respiratory infection should practice cough etiquette (maintain distance, cover coughs and sneezes with disposable tissues or clothing, and wash hands);

- Within healthcare facilities, enhance standard infection prevention and control practices in hospitals, especially in emergency departments; and
- Wearing masks where appropriate and ensuring good ventilation.

WHO recommends the health measures as listed above for all travelers, including to and from the UK. In case of symptoms suggestive of acute respiratory illness either during or after travel, travelers are encouraged to seek medical attention and share their travel history with their health care provider. Health authorities should work with travel, transport, and tourism sectors to provide travelers with information to reduce the general risk of acute respiratory infections, via travel health clinics, travel agencies, conveyance operators, and at points of entry. In line with the advice provided by the Emergency Committee on COVID-19 at its most recent meeting, WHO recommends that States Parties should regularly re-consider measures applied to international travel in compliance with Article 43 of the IHR (2005) and continue to provide information and rationale to WHO on measures that significantly interfere with international traffic. Countries should also ensure that measures affecting international traffic are risk-based, evidence-based, coherent, proportionate and time limited.

WHO has recently published an interim guidance - "[Considerations for implementing a risk-based approach to international travel in the context of COVID-19](#)", to provide countries with a risk based approach to decision-making process for calibrating travel related risk mitigation measures in the context of international travel, aiming at reducing travel-associated exportation, importation and onward transmission of SARS-CoV-2 while avoiding unnecessary interference with international traffic.

WHO recommends that countries take a risk-based approach. National authorities are encouraged to publish their risk assessment methodology and the list of departure countries to which restrictions apply; and these should be updated regularly. In all circumstances, essential travel (e.g. emergency responders; providers of public health technical support; critical personnel in transport and security sector such as seafarers; repatriations; and cargo transport for essential supplies such as food, medicines, and fuel) identified by countries should always be prioritized and facilitated.

For more information on COVID-19, please see:

- [WHO COVID-19 information](#)
- [WHO Technical interim guidance for COVID-19](#)
- [WHO COVID-19 Weekly Epidemiological Update and Weekly Operational Update](#)
- [WHO Considerations for implementing a risk-based approach to international travel in the context of COVID-19](#)
- [WHO Dashboard for COVID-19](#)
- [WHO Public Health and Social Measures](#)
- [European Centre for Disease Prevention and Control: Threat Assessment Brief: Rapid increase of a SARS-CoV-2 variant with multiple spike protein mutations observed in the United Kingdom](#)
- [Public Health England: PHE investigating a novel variant of COVID-19](#)
- [Global Initiative on Sharing Avian Influenza Data \(GISAID\)](#)



**Media contacts:**

5.1.2e [@who.int](#)



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