From the UK Health Security Agency's Chief Medical Adviser, National Medical Director of NHS England, and Chief Nursing Officer for England - 28th November 2021

Update on COVID-19 Variant B.1.1.529

Dear colleagues,

Data is still emerging on Variant B.1.1.529 but it is currently a significant concern. It is now designated as a Variant of Concern by the World Health Organisation and the UK. The New and Emerging Respiratory Virus Threats Advisory Group (NERVTAG) met on 26/11/2021, the main summary of discussions in relation to B.1.1.529 are:

- There are a large number of mutations compared to Delta variant, many in the spike protein gene and also in the rest of the genome. Some are shared with other variants of concern and some are distinct. The ones seen before have a relationship to transmissibility as well as vaccine escape and natural immune response.
- The number of B.1.1.529 cases has rapidly increased in one area of South Africa (Gauteng, containing Johannesburg and Pretoria, and home to one quarter of South Africa's population). The South African authorities estimate an R-value of 1.9 for B.1.1.529 in Gauteng, however it is likely widespread across all of South Africa.
- The variant displays S-gene target failure (SGTF) on RT-PCR. This feature can be used as a proxy for B.1.1.529 if other variants with the same feature are not concurrently circulating (which is currently the case in the UK).
- Based on experience from other variants, laboratory data on individual mutations, and protein modelling, it is plausible that Omicron may have altered transmissibility, reduction in vaccine effectiveness and/or reduction in protection from natural immunity. However as yet there is a high level of uncertainty with no laboratory data and limited epidemiological data on this specific variant.
- The mutations also suggest that there may be an impact on the effectiveness of some therapeutic monoclonal antibodies, though this has not been confirmed.
- B.1.1.529 is being monitored by sequencing and S gene target failure in some commercial PCR tests (where sufficient sequencing has been undertaken to confirm the correlation). On this basis it has already spread widely in South Africa, is present in Botswana, and has been imported to multiple countries including the UK.

Therefore, a precautionary approach is being advised.

The public advice is:

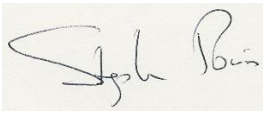
- On Thursday 25th November, South Africa, Botswana, Lesotho, Eswatini, Zimbabwe and Namibia were added to the UK's travel red list.
- From 4am on Sunday 28th November, Malawi, Mozambique, Zambia and Angola were also added to the travel red list.
- Non-UK and Irish residents i.e. people who are not normally resident within the UK or Ireland regardless of nationality, who have been in these countries in the previous 10 days will be refused entry into England.
- Those returning from any of these places before 4am on Sunday 28th November must take an NHS PCR on day 2 and day 8 – they must self-isolate for 10 days at home along with their households.
- After 4am Sunday, residents of UK and Ireland returning will have to stay in Managed Quarantine Services.
- Anyone who has returned from those areas in the past 10 days should take a PCR – regardless of whether they have booked or used a lateral flow device, and regardless of its result. UKHSA is actively following up with these individuals.

The advice for healthcare workers is:

- If these countries are identified when taking the travel history of your patients take particular note. If they have returned in the past 10 days, then order a PCR test and isolate them in a side room if possible. Prioritise the use of side rooms or other appropriate isolation for those with any respiratory symptoms or in whom COVID-19 is suspected. Continue to use appropriate PPE.
- In addition, contact your local health protection team if COVID-19 is **suspected** in a patient whose symptoms started following return from these countries within the past 10 days.
- UKHSA will prioritise sequencing for anyone with S gene target failure. There will be separate "Laboratory Action Required - Omicron enhanced surveillance for testing laboratories" advice for pathology services (see Note 1 below).
- Continue to follow the national "Infection prevention and control for seasonal respiratory infections in health and care settings (including SARS-CoV-2) for winter 2021 to 2022" advice, including risk assessment for the use of RPE for patient care in specific situations when managing respiratory infectious agents.
- Healthcare workers who return from any travel overseas to countries not on the travel red list should not return to work until they have had an initial negative PCR. They should also do daily LFDs until day 10 after return.



Susan Hopkins
Chief Medical Adviser, UK Health Security Agency



Steve Powis
National Medical Director, NHS England and Improvement



Ruth May,
National Nursing Director, NHS England and Improvement

Note 1

Table 1 details possible Omicron results of relevance to in-use primary molecular and reflex genotyping assays that NHS services may use as part of Pillar 1 testing:

- *Omicron contains the S gene deletion at position 69-70. This can be identified through target failure in the Thermofisher Taqpath assay and other S gene assays that target this region*

- *Omicron contains the K417N mutation and does not contain the P681R mutation. This profile is the same seen for Mu and Beta variants both of which are absent or in low circulation in the UK at the current time and therefore this profile can be used as an indicator for a probable Omicron*

Laboratories are asked to perform primary SARS-CoV-2 testing and onwards genotyping and sequencing samples according to their current arrangements **as promptly as possible**. In addition, any observations of laboratory results with the profiles stated in table 1 should be highlighted to the sequencing laboratory and reported to the UKHSA virology cell WNCoV.virology@phe.gov.uk for follow-up. **All cases must be notified to the local health protection team (HPT), details can be found here** Find your local health protection team in England - GOV.UK (www.gov.uk)**.**

Table 1. Profile for possible Omicron samples (to be confirmed by sequencing)

Target observation	**Action required by testing laboratory**
S gene target failure (SGTF) in primary assay **AND** remaining targets are CT<30	Refer via existing pathways for sequencing and genotyping. **Sequencing has priority** where sample volume is insufficient for both. Alert WNCoV.virology@phe.gov.uk
P681R wildtype (no amplification/negative), K417N mutant (detected)	Refer via existing pathways for sequencing. Alert WNCoV.virology@phe.gov.uk