

Current major event

New SARS-CoV-2 variant

On 14 December, health officials in the United Kingdom reported a new variant of SARS-CoV-2 circulating in East and South-East of England as well as London. Initial preliminary epidemiologic analyses, modeling, phylogenetic and clinical analysis indicate that there may be an increase in the transmissibility of this variant. WHO advises all countries to increase the sequencing of SARS-CoV-2 viruses where possible and to report if the same mutations of concern are found while sharing the sequenced data internationally.

Editorial note

Viruses constantly change through mutation, and new variants of a virus are expected to occur over time. Multiple variants of the virus that causes COVID-19 have been identified worldwide, but so far most of these changes had little impact on its severity and transmissibility.

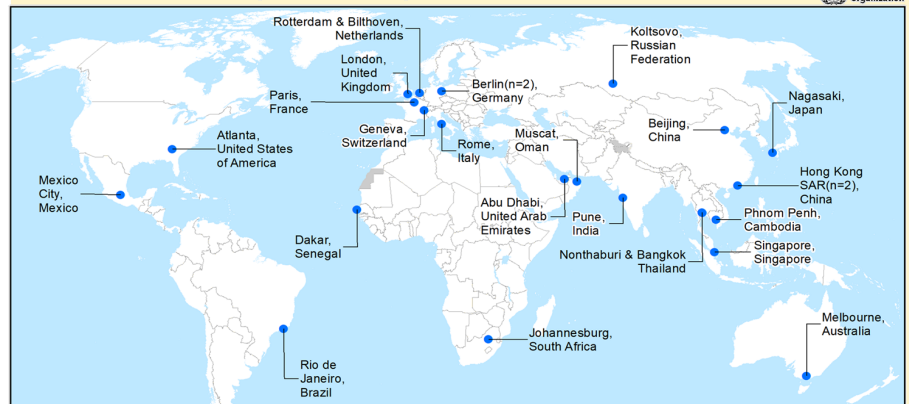
The new variant was termed initially VUI 202012/01 (Variant under investigation, year 2020, month 12, variant 01). Following a risk assessment conducted by the relevant expert committee, it received the designated Variant of Concern (VOC). The variant, a distinct phylogenetic cluster named lineage B.1.1.1.7, is defined by 23 mutations, a relatively large number to occur in single cluster. This includes 13 non-synonymous mutations, 4 deletions and 6 synonymous mutations. The non-synonymous mutations include a series of spike protein mutations. Three of these mutations have potential biological effects that have been described previously to varying extents:

- Mutation N501Y is one of six key contact residues within the receptor-binding domain (RBD) and has been identified as increasing binding affinity to human ACE2.
- The spike deletion 69-70del has also occurred a number of times in association with other RBD changes.
- Mutation P681H is immediately adjacent to the furin cleavage site, a known location of biological significance.

The most unusual and concerning single mutation in this cluster is N501Y, but the summative effect of this large number of mutations is also unknown and of concern. Initial epidemiologic analysis and modeling indicate that there may be a change in the transmissibility of this variant, as well as reduced performance in diagnostic tests that use a single gene to identify the virus, known as the S gene target. There is so far no evidence of changes in severity, antibody response or vaccine efficacy.

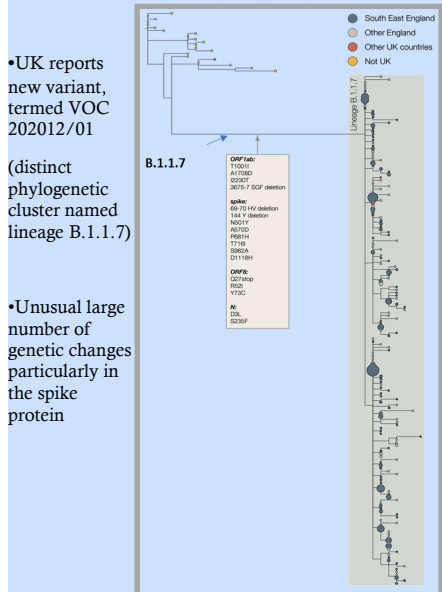
The new variant was detected in through routine genetic analysis undertaken as part of an epidemiological investigation to investigate increased incidence of COVID-19 cases in Kent. Through retrospective analysis, it was found that initial cases emerged in late September and have been spreading geographically since then.

WHO COVID-19 reference laboratory network as of 29 April 2020 (n=26)



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Phylogenetic tree of the B.1.1.7 lineage and its nearest outgroup sequences



Source: <https://virological.org/t/preliminary-genomic-characterisation-of-an-emergent-sars-cov-2-lineage-in-the-uk-defined-by-a-mutual-set-of-spike-mutations/5637>

As for 26 December, around 3000 cases of this new variant, confirmed by genome sequencing, have been reported from London as well as the South-East and East regions of England. Moreover, the new variant was reported from Australia, Belgium, Canada, Denmark, Finland, France, Germany, Hong Kong SAR, Iceland, India, Ireland, Israel, Italy, Japan, the Netherlands, Norway, Portugal, Singapore, South Korea, Spain, Sweden and Switzerland. A few cases have been reported in the Eastern Mediterranean Region from Jordan, Lebanon and United Arab Emirates (UAE).

EMRO has advised countries to use multiplex RT PCR to screen for potential variant cases, then perform whole gene sequencing or send to reference laboratories with such capacity (see map). The regional reference laboratory in UAE has been identified to provide external sequencing for other countries without such capacity. Public health and social measures should continue to be implemented.

Update on outbreaks in the Eastern Mediterranean Region

COVID-19 in 22 EMR countries

Current public health events of concern

[cumulative N° of cases (deaths), CFR %]

Country	Cumulative N° of cases (deaths), CFR %
Afghanistan	[52 007 (2170), 4.2%]
Bahrain	[91 518 (351), 0.4%]
Djibouti	[5805 (61), 1.1%]
Egypt	[131 315 (7352), 5.6%]
Iran (Islamic Republic of)	[1 194 963 (54 574), 4.6%]
Iraq	[590 779 (12 767), 2.2%]
Jordan	[286 356 (3729), 1.3%]
Kuwait	[149 449 (929), 0.6%]
Lebanon	[169 472 (1379), 0.8%]
Libya	[98 381 (1436), 1.5%]
Morocco	[430 562 (7204), 1.7%]
occupied Palestinian territory (oPt)	[148 540 (1406), 0.9%]
Oman	[128 290 (1491), 1.2%]
Pakistan	[471 335 (9874), 2.1%]
Qatar	[142 903 (244), 0.2%]
Saudi Arabia	[362 066 (6176), 1.7%]
Somalia	[4690 (127), 2.7%]
Sudan	[23 316 (1468), 6.3%]
Syrian Arab Republic	[10 932 (669), 6.1%]
Tunisia	[131 592 (4466), 3.4%]
United Arab Emirates	[200 892 (655), 0.3%]
Yemen	[2096 (607), 29%]