

Table 2: Overview of emerging information on key variants of concern, as of 13 April 2021*

Nextstrain clade	20I/501Y.V1	20H/501Y.V2†	20J/501Y.V3
PANGO lineage	B.1.1.7	B.1.351	B.1.1.28.1, alias P.1†
GISAI clade	GR	GH	GR
Alternate names	VOC 202012/01†	VOC 202012/02	VOC 202101/02
First detected by	United Kingdom	South Africa	Brazil / Japan
Earliest sample(s)	20 September 2020	Early August 2020	December 2020
Key spike mutations	H69/V70 deletion; Y144 deletion; N501Y; A570D; and P681H	L242/A243/L244 deletion; K417N; E484K; N501Y	K417T; E484K; N501Y
Common mutation	S106/G107/F108 deletion in non-structural protein 6 (nsp6)		
Transmissibility	Increased (43%-90%) ¹ , increased secondary attack rate [11% (95%CI: 10.9-11.2%) among closer contacts] ²	Increased [1.50 (95% CI: 1.20-2.13) times more transmissible than previously circulating variant ^{3, 4}	Increased, more transmissible than previous circulating variants ⁵
Severity	Possible increased risk of hospitalization ⁶ , severity and mortality ⁷ . Other studies showing limited impact/mixed findings ^{1, 8, 9}	Possible increased risk of in-hospital mortality by 20% ^{4,10}	Under investigation, limited impact ⁵
Assessment of potential reinfection/breakthrough	Slight reduction in neutralization capacity but overall neutralizing titers still remained above the levels expected to confer protection ¹¹	Decreased neutralization capacity, suggesting potential increased risk of reinfection ^{3, 12, 13}	Decreased neutralization capacity, reinfections reported ^{14, 15}
Potential impacts on vaccines	<ul style="list-style-type: none"> No or minimal impact on post-vaccine neutralization by Moderna, Pfizer-BioNTech, Oxford-AstraZeneca, Novavax, Bharat, Gamaleya, and Sinopharm vaccines^{11, 16-30,31}, however there is some evidence of more substantial loss for AstraZeneca.³² Bharat, Gamaleya, Sinopharm, and Sinovac vaccines have each been evaluated by single studies reporting no significant reduction in neutralization.^{33, 34} No significant change in prevention of disease by Oxford-AstraZeneca, Novavax, and Pfizer³⁵⁻³⁷ Evidence for prevention of infection limited. Reduced effect reported for Oxford-AstraZeneca.³² 	<ul style="list-style-type: none"> Post-vaccine neutralization reductions from several from studies range from minimal to substantial for Moderna and Pfizer. Substantial reductions have been found for the Oxford-AstraZeneca product.^{29, 40} Minimal to modest reductions have been found for Sinopharm. A single study found modest reduction for Sinovac. Single studies found more substantial reduction for Novavax and Gamaleya. Efficacy against disease was retained, but somewhat lower, in South Africa for the Novavax and Janssen vaccines when 501Y.V2 was dominant compared to settings without this variant.^{41, 42} In a small study, AstraZeneca vaccine did not demonstrate vaccine efficacy against mild-moderate COVID-19 disease, with wide confidence intervals, while efficacy against severe disease was not assessed and is undetermined.^{43, 44} Information regarding vaccine impact on asymptomatic infection by 501Y.V2 remains a gap. 	<ul style="list-style-type: none"> Limited to modest reduction in post-vaccine neutralization by Oxford-AstraZeneca, Moderna and Pfizer vaccines; however there is some evidence of more substantial reduction.^{18, 21, 28, 29, 38, 45, 46} Preliminary suggestion of loss of neutralization following vaccination with Sinovac⁴⁷ Preliminary vaccine effectiveness of Sinovac in setting of P.1 was estimated in Brazil⁶
Potential impacts on diagnostics	S gene target failure (SGTF). No impact on Ag RDTs observed ⁴⁸	None reported to date	None reported to date
Countries reporting cases (newly reported since the last update**)	132 (2)	82 (2)	52 (7)

†While work is ongoing to establish standardized nomenclature for key variants, these are the names by which WHO will refer to them in this publication.

*Generalized findings as compared to non-VOC viruses. Based on emerging evidence from multiple countries, including non-peer reviewed preprint articles and reports from public health authorities and researchers – all subject to ongoing investigation and continuous revision.

**Includes official and unofficial reports of VOCs detections in countries/territories/areas.