27 May 2021 Risk assessment for SARS-CoV-2 variant: VOC-21APR-02 (B.1.617.2) Public Health England

Indicator	RAG*	Confidence	Assessment and rationale
Transmissibility between humans		**HIGH**	**Transmissibility appears greater than wild type (first wave) SARS-CoV-2** There is an increased growth rate compared to B.1.1.7 in the current context. Secondary attack rates, including household secondary attack rates, are higher for B.1.617.2, but these are not yet corrected for vaccination status. There is in vitro evidence suggestive of increased replication in biological systems that model human airway. The observed epidemiological growth rate and replacement of B.1.1.7 are unlikely to be due entirely to immune escape, given the improved understanding of antigenic change; it is likely that B.1.617.2 is more transmissible than B.1.1.7. The magnitude of the change in transmissibility remains uncertain.
Infection severity			**Insufficient information** Most cases are recent and there has been insufficient follow up time to allow an assessment of severity. Early warning signals are being monitored with no evidence of increases in hospitalisation in national data.
Immunity after natural infection		**LOW**	**Experimental evidence of functional evasion of natural immunity but insufficient epidemiological data** Pseudovirus and live virus neutralisation using convalescent sera from first wave and B.1.1.7 infections shows a reduction in neutralisation. There are small numbers of reinfections detected through national surveillance which would be expected with a prevalent variant. These are being further investigated. There is no signal of an increase in reinfections in individuals in a national healthcare worker cohort study (95% vaccinated); monitoring continues.
Vaccines		**MODERATE**	**Epidemiological and laboratory evidence of reduced vaccine effectiveness** National vaccine effectiveness monitoring shows a reduction in vaccine effectiveness against symptomatic infection after 1 dose of vaccine for B.1.617.2 compared to B.1.1.7 (moderate confidence).Current data suggest this is an absolute reduction of approximately 20% after 1 dose. Iterated analysis continues to show vaccine effectiveness is higher after 2 doses with a small reduction for B.1.617.2 (moderate confidence). Although this is observational data subject to some biases, it holds true across several analytic approaches and is consistent with observed outbreaks. It is now strongly supported by pseudovirus and live virus neutralisation data from multiple laboratories. There are no data on whether prevention of transmission is affected and insufficient data to assess vaccine effectiveness against severe disease. The acquisition of an additional mutation which may be antigenically significant in a small number of cases is noted. Monitoring continues.
Overall assessment			B.1.617.2 has continued to replace B.1.1.7 and there are now clusters of areas with clearly growing incidence of B.1.617.2. There are also areas where there are limited S gene target data which may obscure the most recent expansion of the outbreak. The observed growth rate is most likely to be due to a combination of place based context, transmissibility and immune escape. The priority investigations are vaccine effectiveness against hospitalisation and transmission, household secondary attack rate corrected for vaccination, characterisation of the generation time, viral load and period of infectivity, epidemiological studies of reinfection and comparative severity analyses.

The therapeutics risk assessment is under review for all variants and is not included.
*refer to scale and confidence grading slide