Walsall Healthcare NHS
NHS Trust

Local Outbreak Engagement Board

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Covid-19 variants of concern

Table 1. Variant lineage and designation as of 21 June 2021 (provisionally extinct variants removed)

World Health Organization nomenclature as of 21 June 2021	Lineage	Designation	Status
Alpha	B.1.1.7	VOC-20DEC-01	VOC
Beta	B.1.351	VOC-20DEC-02	VOC
Gamma	P.1	VOC-21JAN-02	VOC
Delta	B.1.617.2, AY.1 and AY.2	VOC-21APR-02	VOC

Indian variant

- identified in January 2021
- renamed ‘Delta variant’ in May 2021

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Covid-19 Delta variant

Delta, also known as B.1.617.2, belongs to a viral lineage first identified in India during a ferocious wave of infections there in April and May.

Delta seems to be around 60% more transmissible than the already highly infectious Alpha variant (also called B.1.1.7) identified in the United Kingdom.

A preliminary analysis of 43,338 sequenced cases showed an increased risk of hospitalisation within 14 days of specimen date (HR 2.26, 95% CI 1.32-3.89, p=0.003) … for Delta cases compared to Alpha cases, after adjustment for confounders

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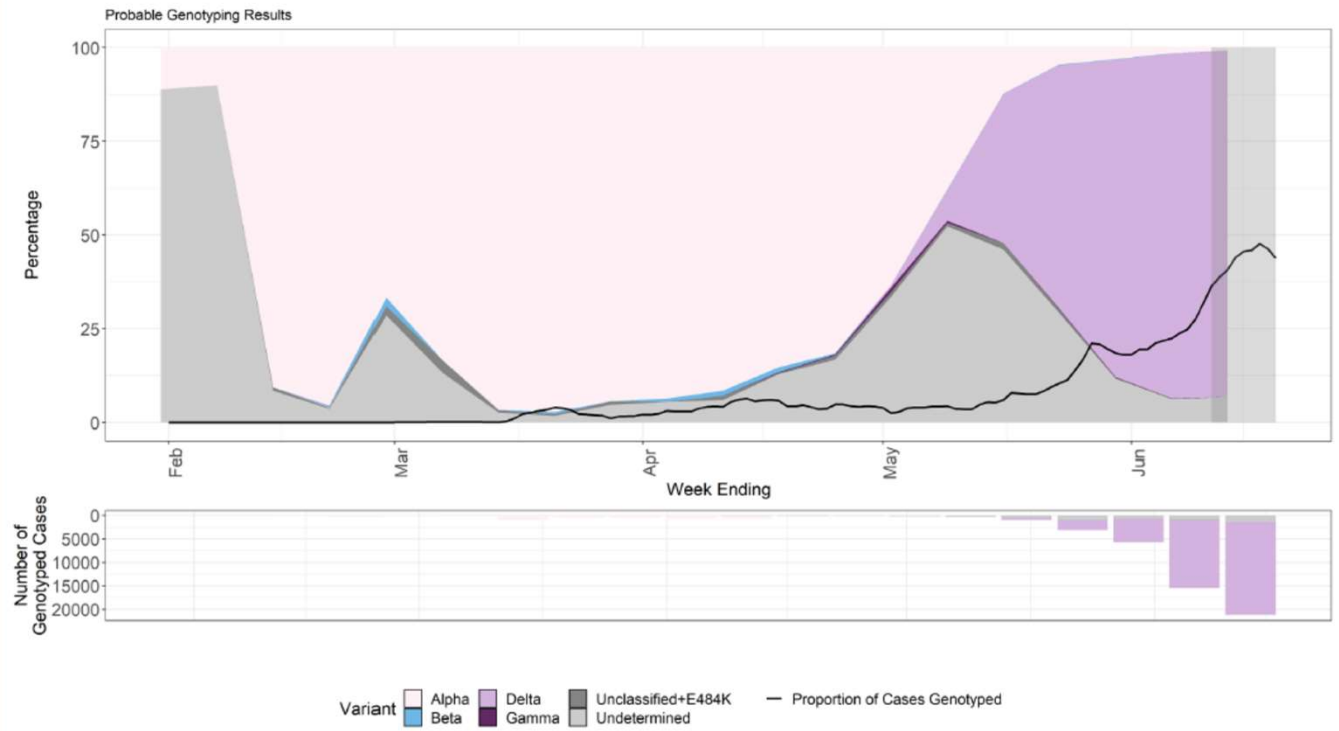
Prevalence of variants

Figure 3. Variant prevalence for all England available genotyped cases from 1 February 2021 as of 21 June 2021 (excluding 1 case where the specimen date was unknown). (Find accessible data used in this graph in underlying data).



Deaths from Alpha and Delta variants

Table 2. Number of confirmed (sequencing) and probable (genotyping) cases by variant as of 21 June 2021

Variant	Confirmed (sequencing) case number	Probable (genotyping) case number*	Total case number	Case proportion*	Deaths	Case fatality	Cases with 28 day follow up	Deaths among those with 28 day follow up	Case Fatality among those with 28 day follow up
Alpha	219,570	5,515	225,085	70.3%	4,262	1.9% (1.8 - 2.0%)	219,948	4,259	1.9% (1.9 - 2.0%)
Beta	892	54	946	0.3%	13	1.4% (0.7 - 2.3%)	874	13	1.5% (0.8 - 2.5%)
Delta	50,283	41,773	92,056	28.8%	117	0.1% (0.1 - 0.2%)	11,250	32	0.3% (0.2 - 0.4%)

Vaccines effectiveness

Two doses of vaccine are very effective in preventing symptoms and hospital admission

Table 8. Vaccine effectiveness against symptomatic disease for Alpha and Delta variants

Vaccination status	Vaccine effectiveness (%)	
	Alpha	Delta
Dose 1	49 (46 to 52)	35 (32 to 38)
Dose 2	89 (87 to 90)	79 (78 to 80)

Table 9. Vaccine effectiveness against hospitalisation for Alpha and Delta variants

Vaccination status	Vaccine Effectiveness (%)	
	Alpha	Delta
Dose 1	78 (64 to 87)	80 (69 to 88)
Dose 2	93 (80 to 97)	96 (91 to 98)

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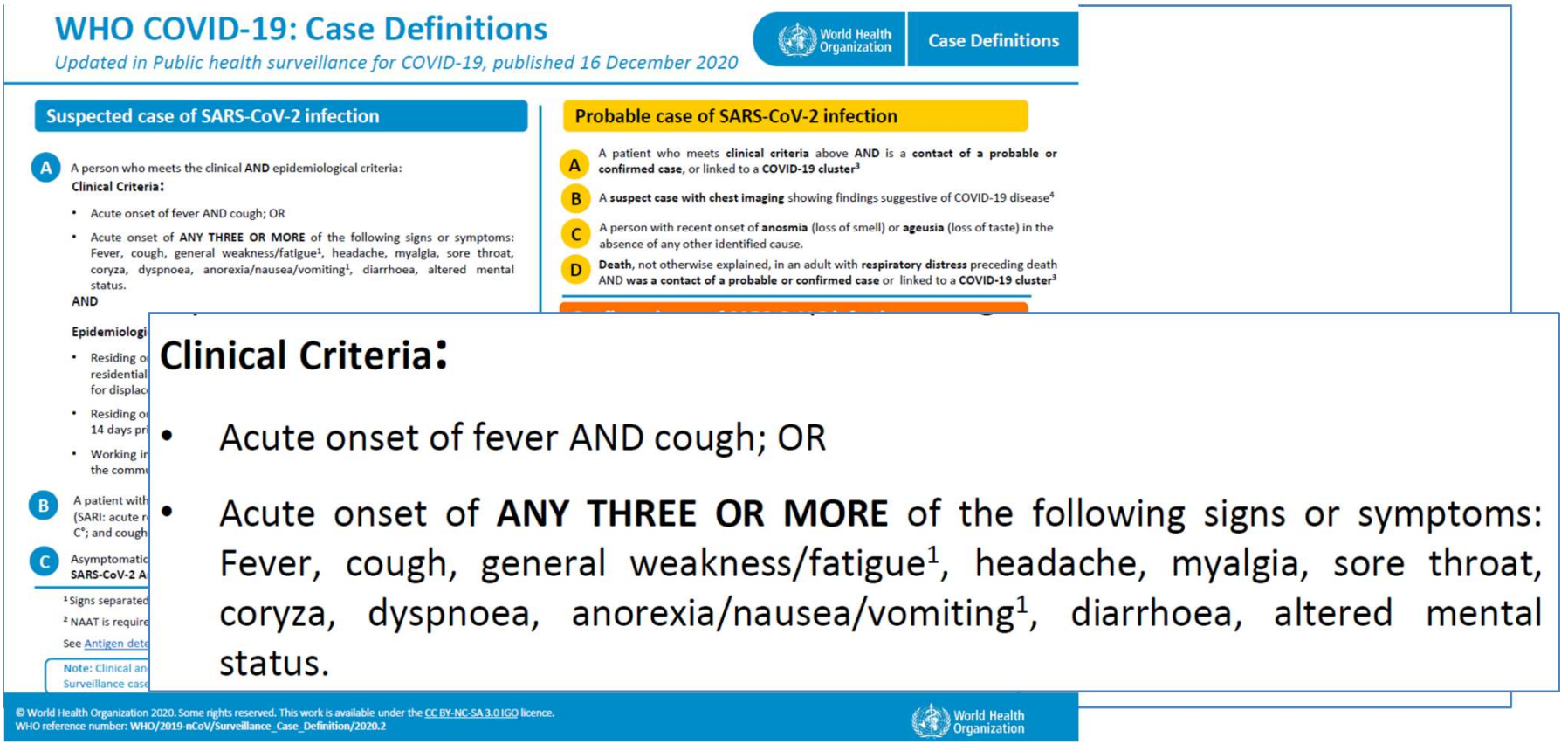
Covid-19 Delta variant

The main symptoms of coronavirus (COVID-19) are:

- **a high temperature** – this means you feel hot to touch on your chest or back (you do not need to measure your temperature)
- **a new, continuous cough** – this means coughing a lot for more than an hour, or 3 or more coughing episodes in 24 hours (if you usually have a cough, it may be worse than usual)
- **a loss or change to your sense of smell or taste** – this means you've noticed you cannot smell or taste anything, or things smell or taste different to normal

Most people with symptoms have at least one of these. About 1 in 3 people with COVID-19 do not have symptoms but can still infect others.

Covid-19 symptoms



WHO COVID-19: Case Definitions

Updated in Public health surveillance for COVID-19, published 16 December 2020

World Health Organization | Case Definitions

Suspected case of SARS-CoV-2 infection

A A person who meets the clinical **AND** epidemiological criteria:

Clinical Criteria:

- Acute onset of fever AND cough; OR
- Acute onset of **ANY THREE OR MORE** of the following signs or symptoms: Fever, cough, general weakness/fatigue[1], headache, myalgia, sore throat, coryza, dyspnoea, anorexia/nausea/vomiting[1], diarrhoea, altered mental status.

AND

Epidemiologi

- Residing o… residential… for displac…
- Residing o… 14 days pr…
- Working in… the commu…

B A patient with… (SARI: acute r… C°; and cough…

C Asymptomatic… **SARS-CoV-2 A…**

[1] Signs separated…

[2] NAAT is require…

See Antigen dete…

Note: Clinical an… Surveillance case…

Probable case of SARS-CoV-2 infection

A A patient who meets **clinical criteria** above **AND** is a **contact of a probable or confirmed case**, or linked to a **COVID-19 cluster**[3]

B A **suspect case with chest imaging** showing findings suggestive of COVID-19 disease[4]

C A person with recent onset of **anosmia** (loss of smell) or **ageusia** (loss of taste) in the absence of any other identified cause.

D **Death**, not otherwise explained, in an adult with **respiratory distress** preceding death AND **was a contact of a probable or confirmed case** or linked to a **COVID-19 cluster**[3]

World Health Organization

Clinical Criteria:

- Acute onset of fever AND cough; OR
- Acute onset of **ANY THREE OR MORE** of the following signs or symptoms: Fever, cough, general weakness/fatigue[1], headache, myalgia, sore throat, coryza, dyspnoea, anorexia/nausea/vomiting[1], diarrhoea, altered mental status.

25 June 2021 Risk assessment for SARS-CoV-2 variant: Delta (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) virus.** Delta continues to demonstrate a substantially increased growth rate compared to Alpha, across multiple analyses. Secondary attack rates and household transmission studies support increased transmissibility. There is in vitro evidence suggestive of increased replication in biological systems that model human airway. It is highly likely that Delta is more transmissible than Alpha.
Infection severity		**LOW**	**Increased severity (hospitalisation risk) when compared to Alpha.** Early evidence from England and Scotland suggests there may be an increased risk of hospitalisation compared to contemporaneous Alpha cases. A large number of cases are still within the follow up period and there is a limited understanding of clinical course of disease.
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 Alpha infections shows a reduction in neutralisation. National surveillance analyses are underway but there is currently insufficient evidence to assess whether the risk of reinfection differs between Delta and Alpha.
Vaccines		**HIGH**	**Epidemiological and laboratory evidence of reduced vaccine effectiveness** There are now analyses from England and Scotland supporting a reduction in vaccine effectiveness for Delta compared to Alpha against symptomatic infection. This is more pronounced after one dose. Iterated analysis continues to show vaccine effectiveness against Delta is high after 2 doses. Current evidence suggests that VE against hospitalisation is maintained. Although this is observational data subject to some biases, it holds true across several analytic approaches and the same effect is seen in both English and Scottish data. It is strongly supported by pseudovirus and live virus neutralisation data from multiple laboratories. There are no data on whether prevention of transmission is affected. Further age stratified vaccine effectiveness analysis is required.
Overall assessment			Delta is predominant. All analyses continue to support increased transmissibility and reduced vaccine effectiveness against symptomatic infection. The interplay between the current findings of increased risk of hospitalisation and preserved vaccine effectiveness against hospitalisation requires careful consideration. The clinical course of disease and severity of hospitalised illness also requires further detailed assessment. It is too early to assess the case fatality ratio compared to other variants. The priority investigations are more detailed analysis of hospitalised cases, characterisation of the generation time, viral load and period of infectivity, and epidemiological studies of reinfections.