

Variants of Concern Cases and Processes in Ireland, including an update on Global Epidemiology

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Section 1: International epidemiology of Variant of Concern

1.1 South African Variant (B.1.351)

Table 1 presents the international detected cases of the B.1.351 South African variant to 10/03/2021:

Country	Total cases reported in media or via IHR/EWRS (results from 08/03/2021 in brackets, if changed)	Confirmed sequences in GISAID (results from 04/03/2021 in brackets, if changed)	Cases imported or evidence of local community transmission
Australia	19	25 (21)	Imported cases
Austria	496 (430)	162 (119)	Community transmission
Bangladesh	1	1	Unknown
Belgium	104	266 (213)	Unknown
Botswana	1	20	Unknown
Brazil	1		Unknown
Brunei	1		Imported cases
Canada	153 (116)	5 (2)	Community transmission
China	1		Imported cases
Costa Rica	1	1	
Croatia		1	
Cuba	1		Imported cases
Czech Republic	4		Imported cases
Democratic Republic of the Congo		1	
Denmark	20	12 (10)	Unknown
Estonia	8		
Finland	71	5	Unknown
France	341	164 (144)	Unknown
Gambia	1	0	Unknown
Germany	331	38 (10)	Unknown
Ghana	1		Unknown

Greece	15		Unknown
Guinea Bissau	26		
Hong Kong		0 (1)	
Ireland	15	18 (13)	Unknown
India	7 (6)		
Israel	444	16	Unknown
Italy	37	9 (5)	Imported cases
Japan	14	8 (6)	Unknown
Kenya	6	5	Unknown
La Reunion	96		
Luxembourg	27	2	Unknown
Malawi	1		Unknown
Malta	1		
Mauritius	3	2 (0)	Imported cases
Mayotte	78	338 (296)	Unknown
Mozambique	19	56 (40)	Unknown
Netherlands	69 (52)	98 (87)	Unknown
New Zealand	10	19	Local transmission
Nigeria	30		Unknown
Norway	136	47 (22)	Imported cases
Panama	1	1	Imported cases
Portugal	6	10 (3)	Unknown
Occupied Palestinian Territories	57		Unknown
Poland	1	2 (0)	Unknown
Philippines	61		Unknown
Romania	2		Unknown
Qatar	2		Unknown
Slovenia	2	2	
Slovakia	7 (0)		Unknown
Zimbabwe		202 (0)	Unknown
Singapore		3	
South Korea	18	4	Unknown
Spain	54	4 (3)	Unknown
Sweden	78	26 (5)	Imported cases

Switzerland	176 (170)	74 (64)	Unknown
Taiwan	1		Imported cases
Thailand	3	3	
Turkey	49	38 (26)	Unknown
UAE		5	
USA	91 (81)	47 (28)	Community transmission
Vietnam	1		Imported cases
Zambia	22	31	Unknown
Rwanda		1	
Total	3222 (3078)	1772 (1239)	

Table 1: International cases B.1.351 variant (Data source - UK Variant and Mutation Taskforce slides 15/03/2021 (and 09/03/21))

There have been 318 confirmed or probable cases of B.1.351 in the UK (to 10/03/2021)

1.2 Brazilian P1 Variant

Table 2 presents the international detected cases of the Brazilian P1 variant of concern to 10/03/2021:

Country	Total cases reported in media or via IHR/EWRS (results from 08/03/2021 in brackets, if changed)	Confirmed sequences in GISAID (results from 04/03/2021 in brackets, if changed)	Cases imported or evidence of local/community transmission
Australia		1 (0)	
Argentina	2		Community transmission
Belgium	5 plus 4*	29 (13)	Unknown
Canada	30 (12)	1 (0)	Unknown
Colombia	14 (12)	17 (13)	Unknown
Denmark	2		Unknown
Venezuela	10*		Unknown
Faroe Islands	1	1	Imported case
Finland	1		Unknown
France	3*	9	
French Guiana		3	
Germany	3		Imported cases
India	2*		

Ireland	3	6 (2)	Imported cases
Italy	62	102 (31)	Unknown
Japan	8	8	Imported cases
Luxembourg	1		
Mexico	5*	1	
Netherlands	6	4	Unknown
Portugal	10	11 (10)	Unknown
Peru	1	24 (1)	Unknown
Romania	2 (0)	2 (0)	Unknown
Aruba	1* (0)		
South Korea	6	1	Unknown
Spain	2	1	Imported case
Sweden	6		Unknown
Sint Maarten		1 (0)	
Switzerland	7	16 (13)	
Taiwan	3		Imported cases
Turkey	1*	1	Unknown
USA	15	18 (5)	Community transmission
Total	216* (196*)	257 (122)	

Table 2: International cases Brazilian P1 variant of concern (Data source - UK Variant and Mutation Taskforce slides 15/03/2021 (and 09/03/21))

***Reported cases could be P1 or P2 variant**

There have been 10 reports of the Brazilian P1 variant of concern in the UK (to 10/03/2021).

Section 2: B.1.525 Variant Under Investigation (VUI)

This lineage has the E484K, Q677H and F888L mutations and a similar suite of deletions to B.1.1.7. and other VOCs (69/70, 144, and the nsp6 del) but not 501Y or other VOC changes. The E484K mutation results in weaker neutralisation by antibodies and reduced drug susceptibility.

Cases reported to 15th March 2021 (results from 10/03/2021 in brackets, if changed):

Country	Confirmed sequences in GISAID
Denmark	121
United Kingdom	114 (73)
Nigeria	92 (51)
USA	67 (41)
Germany	39 (26)
Italy	20 (14)
Netherlands	12 (11)
Belgium	7
Canada	10 (7)
Japan	11 (7)
France	7
Slovenia	15 (7)
Ghana	5
Ireland	8 (4)
Australia	4 (3)
Spain	7 (3)
Austria	3 (0)
Turkey	1 (0)
Jordan	2
Switzerland	2
Norway	4 (2)
Finland	2
Austria	2
Malaysia	2
Mayotte	1
Egypt	1
Thailand	1
Costa Rica	1 (0)
South Korea	1 (0)
Singapore	1
Cameroon	1 (0)
Total	564 (403)

Table 3. Cases of B.1.525 reported internationally
(Data source - <https://www.gisaid.org/hcov19-variants> 15/03/2021)

Section 3: Variant of Concern Covid-19 cases in Ireland

(Based on NVRL and Eurofins-Biomnis results up to 15th March 2021)

Confirmed cases of Brazilian P1 (new in the last week):	7 (3)
Probable P1 cases (new in the last week):	2 (2)
Confirmed B.1.351 cases (new in the last week):	24 (8)
Probable B.1.351 cases (new in the last week):	6 (0)
“Probable VOC” (either B.1.351 or P1) from Eurofins-Biomnis (new):	10 (6)
Other variants of note (new in the last week):	
Confirmed B.1.525 cases:	11 (10)
Confirmed B.1.526 cases:	5 (1)
Confirmed P.2 cases:	12 (5)

Travel links to cases:

Confirmed cases of Brazilian P1:

Case is traveller:	Brazil = 5
Case is contact of traveller:	Brazil = 1
No travel link:	1

Probable P1 cases:

Case is traveller:	Brazil = 2
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Confirmed B.1.351 cases:

Case is traveller:	South Africa = 6; Zambia = 1; Zanzibar = 2
Case is contact of traveller:	South Africa = 3; Zambia = 1
No travel link:	11

Probable B.1.351 cases:

Case is traveller:	South Africa = 5
No travel link:	1

“Probable VOC” (either B.1.351 or P1) from Eurofins-Biomnis (new):

Case is traveller:	India = 1; Brazil = 3
Case is contact of traveller:	Brazil = 1
No travel link:	3
Unknown:	2

Main points:

- One confirmed case of the P.1 variant of concern, and twelve confirmed or probable cases of the B.1.351 variant of concern in Ireland have no epidemiological link to recent international travel
- An enhanced investigation is underway in one region, following the notification of two as yet unconnected cases of the P.1 variant
- One confirmed case of B.1.351 works as a Healthcare worker at residential health facility. The case has no travel history or known contact with anyone who has travelled. This case was part of the large outbreak, affecting 26 people, at a facility which provides residential services. Some secondary cases were identified initially, but none further on subsequent rounds of testing. An OCT has been convened and all samples on the cases will be sequenced at NVRL and further epidemiological investigations undertaken.
- Six confirmed cases of B.1.351 are associated with an outbreak crosses two public health regions. Epidemiological investigations are ongoing.
- Over the past six weeks, four confirmed and one probable case of the B.1.351 VOC, and 2 “probable VOCs”, spanning 3 families, have been identified in one particular geographical region. A significant epidemiological investigation, crossing two regional Departments of Public Health is ongoing.
- Four cases of B.1.525 are members of the same family. The index has a travel history; however the country of travel is not recorded on CIDR.
- There are four cases of B.1.525; three linked to the same household. There is no link to recent travel. These cases are under further investigation.

Section 4: HSE Testing and Tracing for Variants of Concern

Table 4 presents the number of potential cases of VOC among those with a travel history from countries of concern within 14 days of the onset of COVID-19, or close contact with a person with a history of travel from countries of concern within one month of the onset of COVID-19 in the case. Also presented are the number of VOCs confirmed by WGS among those cases. Of note; half of all cases (110/206) were identified through Healthlink. The remaining half (102/206) relied on identification cases through the CTCs of the Contact Management Programme. Of the Category 2 Country Positive Cases identified, country origins are as per Table 5.

Table 4: Category 2 Country Variant of Concern Testing outcome to 09:00am 15th March 2021

	Category 2 Country
Travel-related Referrals for Testing identified through Healthlink	3057
Travel-related Positive Results (Cases) identified through Healthlink	110
Travel-related Positivity Rate for Cases identified through Healthlink	3.6%
Additional Cases identified through CMP Contact Tracing	102
Total Travel Related Cases	212
VOC (Variant of Concern) Detected by WGS, NVRL	29

Table 5: Country of Origin identified from Travel Related Positive Cases (Category 2 Countries only)

Country	Positive Cases Identified	% of total cases
Brazil	142	65%
UAE	36	16%
South Africa	24	11%
Tanzania	3	1%
Zimbabwe	3	1%
Argentina	3	1%
Democratic Republic of Congo	2	1%
Sudan	2	1%
Peru	1	0.5%
Uruguay	1	0.5%
Austria	1	0.5%
Bolivia	1	0.5%
Total	219	100%

A breakdown of VOC Analysis by WGS is provided in Table 6.

Table 6: WGS Analysis summary of Travel Related Positive Cases (Category 2 Countries only)

VOC	Identified by WGS
Brazil (P.1)	6
South Africa (B.1.351)	23

The below Variants of Interest (VOI) have been detected by WGS also:

- 12 x P.2 (Brazil)
- 11 x B.1.525 (Nigeria)
- 5 x B.1.526 (US – New York)

4.1 Summary of Travel Related Referrals by Week

Figure 1 below presents the travel related referral numbers identified through Healthlink by week to date. This view is a combination of the below referral categories:

- Travel from Brazil (retired 4th March 2021)
- Travel from South Africa (retired 4th March 2021)
- Travel from Category 2 Country (live from 4th March 2021)
- Travel from Category 2 Country (may need assistance) (live from 4th March 2021)

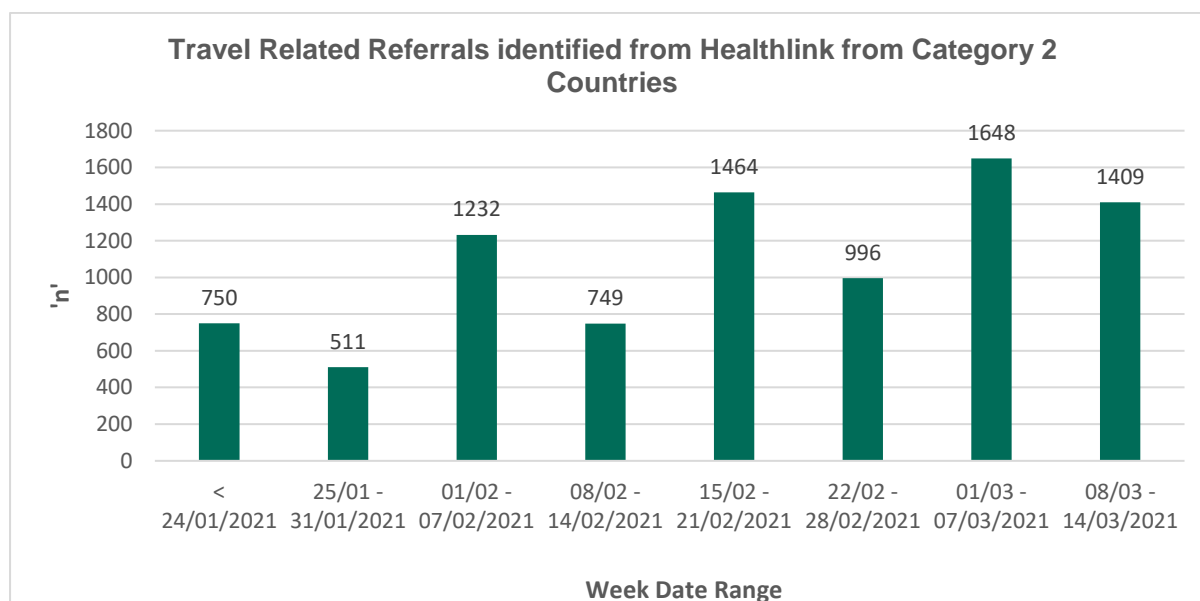


Figure 1: Travel Related Referrals from Category 2 Countries through Healthlink ONLY by week to 09:00am 15th March 2021

4.2 Summary of Positive Cases by Week

Figure 2 presents a combined view of all positive cases from Category 2 Countries by week to date, including the above data on South Africa and Brazil cases. In the last week, from 8th March up to 09:00am 15th March 2021, there have been **26 new Category 2 Country Positive Cases**, comprising of the below in Table 7.

Table 7: Summary of new Travel Related Positive Cases (Category 2 Countries only) from 8th March – 09:00am 15th March 2021

Category 2 Country of Concern	Number of Cases identified 8th March – 09:00am 15 th Mar 2021	%
Brazil	15	58%
UAE	4	15%
Argentina	3	12%
South Africa	2	8%
Zimbabwe	1	4%
Bolivia	1	4%
Total	26	100%

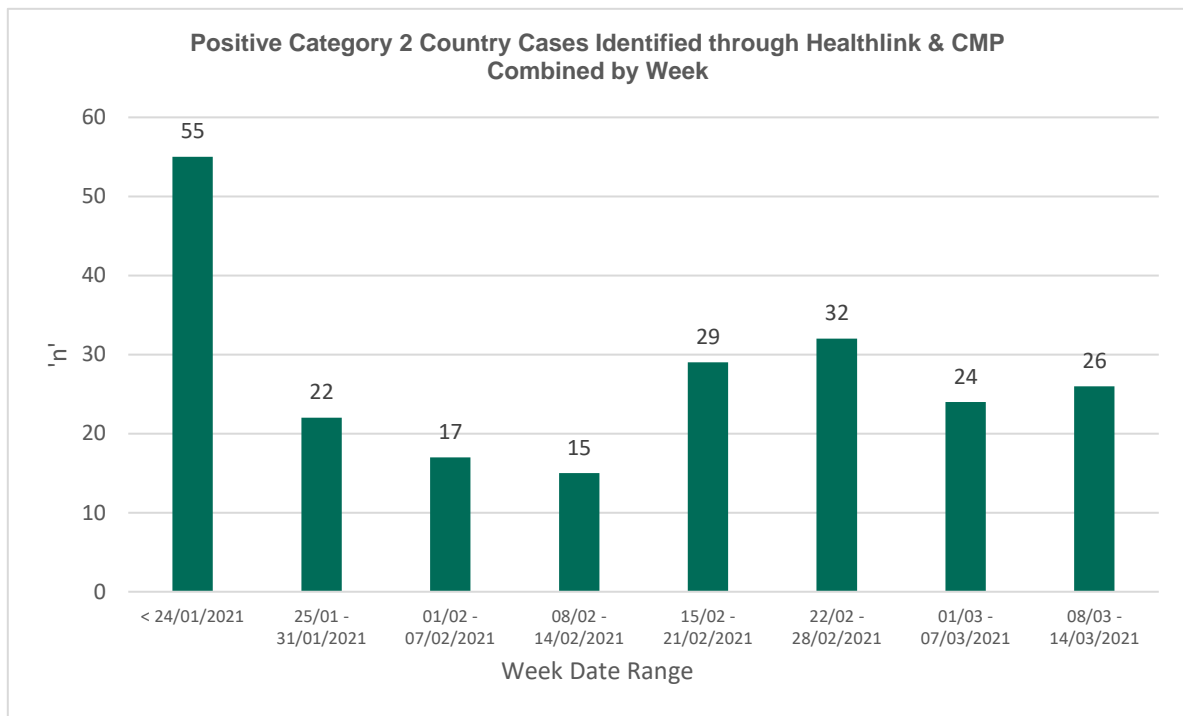


Figure 2: Cases of COVID-19 with History of Travel from Category 2 Countries identified through Healthlink and CMP combined, by Week

4.3 Contact Tracing

The Contact Tracing Team in UCD undertakes enhanced contact tracing of relevant travel-related cases and their close contacts. In addition, an exposure investigation is entered for any eligible flights relating to countries of concern .

4.3.1 Contact Tracing of Cases and Close Contacts

All cases of Covid-19 are entered into the Routine Queue (RQ) of the CCT system. Cases with a history of travel or contact with someone with a history of travel, over the requisite time period, from any Category 2 countries of concern are routed to the SQ for enhanced Contact Tracing and PCR assay / WGS of samples. Flight contact tracing is then undertaken and has been completed successfully for all passengers who could be contacted. Those contactable ranges from 59% to 98%,

although the latter 98% success rate relating to intensive efforts at contacting passengers of a flight where a VOC was confirmed. Reasons for being uncontactable include: no number given; wrong number; international number provided not answered; or occasionally number provided for booking agent. For those who could be contacted tests were scheduled, self-isolation advice provided and household contact advice provided.

4.3.2 Issues arising from Exposure Investigation of Eligible Flights

Of note are the lengthy time intervals from flight arrival date to enhanced contact tracing.

- Time interval from date of flight to date of contact tracing (past 4 weeks):
 - Week 25.01 (11 days)
 - Week 01.02 (8 days)
 - Week 08.02 (9 days) & (10 days)
 - Week 15.02 (9 days) & (9 days)
 - Week 22.02 (8 days)
 - Week 01.03 (8 days), (5 days) & (9 days)
 - Week 08.03 (9 days) & (7 days)
- These are a combination of:
 - The interval to case identification – only approximately 25% of inbound passengers avail of a Day 5 post-arrival test. Other reasons that passengers seek out testing include
 - Development of COVID-19 symptoms
 - Passengers are notified that they are a close contact of a case through contact tracing of other cases or from enhanced contact tracing of flights where cases who were infectious have been identified
 - The interval for result reporting, creation of the case in the CCT, contact tracing and creation of an Exposure Investigation for the flight;
 - The request by PH Data Processing Team to the airline for flight manifest;
 - Time taken for an airline to provide the flight manifest; and
 - Cross-checking of flight manifest with e-PLFs.
- Poor or incomplete information provided by passengers on the ePLF. This included:
 - Variations in names provided
 - Incorrect contact numbers
 - Contact numbers not in use
 - International telephone numbers not answered due to charges or other reasons
 - Incomplete addresses/no address provided
 - For consideration, making address and telephone number fields on e-PLF mandatory fields, and requiring verification of same before successfully completing the form
 - Mixed adherence to HSE requests for passengers to attend for initial Day 10 testing and subsequent follow-up screening tests (16/02/2021 to present).

Contacts who remain uncontactable following multiple call attempts are forwarded to Public Health Data Processing (PH DP). These contacts are emailed (if email addresses are available) in order to ascertain updated contact information, and any new contact information is subsequently provided to UCD CTC for further call attempts. Consideration is also given to arranging testing for those with valid phone numbers who have not been reached supported by Public Health.