

## **Title: Variants of Concern Cases and Processes in Ireland, including an update on Global Epidemiology**

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Action required:

- For noting
- For discussion
- For decision

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### Main points:

- Four family clusters of “confirmed” and/or “probable” cases of the B.1.351 (South African) variant of concern present Midlands area (covering two regional Departments of Public Health), as well as one cluster in the East, with no link to international travel.
- An additional P1 (Brazilian) variant detected in a close contact of a positive COVID-19 case, who was on the same flight as the initial 3 P1 cases. No onward transmission reported.
- Non-travel related variants of concern will have wider public health investigations undertaken, as appropriate and feasible. In the continued absence of non-mandatory quarantine and testing, we can expect more cases with no clear epidemiological links to travel and ultimately some community spread.

**Updates:**

- First cases of P.1 VOC reported in the UK (5 in England; 3 in Scotland)
- B1351 accounting for 20-50% of all cases in Muselle region of France, bordering Germany
- Increasing numbers of lineages with E484K mutation reported
- Increasing numbers of B.1.525 variant in European countries

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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 08/03/2021 (results from 04/03/2021 in brackets, if changed):

Country	Total cases reported in media or via IHR/EWRS (to 08/03/2021)	Confirmed sequences in GISAID (to 04/03/2021)	Cases imported or evidence of local community transmission
Australia	19 (18)	21	Imported cases
Austria	430	119	Community transmission
Bangladesh	1	1	Unknown
Belgium	104	213	Unknown
Botswana	1	20	Unknown
Brazil	1		Unknown
Brunei	1		Imported cases
Canada	116 (65)	2	Community transmission
China	1		Imported cases
Costa Rica	1	1	
Croatia		1	
Cuba	1		Imported cases
Czech Republic	4 (1)		Imported cases
Democratic Republic of the Congo		1	
Denmark	20 (13)	10	Unknown
Estonia	8 (1)		
Finland	71 (64)	5	Unknown
France	341	144	Unknown
Gambia	1	0	Unknown
Germany	331 (83)	10	Unknown
Ghana	1		Unknown
Greece	15		Unknown

Guinea Bissau	26		
Hong Kong		1	
Ireland	15	13	Unknown
India	6		
Israel	444	16	Unknown
Italy	37 (3)	5	Imported cases
Japan	14 (11)	6	Unknown
Kenya	6	5	Unknown
La Reunion	96		
Luxembourg	27	2	Unknown
Malawi	1		Unknown
Malta	1		
Mauritius	3		Imported cases
Mayotte	78	296	Unknown
Mozambique	19	40	Unknown
Netherlands	52* (65)	87	Unknown
New Zealand	10	19	Local transmission
Nigeria	30		Unknown
Norway	136 (103)	22	Imported cases
Panama	1	1	Imported cases
Portugal	6	3	Unknown
Occupied Palestinian Territories	57		Unknown
Poland	1 (0)		Unknown
Philippines	61 (0)		Unknown
Romania	2 (0)		Unknown
Qatar	2		Unknown
Slovenia	2 (1)	2	
Singapore		3	
South Korea	18 (17)	4	Unknown
Spain	54	3	Unknown
Sweden	78 (45)	5	Imported cases
Switzerland	170 (144)	64	Unknown
Taiwan	1		Imported cases
Thailand	3	3	

Turkey	49 (2)	26	Unknown
UAE		5	
USA	81 (65)	28	Community transmission
Vietnam	1		Imported cases
Zambia	22	31	Unknown
Rwanda		1	
<b>Total</b>	<b>3078 (2508)</b>	<b>1239</b>	

Table 1: International cases B.1.351 variant (Data source - UK Variant and Mutation Taskforce slides 09/03/2021 (and 08/02/21))

\*Revised downwards due to correction for duplication

There have been 310 confirmed or probable cases of B.1.351 in the UK (to 08/03/2021)

## 1.2 Brazilian P1 Variant

Table 2 presents the international detected cases of the Brazilian P1 variant of concern to 08/03/2021 (results from 04/03/2021 in brackets, if changed):

Country	Total cases reported in media or via IHR/EWRS (to 08/03/2021)	Confirmed sequences in GISAID (to 04/03/2021)	Cases imported or evidence of local/community transmission
Argentina	2		Community transmission
Belgium	5 plus 4*	13	
Canada	12 (2) plus 1*		Unknown
Colombia	12 (2) plus 2*	13	Unknown
Denmark	2 (0)		Unknown
Venezuela	10* (0)		Unknown
Faroe Islands	1	1	Imported case
Finland	1		Unknown
France	3*	9	
French Guiana		3	
Germany	3		Imported cases
India	2 (1)		
Ireland	3	2	Imported cases
Italy	62 (34)	31	Unknown
Japan	8 (4)	8	Imported cases
Luxembourg	1		
Mexico	5*	1	

Netherlands	6	4	Unknown
Portugal	10 (7)	10	Unknown
Peru	1	1	Unknown
South Korea	6 (5)	1	Unknown
Spain	2 (1)	1	Imported case
Sweden	6 (4)		Unknown
Switzerland	7	13	
Taiwan	3		Imported cases
Turkey	1*	1	Unknown
USA	15 (10)	5	Community transmission
<b>Total</b>	<b>196* (98)</b>	<b>122</b>	

Table 2: International cases Brazilian P1 variant of concern (Data source - UK Variant and Mutation Taskforce slides 08/03/2021 (and 25/02/21))

\*Reported cases could be P1 or P2 variant

There have been 8 reports of the Brazilian P1 variant of concern in the UK (to 08/03/2021).

## Section 2: Variant of Concern Covid-19 cases in Ireland

(Based on NVRL and Eurofins-Biomnis results up to 10<sup>th</sup> March 2021)

<b>Confirmed cases of Brazilian P1 (new in the last week):</b>	<b>6 (3)</b>
<b>Probable P1 cases (new in the last week):</b>	<b>2 (2)</b>
<b>Confirmed B.1.351 cases (new in the last week):</b>	<b>19 (4)</b>
<b>Probable B.1.351 cases (new in the last week):</b>	<b>6 (0)</b>
<b>“Probable VOC” (either B.1.351 or P1) from Eurofins-Biomnis (new):</b>	<b>9 (1)</b>

### Other variants of note

<b>Confirmed B.1.525 cases:</b>	<b>7</b>
<b>Confirmed B.1.526 cases:</b>	<b>5</b>
<b>Confirmed P.2 cases:</b>	<b>11</b>

### Section 3: B.1.525 Variant Under Investigation (VUI)

This strain of SARS-CoV-2 was first detected on 15<sup>th</sup> December, 2020, initially being reported in Nigeria, Ghana, the UK and France. It was designated a VUI in the UK on 12<sup>th</sup> February, 2021.

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 8<sup>th</sup> March 2021 (results from 01/03/2021 in brackets, if changed):

Country	Confirmed sequences in GISAID
Denmark	121 (75)
United Kingdom	73 (62)
Nigeria	51 (50)
USA	41 (32)
Germany	26 (1)
Italy	14 (10)
Netherlands	11 (4)
Belgium	7 (5)
Canada	7
Japan	7 (4)
France	7 (6)
Slovenia	7 (0)
Ghana	5
Ireland	4 (0)
Australia	3
Spain	3 (2)
Jordan	2
Switzerland	2 (1)
Norway	2 (0)
Finland	2
Austria	2 (0)
Malaysia	2 (0)
Mayotte	1
Egypt	1 (0)
Thailand	1 (0)
Singapore	1
<b>Total</b>	<b>403 (197)</b>

Table 3. Cases of B.1.525 reported internationally  
(Data source - <https://www.gisaid.org/hcov19-variants> 08/03/2021)



## Section 4: CTC / CMP update / Travel-related Cases / Close Contacts

### 4.1. Overview

This report provides results of the identification process that commenced on 15<sup>th</sup> January 2021 up to 9.00am on 8<sup>th</sup> March 2021.

Potential cases of the Variants of Concern (VOC's) are identified are through a combination of referrals through Healthlink and notification of cases from the Routine Queue of the CCT System to the Specialised Queue managed by UCD CTC on behalf of Public Health. These processes are outlined in detail below

### 4.2. Identification of Cases

1) **Referral of individuals for COVID-19 testing through the HSE GP Healthlink.** Originally, two options selected at the point of referral were added to the options listed for testing in Healthlink. These were: 'Travel from Brazil', and 'Travel from South Africa'. Anyone referred for testing for whom these fields were chosen, and who tested positive, can be identified by the Integrated Information System (IIS). These cases are extracted on a daily basis for onward referral to the National Virus Reference Laboratory (NVRL) for WGS.

As of Thursday 4<sup>th</sup> of March 2021, 'Travel from Brazil' and 'Travel from South Africa' referral categories were retired and replaced with the below in order to include any additional countries of concern as identified on the 12<sup>th</sup> February 2021 and those which may become concern in the future:

- Travel from Category 1 Country
- Travel from Category 1 Country (may need assistance)
- Travel from Category 2 Country
- Travel from Category 2 Country (may need assistance)

Only Category 2 Country data will be reported in this report. The current list of Category 2 Countries is detailed by the Department of Health on [gov.ie](http://gov.ie).

2) **ALL Cases of COVID-19 in persons who have travelled from any Category 2 countries of concern are identified through the Contact Management Programme's contact tracing process.** The Contact Tracing Centre (CTC) at UCD collates this information from all CTCs through a Work Instruction (WI) originally issued on 15<sup>th</sup> January 2021. This work instruction was updated on 17<sup>th</sup> February 2021 and again on 3<sup>rd</sup> March 2021 to include the updated countries of concern (n=33). Of particular note is that these cases include those identified through 1) above, as well as cases identified by CTCs through other routes.

### 4.3 Consolidation and Distribution of Information

The HSE IIS Team circulates a data extract from Healthlink of cases of COVID-19 linked to the Category 2 Country testing category only. This is sent on a daily basis to Public Health leads, UCD CTC, NVRL, Laboratory Operations Team and HSE Test and Trace project management representatives and CMP leadership. Additional cases identified by the UCD CTC are added to the list and re-circulated to the above group. This allows for cases identified by both the Healthlink referral categories and Contact Tracing Centres to be consolidated. Data are provided in Table 4.

Samples are sourced by the Laboratory Teams and delivered to NVRL laboratory for WGS to test for the Variants of Concern (VOC). All samples for which WGS is warranted are either currently at the NVRL or routed to the NVRL for this analysis.

### 4.3.1 Summary of Outcomes

Table 4 presents the number of potential cases of VOC among those who had a history of travel 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 1 month of the onset of COVID-19 in the case. Also presented are the number of VOCs confirmed by Whole Genome Sequencing (WGS) among those cases.

**Table 4: Category 2 Country Variant of Concern Testing outcome to 09:00am 8<sup>th</sup> March 2021**

	Category 2 Country
Travel-related Referrals for Testing identified through Healthlink	2739
Travel-related Positive Results (Cases) identified through Healthlink	102
Travel-related Positivity Rate for Cases identified through Healthlink	3.7%
Additional Cases identified through CMP Contact Tracing	92
<b>Total Travel Related Cases</b>	<b>194</b>
<b>VOC (Variant of Concern) Detected by WGS, NVRL</b>	<b>18</b>

Of note is that half of all cases (102/194) were identified through Healthlink. The remaining half (92/194) 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 5: Country of Origin identified from Travel Related Positive Cases (Category 2 Countries only)**

Country	Positive Cases Identified	% of total cases
Brazil	127	65%
UAE	33	17%
South Africa	22	11%
Tanzania	3	1.5%
Democratic Republic of Congo	2	1%
Sudan	2	1%
Zimbabwe	2	1%
Peru	1	0.5%
Uruguay	1	0.5%
Austria	1	0.5%
<b>Total</b>	<b>194</b>	<b>100%</b>

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)**

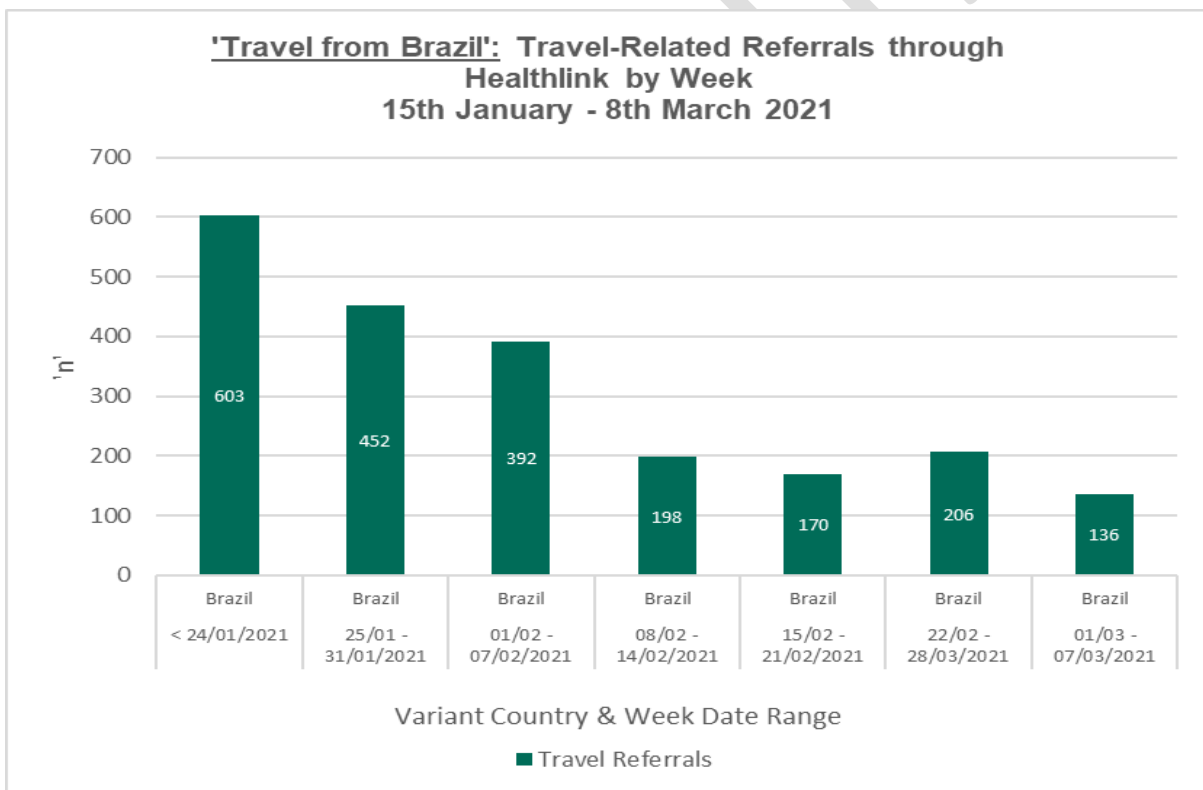
VOC	Identified by WGS
Brazil (P.1)	3
South Africa (B.1.351)	15

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

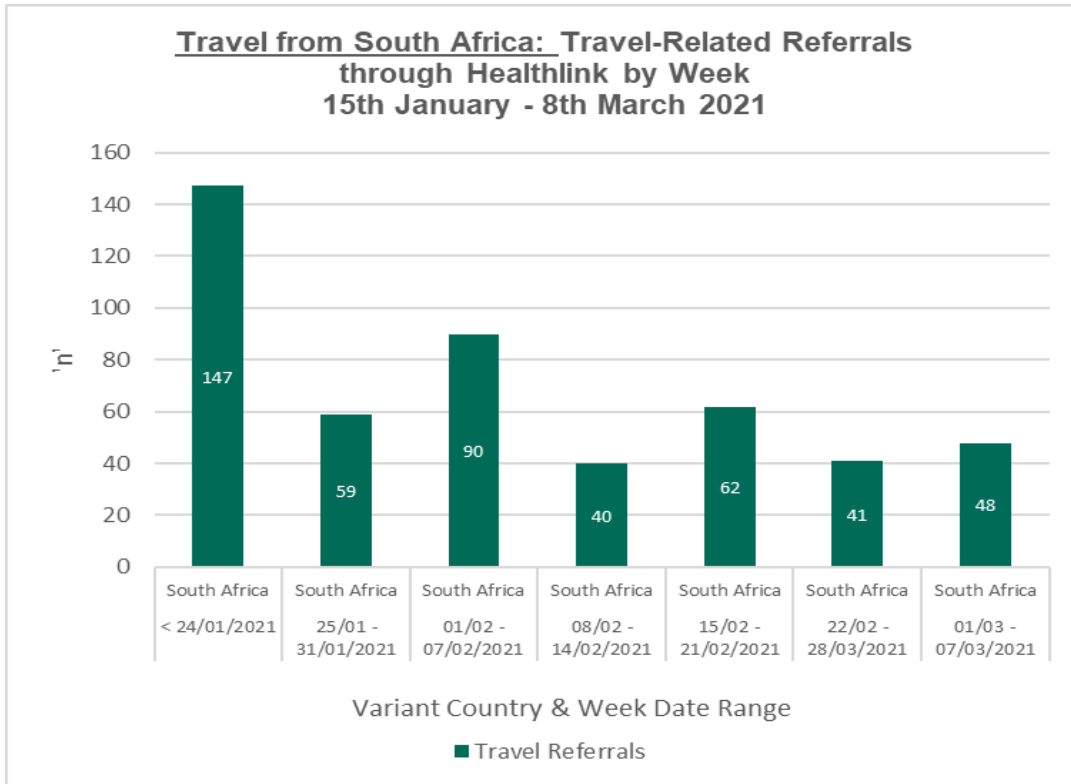
- 6 x P.2 (Brazil)
- 3 x B.1.525 (Nigeria)

**4.3.2 Summary of Travel Related Referrals by Week**

Figure 1 and 2 below presents the numbers of Brazil and South Africa travel-related referrals through Healthlink only by week to date.



**Figure 1: Brazil Travel Related Referrals through Healthlink ONLY by week to 09:00am 8<sup>th</sup> March 2021**

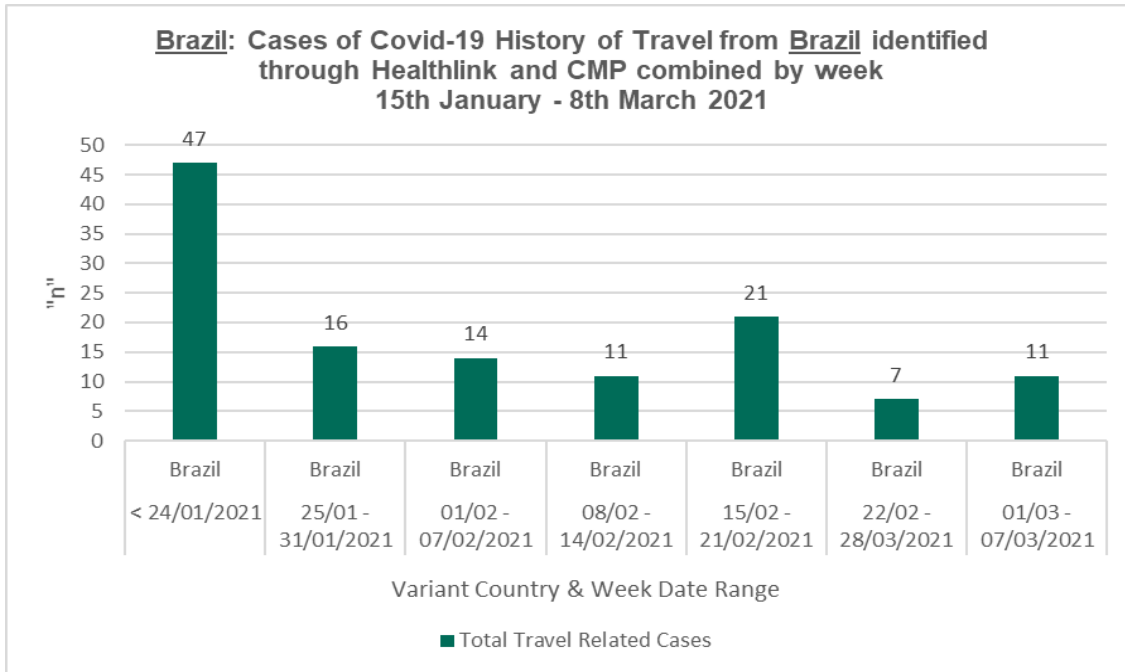


**Figure 2: South Africa Travel Related Referrals through Healthlink only by week to 09:00am 8<sup>th</sup> March 2021**

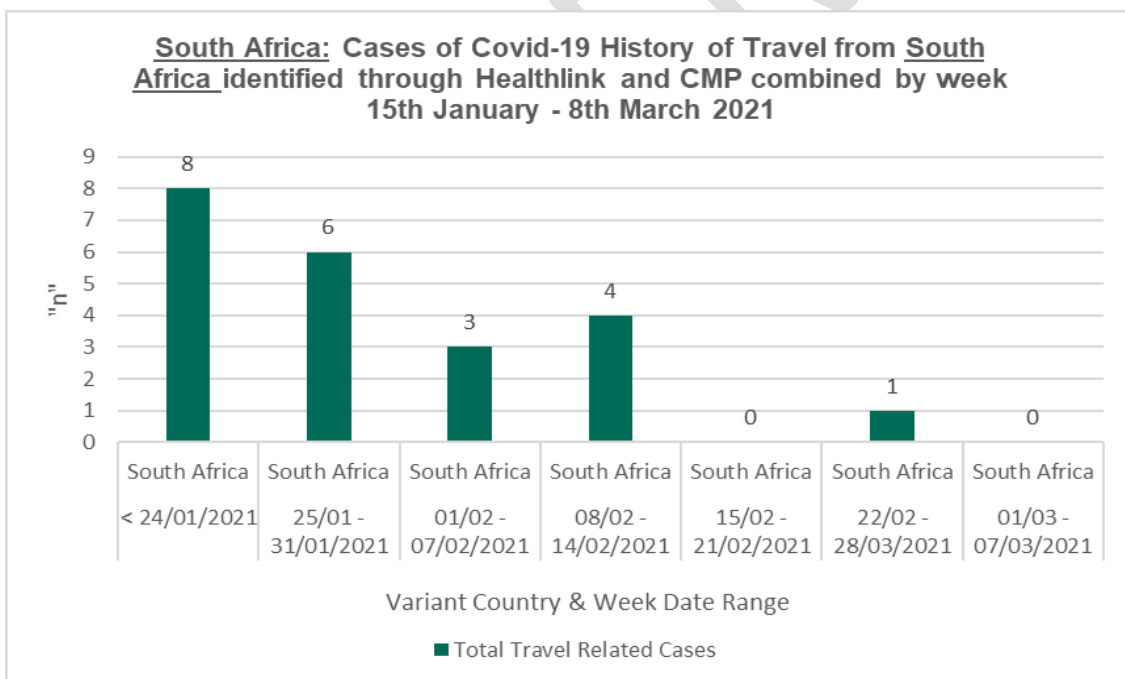
The number of referrals through Healthlink with a history of travel from Brazil only has decreased steadily over the period, with a slight increase in the last week 23/02/2021 – 01/03/2021. There is some variation in referrals with a history of travel from South Africa, though overall trend is downward.

#### **4.3.3 Summary of Positive Cases by Week**

Figure 3 and 4 presents the number cases with a history of travel from Brazil and South Africa identified through Healthlink and CMP combined by week to date.



**Figure 3: Cases of COVID-19 with History of Travel from Brazil only identified through Healthlink and CMP combined, by Week**

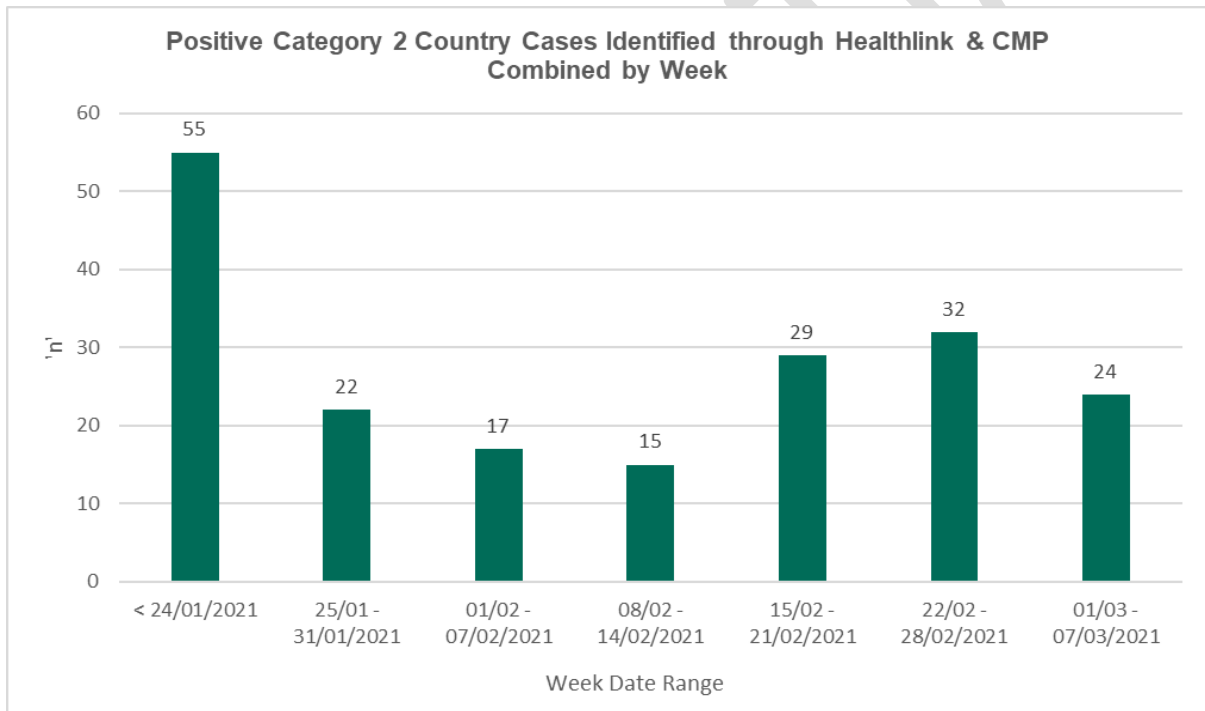


**Figure 4: Cases of COVID-19 with History of Travel from South Africa only identified through Healthlink and CMP combined, by Week**

Figure 5 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 1<sup>st</sup> March up to 09:00am 8<sup>th</sup> March 2021, there have been **24 new Category 2 Country Positive Cases**, comprising of the below in Table 6.

**Table 6: Summary of new Travel Related Positive Cases (Category 2 Countries only) from 1<sup>st</sup> March – 09:00am 8<sup>th</sup> March 2021**

Category 2 Country of Concern	Number of Cases identified 1 <sup>st</sup> March – 09:00am 8 <sup>th</sup> Mar 2021
Brazil	11
UAE	10
Austria	1
Peru	1
Uruguay	1
<b>Total</b>	<b>24</b>



**Figure 5: Cases of COVID-19 with History of Travel from Category 2 Countries identified through Healthlink and CMP combined, by Week**

#### 4.4 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. An update on these activities is provided below:

##### 4.4.1 Contact Tracing of Cases and Close Contacts

All cases of COVID-19 are entered into the Routine Queue (RQ) of CovidCare Tracker (CCT) system. Cases with a history of travel from any Category 2 countries of concern within 14 days prior to

testing positive for COVID-19 (or 14 days prior to symptom onset, if symptomatic); or cases who have been in close contact with a person with a history of travel from Category 2 countries of concern within 1 month of the onset of COVID-19 in the case, are routed to the SQ for enhanced Contact Tracing. The cases are subsequently routed to NVRL for WGS by UCD. Callers in all CTCs are appraised of, and reminded, to follow the WIs on establishing a travel history in all cases and the appropriate routing of cases to the SQ. Callers are also reminded NOT to carry out Contact Tracing on these cases before routing to SQ.

Enhanced Contact Tracing is undertaken by a specialised team of callers at UCD CTC. This has been completed for all cases to date with a travel history of concern.

#### **Of cases for whom Contact Tracing complete:**

- Detailed travel history has been established in so far as possible (dates, route, flight numbers, seat numbers). Further details may be required for some cases if identified as having a VOC.
- Close contacts of cases have been identified and scheduled for testing, self-isolation advice has been provided, and contacts have been advised to advise their household members to restrict their movements for 14 days.
- Exposure Investigations have been created for flights undertaken during infectious period
- Passenger details from flight manifests are sourced by the Data Processing Team (DPT).

Contact tracing has been completed for all passengers who could be contacted. The range of those who were successfully contacted is from 59% to 98% (with one instance of 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.

#### **4.4.2 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)
- 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 & 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.

#### 4.5 Variant Detection & Public Health Response

All detected positive samples identified by GP Healthlink referrals and UCD Contact Tracing Centre are routed to NVRL for pcr assays and subsequent whole genome sequencing to detect the Variant of Concern.

All probable or confirmed results are communicated to Public Health who contact the individual in question.

- If the VoC is present (probable or confirmed) in the sample, Public Health will communicate with the individual and initiate a Stand Up Process which will involve increasing the individual's isolation restrictions, if this has not already been undertaken through UCD CTC subsequent to travel, or close contact to someone travelling from a category 2 country..
- If the VoC is not present in the sample (through PCR assay or sequencing), Public Health or UCD CTC / CMP lead will communicate with the individual and initiate a Stand Down Process which will involve decreasing the individual's isolation restrictions.
- Non-travel related variants of concern will have wider public health investigations undertaken, as appropriate and feasible. In the continued absence of non-mandatory quarantine and testing, we can expect more cases with no clear epidemiological links to travel and ultimately some community spread.