CIVIL CONTINGENCIES AUTHORITY – Briefing Paper **10 May 2021**

Prevalence Levels and Border Controls

Summary

On 14th May the Bailiwick of Guernsey will be moving to full country / regional classification (categories 4, 3 and 2). Ahead of this, there have been some questions with regards to the methodology used to calculate prevalence rates and whether the outcomes (in terms of which countries and regions will be classified within each grouping), is proportionate in light of Guernsey's exit from lockdown strategy compared with the status and approach in the UK, Europe and other Crown Dependencies. It should be noted that the review of proportionately of the Bailiwick methodology should be assessed specifically on the Guernsey prevailing circumstances. Of particular importance is the fact that the Bailiwick, unlike both the UK and Jersey, does not have any internal non-pharmaceutical interventions, for example restriction on gathering sizes, indoor meetings and the need to wear face coverings. This makes our population more vulnerable to uncontrolled spread of the virus, if an introduction were to occur in our community.

The attached paper outlines, in detail, the methodology used to calculate the country / regional prevalence and also provides a detailed analysis of the risk associated with differing prevalence levels, aligned to testing and self-isolation.

Methodology

The current country / regional classification is illustrated in Table 1. In light of UK prevalence levels plateauing in the UK and not falling as quickly was originally expected it is timely for the Authority to revisit the levels of prevalence to ensure, on the grounds of proportionately, it still believes the current levels are correct and appropriate for the current phase of exit from lockdown and that the level of restrictions that will continue are necessary to protect the core objectives of the strategy which are:

- To avoid another lockdown;
- To protect against loss of life and to avoid breeching hospital capacity;
- To protect the Islands of Alderney and Sark with their limited infrastructure;
- To further stimulate economic activity and growth as soon as reasonable and safe to do so
- To relax measures to support mental health and wellbeing as soon as reasonable and safe to do so.

Table 1: Country and regional classification based on viral prevalence linking to testing and self-isolation requirements

	Category 1 (Air-bridge)	Category 2	Category 3	Category 4
Prevalence level of regions recently visited by a traveller entering Guernsey	Equivalent to the Bailiwick of Guernsey and no community seeding	Fewer than 30 cases per 100,000 in the last 14 days, for 7 consecutive days	Between 30 to 100 cases per 100,000 in the last 14 days, for 7 consecutive days	Greater than 100 cases per 100,000 in the last 14 days, for 7 consecutive days
Testing	None required	Test on arrival (Day 1) and test on Day 7	Test on arrival (Day 1) and test on Day 7	Test on arrival (Day 1) and test on Day 13
Self-isolation	None required	Self-isolation until the receipt of a negative result then passive follow-up until day 14	Self-isolation until the receipt of a negative result on Day 7 then passive follow-up until day 14	Self-isolation until result of day 13 test or 21 days for those declining testing

The 14-day rate by which countries/regions are classified is calculated by taking the total number of new cases in a country or region over the last 14 days, dividing by the population of the area involved, and multiplying by 100,000. To demonstrate this, below are the 14-day case counts and rates for the regions of England. This data is correct as of 10am on 10/05/2021.

This data is accessed directly from Public Health England using their publicly available ukcovid19 R library. See https://coronavirus.data.gov.uk/details/developers-guide and https://github.com/publichealthengland/coronavirus-dashboard-api-python-sdk. This is the same source of data for the UK government COVID Dashboard (https://coronavirus.data.gov.uk/).

The table shows that only South West England is currently below a 14-day limit for Category 2 of 30 per 100,000, as set by the CCA, meaning it qualifies for Category 2 status. South East England is the next lowest region but will need to decline below 30 for 7 consecutive days before being moved to Category 2, whilst it can be seen that the rates are rising in the North West of England. After 7 consecutive days of having a prevalence of less than 30 per 100,000, the area is classified as a Category 2 area. This avoids an area being reclassified multiple times and provides stability to the assessment. Jersey appear to do a weekly review only (as opposed to our three times a week review.

Specifically here, we want to highlight the need to tackle misinformation on social media. This includes allegations of incorrect reporting. For the avoidance of doubt, Public Health Services uses data from Public Health England but uses a 14-day, as opposed to a 7-day, rate. This explains the difference in figures when the two websites are compared.

Guernsey is not alone in using 14-day data. The same method is also used by Jersey and the European Centre of Disease Control. The 14-day 'prevalence rate' is a tool for measuring recent

incident cases of COVID-19 in a given area. Whether or not a country or region falls into one or another category, for the purpose of determining the isolation period on entry to the Bailiwick, depends on the thresholds set by the CCA for each category.

TABLE 2: New cases per day

Date	North East	North West	Yorkshire and The Humber	East Midlands	West Midlands	East of England	London	South East	South West
17/04/2021	68	175	237	121	149	122	221	171	72
18/04/2021	101	287	344	224	255	217	384	304	171
19/04/2021	103	297	424	226	238	218	388	303	142
20/04/2021	84	263	419	201	199	185	341	215	111
21/04/2021	112	279	404	205	250	203	356	293	141
22/04/2021	64	257	392	176	184	208	301	269	134
23/04/2021	77	232	313	143	153	168	241	204	106
24/04/2021	62	160	237	115	112	130	227	139	54
25/04/2021	95	290	315	163	182	204	283	239	137
26/04/2021	124	362	428	194	229	225	303	293	141
27/04/2021	103	271	322	172	155	166	279	217	110
28/04/2021	94	326	437	190	214	165	299	272	143
29/04/2021	79	295	390	186	168	186	197	200	112
30/04/2021	71	224	302	113	159	122	223	149	64
01/05/2021	53	193	243	108	93	115	168	134	44
02/05/2021	59	201	216	154	117	134	182	157	71
03/05/2021	75	283	356	203	179	169	243	211	139
04/05/2021	122	382	379	235	209	222	292	218	129
05/05/2021	84	411	397	250	180	184	263	216	123
06/05/2021	85	345	300	261	142	166	265	199	100

TABLE 3: 14 day cumulative incidence

Date	North East	North West	Yorkshire and The Humber	East Midlands	West Midlands	East of England	London	South East	South West
30/04/2021	1237	3718	4964	2429	2647	2519	4043	3268	1638
01/05/2021	1222	3736	4970	2416	2591	2512	3990	3231	1610
02/05/2021	1180	3650	4842	2346	2453	2429	3788	3084	1510
03/05/2021	1152	3636	4774	2323	2394	2380	3643	2992	1507
04/05/2021	1190	3755	4734	2357	2404	2417	3594	2995	1525
05/05/2021	1162	3887	4727	2402	2334	2398	3501	2918	1507
06/05/2021	1183	3975	4635	2487	2292	2356	3465	2848	1473

TABLE 4: Population									
	North East	North West	Yorkshire and The Humber	East Midlands	West Midlands	East of England	London	South East	South West
Population	2669955	7341450	5502630	4835676	5934002	6236616	8962705	9180371	5624857

TABLE 5: 14 day incidence per 100,000 people									
Date	North East	North West	Yorkshire and The Humber	East Midlands	West Midlands	East of England	London	South East	South West
30/04/2021	46.33	50.64	90.21	50.23	44.61	40.39	45.11	35.60	29.12
01/05/2021	45.77	50.89	90.32	49.96	43.66	40.28	44.52	35.19	28.62
02/05/2021	44.20	49.72	87.99	48.51	41.34	38.95	42.26	33.59	26.85
03/05/2021	43.15	49.53	86.76	48.04	40.34	38.16	40.65	32.59	26.79
04/05/2021	44.57	51.15	86.03	48.74	40.51	38.75	40.10	32.62	27.11
05/05/2021	43.52	52.95	85.90	49.67	39.33	38.45	39.06	31.79	26.79
06/05/2021	44.31	54.14	84.23	51.43	38.62	37.78	38.66	31.02	26.19

A worked example of how a **14-day rate per 100,000** for the South East for 30/04/21 would be calculated:

Sum of case counts in the 14 days up to and including 30/04/21 (TABLE 2, highlighted yellow and grey)

171, 304, 303, 215, 293, 269, 204, 139, 239, 293, 217, 272, 200, 149 = 3,268

*3,268/population of South East*100,000;*

*TABLE 4: 3,268/9,180,371*100,000 = 35.59*

TABLE 5: Rounded to 35.60

*A worked example of how a **7-day rate per 100,000** for the South East for 30/04/21 would be calculated:*

Sum of case counts in the 7 days up to and including 30/04/21 (TABLE 2, grey) 139, 239, 293, 217, 272, 200, 149 = 1,509

*1,509/population of South East*100,000;*

*1,509/9,180,371*100,000 = 16.44*

The same figure can be accessed from the UK coronavirus data page here: Download data | Coronavirus in the UK

Make the following selections:

Area type = Region

Area Name = South East

Metrics = newCasesBySpecimenDate; newCasesBySpecimenDateRollingRate; newCasesBySpecimenDateRollingSum

Data release date = Archive

Data Format = CSV

Risk of Imported infections: Infection Prevalence

Of importance is that the prevalence limits were set on the basis of the expected number of cases, together with the risk appetite relating for the potential of these cases to cause an over-dispersion event.

A shift to use of a 7-day count would require change to the well-established data analysis flows and is not desirable operationally, however if the CCA were happy to accept an increased risk (albeit low) one option would be to raise the Category 2 prevalence to 50 per 100,000. Increasing the threshold for Category 2 status from 30 per 100,000 to 50 per 100,000 would likely increase risk because it would:

- Bring regions of the UK which have higher circulating levels of infection into scope for reduced isolation on entry to the Bailiwick (each passenger could be expected to have a greater chance of being infected, not allowing for vaccination status); and
- Increase the overall number of people travelling off and on to the island due to the increased tolerability of the Category 2 isolation requirements. Higher passenger numbers mean a greater chance of an infection being imported, irrespective of the threshold level applied.

To illustrate this in numbers - with 1000 arrivals from an area with a 14-day prevalence of 30 per 100,000, we would expect an average of 0.6 people to be infected. Testing on arrival is expected to identify 0.3 of these cases, with the remaining 0.3 released into the community when potentially infectious.

Using these prevalence levels the number of possible infected people entering the Bailiwick is calculated (Table 6). It is assumed that published prevalence rate is a 2-fold under-detection at this point in time. However, it is also predicted that the rate of under-diagnosis of infection will increase over time as testing rates are likely to decline.

Increasing the Category 2 threshold level to 50 per 100,000 would mean one infected traveller per 100,000 travellers, with 0.6 infected travellers (per 1,000 travellers) being released infected into the community.

Table 6: Cases per thousand travellers entering the Bailiwick linked to prevalence rates of country / region of origin

Cases per thousand travellers					
Published Prevalence Rate (per 100,000)	**30**	**50**	**100**	250	**500**
Expected infected travellers (mean ± SD)	0.6 ± 0.2	1.0 ± 0.2	2.0 ± 0.3	5.0 ± 0.4	10.0 ± 0.6

Infected travelers released into community with 1 day isolation	0.3 ± 0.1	0.6 ± 0.1	1.1 ± 0.2	2.8 ± 0.3	5.5 ± 0.4
Infected travelers released into community with 7 day isolation	0.04 ± 0.0	0.1 ± 0.1	0.1 ± 0.1	0.3 ± 0.1	0.6 ± 0.1

In way of comparison, the daily case data analysed in Jersey also uses a 14-day case notification rate per 100,000 population. Areas are then categorised as:

- Green if the rate is below 50 per 100,000
- Amber if the rate is between 50 per 100,000 and 120 per 100,000
- Red if the rate is over 120 per 100,000

Of importance is that Jersey has a number of internal restrictions in place. In contrast we have no non-pharmaceutical interventions internally. This makes our population more vulnerable to an over-dispersion event and community seeding. The Isle of Man have selected the same prevalence limits as the Bailiwick using a 14-day model.

Locally, country and regional classification in the Bailiwick is set to run until 1st July 2021, when assessment of risk from incoming travellers will switch to primarily using vaccination status of the individual, as well as population-based vaccine coverage from the country of origin. The continued rollout of the Bailiwick's vaccination programme will provide an increasing level of protection to the local population as we move toward July.

If a prevalence of 50 per 100,000 was selected, this would bring most UK regions into Category 2 status. Whilst it is a legal requirement to accurately declare travel history an increase in volume of passengers and a desire to travel into the Bailiwick could see an increase from higher risk categories – a proactive campaign to ensure accurate declarations would be required or there could be an increase risk. It is difficult to quantify this risk. This could make it more likely that we would see an imported case in the community before the adult vaccination programme is sufficiently advanced. A mitigation is testing on Day 7 that would allow for us to potentially detect chains of transmission earlier. If travellers leave the Bailiwick prior to day 7, this would require a test on departure to enable us to mitigate any risk if a person has tested negative on arrival but subsequently becomes positive. This adds a significant complexity and workload to the testing operations.

Risk of Imported Infections: Traveller Numbers

Table 7 maps the expected numbers of infected travellers entering the Bailiwick using a 14-day prevalence calculation over a period of 50 days. It is acknowledged that there will not be an even distribution of risk and different prevalence levels. However, this provides the CCA with an indicative evaluation of risk.

Table 7: Expected infected travellers related to volume of travellers

	Expected infected travellers (mean ± SD)		Travellers released into community after negative test on day of arrival who become infectious (mean ± SD)	
14 Day Prevalence Level	30	50	30	50
250 Travellers per Day for 50 days	7.5 ± 3.5	12.5 ± 5.0	4.0 ± 2.5	7.0 ± 3.5
350 Travellers per Day for 50 days	10.5 ± 4.5	17.5 ± 5.5	5.5 ± 3.0	9.5 ± 4.5
500 Travellers per Day for 50 days	15.0 ± 5.5	25.0 ± 7.0	8.0 ± 3.5	13.5 ± 5.0

Impact of Vaccination

To date the Bailiwick has delivered 54,673 doses of COVID-19 vaccine. In total 71% of Bailiwick residents aged 18 years or over have received at least one dose of vaccine.

Between now and the end of May there are the following vaccination slots available:

- Week of 10th May: 3,800 slots
- Week of 17th May: 5,100 slots
- Week of 24th May: 5,100 slots

Further roll out of the vaccination programme over the next three weeks will provide further protection for islanders.