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MEMORANDUM E (20) 182 (C)

FROM: ROBBIN SWANN  
MINISTER OF HEALTH

DATE: 30 JULY 2020

TO: EXECUTIVE

**FINAL EXECUTIVE PAPER: BORDER REGULATIONS: METHODOLOGY  
FOR CHARACTERISING COUNTRIES AS GREEN / AMBER / RED IN  
TERMS OF COVID-19 RISK**

1. The process for grading countries as green / amber / red in terms of COVID risk is conducted by Public Health England (PHE) and the Joint Biosecurity Committee (JBC), both of which provide analysis and advice to SofS for Health and other UK Ministers. This advice and any recommendation is also considered by the four Chief Medical Officers of the UK. Grading is formally updated every week.
2. JBC reviews COVID risk for all relevant countries in real time and will flag up any significant increase in grading from green/amber to red whenever it occurs so that consideration can be given as to any measures which might need to be taken to address risk. This continuous assessment was the reason for the change being required to Spain outside of the normal weekly review cycle.
3. In assessing risk, JBC considers point prevalence estimates and incidence rates in the countries in question.
4. **Point prevalence** is an estimate of the proportion of the population that is currently infectious. This model-based estimate draws in both data on deaths and confirmed cases as inputs. Its outputs are broadly consistent with the latest ONS data for infections in the UK. As such it also provides

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an approximate estimate of the probability that any given direct traveller to the UK will be infectious. The **incidence rate** measures the rate of new infections. Each measure provides a different estimate of risk.

5. JBC currently uses three main sources of relevant information:
  - a. The London School of Hygiene and Tropical Medicine's (LSHTM) modelling of the percentage of each country's population estimated to be infectious on an appropriate date (point prevalence of COVID-19). Point prevalence estimates are modelled using open source data and are, therefore, subject to uncertainty and assumptions. Point prevalence will also change over time.
  - b. Public Health England (PHE)'s evidence-based approach to the risk of exposure to COVID-19. This analysis has been developed to inform National Travel Health Network and Centre (NaTHNaC) and FCO travel advice aimed at individual citizens considering travel abroad. It uses information on incidence rates, trends in incidence and deaths rates, and testing based on data published online by each country's government or public institutes and collated by the PHE COVID-19 International Cell, as well as additional epidemic intelligence. This epidemiological data fluctuates frequently (and often daily) and is therefore kept under continuous review.
  - c. A point prevalence alternative for countries for which LSHTM estimates are not available. This is based on incidence rates, death rates and confidence in the data and is compiled by JBC itself.
6. Of note, neither the point prevalence nor incidence rate measures take account of regional variations and therefore countries are graded as a whole, discounting regional variation. Generally speaking, prevalence and incidence will be higher in areas with higher population densities.
7. The above data is used to grade countries as green, amber or red in the following way:
  - a) According to the LSHTM modelling, does the country have an estimated point prevalence higher than in the UK? Where point

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prevalence is higher than in the UK (and confidence intervals do not overlap), the country receives a RED indicator, where it is close to the UK level (the confidence intervals do overlap), it receives an AMBER indicator. Where it is lower (and confidence intervals do not overlap) it scores GREEN;

- b) What level of risk does PHE assign to the country, based on its incidence rate? Where PHE assess that the risk is high, the country receives a RED rating, moderate receives an AMBER rating, and low receives a GREEN rating.
  - c) If the country receives a RED rating against both of these criteria, its overall rating will be RED. If a country receives a GREEN rating on both of these criteria, its overall rating will be GREEN. Mixes score AMBER. This means that the AMBER category is necessarily broad and that countries within it present varying levels of risk.
  - d) An overall RAG rating is not given to countries for which point prevalence information is not available.
8. Further to an earlier request by the Executive I have asked my officials to seek the agreement of JBC to share the most recent week's data assessment for illustration of the process and methodology. Since this data is owned by the Joint Biosecurity Centre, and is shared in confidence, it is not possible to make this information publically available at this time. This is something my officials are discussing with UKG, as in my view this would increase transparency of decision making.

## RECOMMENDATION

9. The Executive is invited to note this paper.

**Robin Swann MLA**  
**Minister of Health**

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