



Covid-19 safe-travel corridors: Why policy makers need to understand surveillance bias and the need for a coordinated approach to restrictions of free movement in the EU – Balancing Social and Economic Risks and transmission prevention potential

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Recently, countries have been imposing travel restrictions in response to the COVID-19 pandemic. In early July, the United Kingdom excluded several countries from a list of safe-travel corridors¹. Travellers arriving in the UK from those countries are required to isolate for 14 days. Spain, France, Belgium and the Netherlands are recent additions to this list, which is under weekly review.

Whilst European countries are prioritising reducing morbidity and mortality from Covid-19 in their populations, travel restrictions have caused some concern in countries where tourism is an important part of the economy. Portugal was initially excluded from the UK safe travel corridors based on its 14-day national COVID-19 notification rate². This restriction was lifted on August 22, but it's case has raised some interesting questions on COVID-19 travel policies, specially after, on September 5, England maintained Portugal on safe travel corridors but Wales and Scotland excluded it.

In introducing restrictions, it is unclear whether countries take the between-country variation in surveillance and testing practice into account when making these decisions. In an infection with a high proportion of asymptomatic cases, testing patterns are an important source of bias in estimates of incidence. Countries with comprehensive tracing and testing strategies, and high testing per capita³, are at risk of being penalised for good quality surveillance and reporting.

Portugal has a broad COVID-19 testing strategy that includes testing many asymptomatic or pauci-symptomatic individuals, detecting a very high proportion of total infections³. Testing is carried out widely in many settings such as households, workplaces, nursing homes, kindergartens, and in some economically deprived, high-migration neighbourhoods. Contacts of cases are often tested even if they no symptoms. Real-time estimates produced by The London School of Hygiene and Tropical Medicine in the first 10 days of August suggest Portugal's testing strategy may be detecting up to



94% of all COVID-19 symptomatic cases, compared to 52% in Italy and 18% in the UK^{3 4}. In Spain serologic evidence found that only 20% of symptomatic participants with COVID-19 antibodies reported a previous PCR test⁵.

Furthermore, travel restrictions were applied to Portugal as a whole, ignoring that cases were concentrated in few parishes, outside touristic destinations. Most of the country has had a very low incidence of COVID-19 for months. Additionally, Portugal has kept strong containment measures in place, including a ban on night clubs and other night locations, compulsory use of masks when indoors or in public transportation, and capacity reduction in shops, restaurants, cinemas, and theatres.

Travel restrictions can be a valid public health tool. Early in the epidemic, when only a small proportion of cases was being detected, many imported cases gave rise to untraceable transmission chains⁶. A genome sequencing study carried out in the UK estimated that in March 2020, there may have been as many as 1300 imported COVID-19 cases⁷. However by now, most countries have implemented comprehensive prevention measures; case finding and contact tracing strategies are in place and most people adopted relevant preventive and test-seeking behaviour. Therefore, imposing travel restrictions to other countries should be considered in the context of a broader package of preventive measures and people's compliance.

National 14-day notification rates of COVID-19 is a blunt indicator of personal risk to travellers that does not take into account geographical distribution of cases. It also contributes to the perception that risk is simply related to visiting certain foreign countries, rather than to what you do when overseas or what control measures are in place locally.

Infectious diseases are rarely randomly distributed, varying geographically and by population group. Recent increases in Europe affect mostly young adults⁸, with mostly minor symptoms, and specific geographical areas. As such, travel restrictions that apply to entire countries seem questionable.

Surveillance indicators are never bias-free, but knowledge of the design and attributes of a surveillance system can help. Decision-makers can work closely with field epidemiologists to better understand the details and complexity of different surveillance indicators. The UK Office of National Statistics⁹ is now screening a sample of the population for the presence of the virus with a PCR test, on a weekly basis, which can help fine tune COVID-19 control policies.

Measuring changes in European sero-prevalence in representative population samples may be a way to compare COVID-19 activity across European countries and assess risk of infection for travellers while remembering that travellers risk depend heavily on their own behaviour and context.

ECDC's Weekly Country overviews⁸ are contributing to a better understanding and transparency of COVID-19 numbers and control policies across Europe. They provide information on COVID-19 notification rates, testing rates, morbidity and mortality, and preventive measures broken down by groups in the population, by country and region. By adding information on the "testing and tracing strategies" and different control policies, including the country's surveillance systems, the weekly reports would allow fairer comparisons across countries and improved European cohesion for COVID-19 control allowing for benefits to outweigh social costs and potential harms of movement restrictions.



In September 4 the European Commission issued a proposal¹⁰ for recommendation of a coordinated approach to the restriction of free movement in response to the COVID-19 pandemic where it states that Member States should take into account broader criteria when putting in place any restrictive measures including the percentage of positive tests and the number of COVID-19 tests carried out per 100.000 people in a given area during a seven-day period and propose a colour code and thresholds :“restrictions could be applied, if at all, to regions with a 14-day cumulative COVID-19 case notification of 50 or more and a test positivity rate of 3% or more” and “regions where the 14-day notification rate is more than 150 per 100 000 population even if test positivity rate is below 3%.” However this will not eliminate the need to consider public health preventive context and surveillance system characteristics. Transparency and open debate must be pursued in order to minimize negative impacts of restrictions on the right to free movement in the EU on society , economy and European people’s cohesion while adequately managing risk when justified, considering surveillance bias and countries prevention measures, peoples compliance and contexts as well as geographical and contextual distribution of cases.

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