Today's Agenda

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Testing times: the UK government's travel policy

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The UK's Global Travel Taskforce, which has been charged with considering how to boost safe travel to and from the UK in light of the COVID-19 pandemic, announced today that from 15 December it will remove the 14-day quarantine requirement for international passengers. This will be replaced with the option to take a test from a private provider after five days of self-isolation, with a negative result releasing passengers from the need to isolate[1]

Since June, the UK has had a policy in place that all international travellers need to quarantine for 14 days unless they arrive from one of the countries on the UK government's list of travel corridors. Part of the basis for this policy was evidence from Public Health England (PHE) that concluded testing on arrival at an airport would identify only 7% of virus cases and therefore would not be effective at helping to control the spread of COVID-19.[2] Oxera and Edge Health were subsequently commissioned by a consortium of airlines, airports and industry organisations to undertake analysis of this PHE paper.[3] Our analysis showed that the PHE paper had significantly understated the effectiveness of testing.

The UK government established the Taskforce in October to consider a wide range of evidence from expert representatives in order to determine how a testing regime could be introduced to increase safe travel to and from the UK. With the announcement today, the government has brought the UK more in line with other European countries that have testing schemes in place such as Germany, Belgium, France and Portugal. Importantly, it is also likely to provide some boost to air travel and therefore help to mitigate some of the negative impacts on the travel and tourism sectors, which have been hard hit by the pandemic.

However, there is a question about whether the government's recommendation is the most effective from a public health perspective in terms of limiting the potential spread of COVID-19 from passengers to the local community.

An effective strategy?

In partnership with Edge Health, we have undertaken our own modelling of the effectiveness of a range of different airport testing regimes. Our analysis takes account of non-compliance with quarantine rules, which is widely acknowledged (including by SAGE[4] and academic studies), but something that the government has not previously considered in its analysis.[5] Compliance has been estimated to be only 71% for symptomatic individuals and as low as 28% for asymptomatic individuals. When these levels of non-compliance are taken into account, we find that a 14-day quarantine is actually the least effective strategy. It therefore makes sense that the government has moved away from this policy.

However, our analysis shows that testing on day three is the most effective strategy from a public health perspective (see Table 1 overleaf). This reflects the balance between infection detectability increasing while travellers wait for a test and an earlier testing minimising non-compliance for passengers who receive a positive test result. Testing pre-departure and on arrival are also effective, and may have practical and logistical benefits (e.g. testing at the airport ensures that individuals take the tests). Testing five days after arrival is shown to have a nearly identical level of effectiveness to testing on arrival. Therefore, if the government is going to move to testing on day five, which is less effective than testing on day three, it might as well move to testing on arrival as this will have a greater impact in terms of boosting travel with no additional public health risks.

In its announcement, the government has noted that it will continue to work with the transport industry to further build on the recommendations, including exploring pre-departure testing pilot schemes with partner countries. Many airlines have already announced such schemes.

The bigger picture

Regardless of the testing scheme in place, the numbers need to be viewed in context. With respect to international travel between EU countries and the UK, our findings imply that only 0.01% of air passengers might have been infectious and entered the UK in an average week in August if there had been on-arrival testing in place. This is equivalent to one infectious passenger per 10,000 passengers. This figure needs to be contrasted with a local infection prevalence of 57 per 10,000 in England over September and October.[6]

All the government's work to date effectively assumes that the goal is to remove the risk from imported infections, reducing the risk of travellers spreading the virus to zero if possible. However, the UK has pursued a strategy of viral suppression, not elimination—leisure activities have been open and travel corridors established. So the effectiveness of airport testing schemes needs to be considered in the context of an understanding of the level of acceptable risk for travellers and how this would change with testing.

It also needs to be considered in the context of the extent to which even a test and release on day five is still likely to dissuade many people, and particularly business travellers, from flying and therefore the extent to which the UK economy will continue to be negatively affected.

Questions remain

COVID-19 is requiring the UK government to make a number of tough decisions around risk. However, our analysis shows that the government's move to testing after five days, while a significant improvement from the 14-day quarantine policy, does not necessarily minimise risks from a public health or an economic perspective.

Table 1 **Infectious days screened via screening strategies, taking account of non-compliance**

Group	Description	Percent of infectious days screened compared to syndromic screening on departure alone	
		RT-LAMP	RT-PCR
Current policy (to 15 December)	Mandatory 14-day quarantine upon arrival	25% (8%, 42%)	25% (8%, 42%)
Pre-departure	Test three days before departure	34% (17%, 51%)	36% (19%, 53%)
	Test on departure	47% (31%, 63%)	NA
On arrival	Test on arrival	51% (33%, 64%)	50% (34%, 64%)
Post-arrival	Test three days after arrival	60% (47%, 72%)	59% (46%, 70%)
	Test five days after arrival	53% (42%, 65%)	51% (39%, 64%)
	Test seven days after arrival	45% (32%, 57%)	43% (31%, 57%)

Note: Median values are presented, along with 90 percent confidence intervals. RT-LAMP stands for reverse transcription loop-mediated isothermal amplification. RT-PCR stands for reverse transcription polymerase chain reaction.

Source: Edge Health and Oxera.

1 This applies to countries not included on the UK government's travel corridor list.

2 Public Health England (2020), 'Investigation into the effectiveness of 'double testing' travellers incoming to the UK for signs of COVID-19 infection', 17 June.

3 See Oxera and Edge Health (2020), 'Review of evidence on testing on arrival schemes', 22 October. Available at: https://bit.ly/35Yto2Y.

4 SAGE (the Scientific Advisory Group for Emergencies) provides scientific and technical advice to support the UK government during emergencies.

5 See Scientific Advisory Group for Emergencies (2020), 'Multidisciplinary Task and Finish Group on Mass Testing', 11 September, para. 9; Steens, A., et al (2020), 'Poor self-reported adherence to COVID-19-related quarantine/isolation requests, Norway, April to July 2020', 17 September, *Eurosurveillance*, **25**:37. Available at: https://bit.ly/378TuiY .

6 See Oxera and Edge Health (2020), 'Review of case studies of effectiveness of testing schemes', 2 November. Available at: https://bit.ly/3l3nq4W .

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