

1 line is Parliamentary democracies, across the world, and  
2 indeed the UK is higher right through to the middle  
3 of 2021; after spring 2021 becomes much lower on  
4 average, across all these different measures.

5 **Q.** You have already taken us to the earlier charts, which  
6 showed us much more carefully the delay at  
7 the beginning. These charts show overall the level of  
8 stringency over time.

9 Are you able to reach a view as to whether, in  
10 general terms, the United Kingdom applied  
11 non-pharmaceutical measures only when it became apparent  
12 that they were unavoidable, because they were delayed  
13 and at the time at which they were then imposed we know  
14 in the United Kingdom the NHS was believed to be likely  
15 to collapse, and then when they're lifted there is then  
16 a long period of delay before consideration appears to  
17 be given to their reintroduction, and then when they are  
18 reintroduced, again, because of the passage of time and  
19 the lateness, there is a requirement for those  
20 restrictions to be ever more stringently reimposed?

21 **A.** Correct. So we see this rollercoaster tendency where  
22 restrictions are put into place only after it becomes  
23 apparent there will be a very severe threat to  
24 the health system. That's after a large amount of  
25 community spread has begun. Because it's so prevalent

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1 measures to maintain a very low level of spread, and,  
2 when a new outbreak would emerge, to quickly react to  
3 make sure those individuals were not involved in further  
4 spreading the virus. That prevented them from getting  
5 to the point of a wider population spread, in many  
6 instances, that would have required more restrictive  
7 stringent measures to control.

8 So the effective use of these testing measures was  
9 a nice way of maintaining a low level of spread and  
10 therefore not beginning the rise of the rollercoaster  
11 back up the ramp.

12 **Q.** Did you also find a link between those countries which  
13 had that testing capacity and which were able to avoid  
14 relatively stringent NPIs and those countries which  
15 suffered the most in terms of excess number of deaths,  
16 economic performance, and general health impact?

17 **A.** Correct. So the countries that were riding  
18 the rollercoaster were referring from a trifecta of  
19 large health impacts, high, long periods of stringency,  
20 and negative economic consequences, and those that were  
21 able to maintain a low level of spread, perhaps through  
22 effective TTI measures, were able to have a better  
23 outcome on all three of those measures.

24 **Q.** Overall, does the literature and the data from your  
25 tracker project show that there were some areas of

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1 at that moment, the restrictions need to be more  
2 stringent and to be in place for a longer period of time  
3 than might have been the case otherwise, but precisely  
4 because sustaining high stringency for a long period  
5 comes with costs, there's huge pressure to roll them  
6 back sooner rather than later and that leaves,  
7 inevitably, some residual virus circulating in  
8 the population, which lays the seeds for the next wave  
9 to emerge. So this kind of tendency to act too late in  
10 the first instance and to take measures away too soon in  
11 the second instance does tend to lead to the peaks and  
12 troughs that these graphs show.

13 **Q.** Do later charts and figures, which I won't take you to,  
14 show that an analysis, putting together some of  
15 the threads that you have identified, of those countries  
16 which had significant or substantial testing, contact  
17 tracing and isolation systems against those countries  
18 which were not obliged to impose NPIs at such high  
19 levels of stringency because they had effectively  
20 delayed, show that the presence of significant testing,  
21 contact tracing and isolation measures allowed countries  
22 not to have to react by way of the imposition of such  
23 severe stringent measures?

24 **A.** Indeed. So countries as diverse as Japan, South Korea,  
25 Vietnam, others, were able to use testing and tracing

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1 conspicuous success for the United Kingdom: the speed  
2 and scope of its genetic sequencing, because that  
3 allowed it to be very well placed to assess  
4 the emergence of variants and the spread ultimately of  
5 the virus; a very considerable and impressive degree of  
6 ability to test and survey and keep tabs on the spread  
7 of the virus, particularly in the middle and later  
8 stages of the pandemic, through surveys such as the ONS  
9 COVID-19 Infection Survey; and the speed and extent of  
10 the vaccine deployment?

11 **A.** Correct.

12 **Q.** But the absence of a test, trace and isolation process  
13 ultimately led to the data and the findings which you've  
14 reached in relation to the delay and then the repeated  
15 reintroduction of extremely stringent and damaging  
16 measures?

17 **A.** We do see consistently that countries that performed  
18 well, were able to avoid the rise and fall of cases,  
19 deaths and restrictive measures, were those that used  
20 the testing, tracing, isolation and support measures  
21 effectively, alongside other measures.

22 **MR KEITH:** Thank you very much.

23 **LADY HALLETT:** Thank you very much indeed, Professor Hale.  
24 An extraordinary project.

25 **THE WITNESS:** Thank you.

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