



London

jacquiyoung1@gmail.com

Cite this as: *BMJ* 2020;370:m3678<http://dx.doi.org/10.1136/bmj.m3678>

Published: 21 September 2020

BRIEFING

Covid-19: What's going wrong with testing in the UK?

Is it the increase in demand, “ineligible” applicants, or a lack of laboratory capacity hampering coronavirus testing? **Jacqui Wise** examines the key questions around the current lack of access to tests in the community

Jacqui Wise *journalist*

How big is the problem?

The UK's community testing system for covid-19 seems to be under immense strain. This is the “pillar 2” testing: the commercial, centralised system set up by Deloitte consisting of local drive-in and walk-in test sites, with swabs being sent for analysis at the five Lighthouse laboratories around the country. In recent weeks the media have been full of stories of people finding that no tests are available or that they must travel hundreds of kilometres to get one. This has led to people turning up at emergency departments demanding tests and to long queues at testing sites.¹

Speaking at the Commons Science and Technology Committee on 17 September, Dido Harding, the head of NHS Test and Trace in England, admitted that the demand for coronavirus tests was three or four times higher than the total daily capacity.²

Has demand increased?

Demand for tests across the UK has soared in recent weeks. This is due to a perfect storm of children going back to school, people returning from summer holiday, and more people going back to workplaces. In addition, there are rhinoviruses circulating producing symptoms that could be mistaken for those of covid-19, something that is only likely to worsen through the autumn and winter flu season.

Harding told the Science and Technology Committee that there had been a marked increase in the number of parents bringing children for testing and that this hadn't been predicted by modelling provided by the government's Scientific Advisory Group for Emergencies (SAGE).

Are people getting tested when they don't need to?

Speaking in the House of Commons on 8 September, the health secretary for England, Matt Hancock, said that “about 25%” of tests were being used by asymptomatic and uninfected people. When questioned by *The BMJ* the Department for Health and Social Care said that “the figure came from internal track and trace research.” The spokesperson said, “There has been a spike in demand in recent weeks and the message is clear: only people with symptoms should be requesting a test.”

Is laboratory capacity the bottleneck?

There seems to be no shortage of staff or swabs at the testing sites. Sarah Jane Marsh, director of testing for NHS Test and Trace, said it was the laboratories that were “the critical pinch point.” On Twitter on 8 September she issued “heartfelt apologies to anyone who cannot get a covid test at present.” She added, “All of our testing sites have capacity, which is why they don't look overcrowded, it's our laboratory processing that is the critical pinch point. We are doing all we can to expand quickly.”³

Allan Wilson, president of the Institute of Biomedical Sciences, agreed it was a laboratory capacity issue, although he believes the capacity may have been overstated in the first place. “I would dearly love to know how capacity was defined. The trouble is it is shrouded in secrecy,” he told *The BMJ*.

What is the laboratory capacity?

The government says that testing capacity is higher than ever. Its dashboard shows that the UK laboratory daily testing capacity was more than 370 000 last week. However, this is the total capacity and includes pillar 1 (tests done in healthcare settings), pillar 3 (antibody tests), and pillar 4 (surveillance testing run by the Office for National Statistics). On 17 September a total of 236 219 pillar 1 and 2 tests were processed, and the combined capacity listed for pillar 1 and 2 was 242 911. Of this, around 160 000 is pillar 2 capacity. However, on 12 September capacity for pillar 1 and 2 was breached, according to the government's data.

Duncan Robertson, a policy and strategy analytics expert at Loughborough University who has been analysing the government's testing data, told *The BMJ* that pillar 2 capacity was also breached on 23 August, when 121 555 pillar 2 tests were carried out, against capacity of 120 000. He says, “Once there is a backlog then this can build up, and it can take a long time to get rid of it. It may be that they are cutting down on capacity to help clear this backlog.” He says that pillar 4 surveillance tests also vastly exceeded stated capacity throughout August and September and that these may have been processed under pillar 2. He is also concerned that capacity in pillar 1 laboratories (those run by the NHS and Public Health England) is more than 80% taken up, which may affect how easily NHS workers and patients get into hospitals get tests in the near future.

Hancock told parliament on 15 September that the backlog was reducing and is less than one day's test processing capacity. Health department documents leaked to the *Sunday Times* state that there was a backlog of 185 000 tests on Friday 11 September, which led to some tests being sent to Italy and Germany for processing.⁴ The *Guardian* also revealed an email sent on 24 August asking NHS laboratories to help analyse community swabs because the Lighthouse ones were overwhelmed.⁵

What is limiting capacity at the Lighthouse laboratories?

It seems to be staffing problems rather than a shortage of equipment or reagents that is the issue. "We do know the Lighthouse labs have lost a lot of staff with many postgrads and senior scientists returning to academia," says Wilson. "But all that was highly predictable." He adds, "I think they will struggle to recruit staff, as there is a limited pool of experienced scientists, and every hospital trust and health board is fishing from the same pool." The *Mail on Sunday* reported that Boris Johnson recently wrote to the heads of 50 top universities and medical schools asking for urgent support to staff the Lighthouse laboratories.⁶

The *Times* has reported claims of inefficiencies within the labs.⁷

How is laboratory capacity affecting availability of tests?

Limited capacity in the laboratories has led to booking for online testing and for home testing kits being periodically taken off line to throttle demand. Harding admitted this at the Science and Technology Committee on 17 September: "We have to restrict the number of people who are taking tests in the testing sites so there's no risk of those tests going out of date when they are processed in the labs." The health department spokesperson also told *The BMJ* that it was targeting testing capacity at the areas that needed it most, including those with an outbreak.

How does the UK compare with other countries?

The Our World in Data website shows that in countries' seven day averages up to 14 September the UK had carried out 2.8 tests per 1000 people, higher than most other European countries, including France (2.1 per 1000) and Spain and Germany (both 1.8).^{8,9} However, this was below Denmark, at 5.7, and how tests are counted is not necessarily the same in each country. Maggie Rae, president of the Faculty of Public Health, told *The BMJ*, "Other countries across the world are managing a more effective system on less tests than we are doing, so we need to build a much more intelligent and agile testing strategy." She said that the £10bn being spent on NHS Test and Trace would be better spent on a more localised system, like that in Germany. She fears that the current situation will become even worse in the coming weeks, particularly once the new NHS covid-19 app is launched, which will encourage more people to get tested. "We need to act now and redesign the system, as we can't afford to wait," she warns.

What is the government's plan?

The prime minister, appearing before the Commons Liaison Committee on 16 September, admitted that the testing system had "huge problems."¹⁰

The government has said it plans to increase capacity to 500 000 tests a day by the end of October. It hopes this can be achieved when new Lighthouse laboratories in Newport, Gwent, and Charnwood, Leicestershire, are added to the laboratory network in the coming weeks. Until these come on stream, the government's plan is to ration tests by giving priority to NHS patients, staff in care homes,

and key workers such as teachers. This new testing strategy is due to be published next week.

However, Robertson warns, "We cannot wait for extra capacity to come along in October. There is now a very real risk that the test, trace, and isolate system will break down and we will see the virus becoming out of control." The Lighthouse laboratories were built extremely quickly because the UK had very few diagnostic testing facilities of this type. The government chose to centralise the system, working with private companies and universities, rather than existing NHS laboratories. Wilson believes this was a mistake. "The Lighthouse lab model isn't sustainable in the long term, and we need an exit strategy," he says.

Competing interests: None declared.

Provenance and peer review: Commissioned; not externally peer reviewed.

- 1 Bolton NHS Foundation Trust. Increase in covid patients at Royal Bolton Hospital. Sep 2020. <https://www.boltonft.nhs.uk/2020/09/increase-in-covid-patients-at-royal-bolton-hospital>.
- 2 Iacobucci G. Covid-19: Testing service wasn't prepared for increased demand, chief admits. *BMJ* 2020;370:m3676.
- 3 Schraer R. Coronavirus: Government apologises over tests shortage. BBC News. 8 Sep 2020. <https://www.bbc.co.uk/news/health-54072479>.
- 4 Pogrud G, Calver T, Wheeler C. Leaked figures reveal scale of coronavirus test shortage. *Sunday Times*. 13 Sep 2020. <https://www.thetimes.co.uk/article/leaked-figures-reveal-scale-of-coronavirus-test-shortage-xjxprnm0v>.
- 5 Boseley S. Private labs unable to process all covid tests, NHS email reveals. *Guardian*. 15 Sep 2020. <https://www.theguardian.com/world/2020/sep/15/private-labs-unable-to-process-all-covid-tests-nhs-email-reveals>.
- 6 Powell M. Boris Johnson pleads with universities to send him 400 "technicians, post-docs or graduate students" to man new coronavirus testing mega-labs and save the system from collapse. *Mail on Sunday*. 13 Sep 2020. <https://www.dailymail.co.uk/news/article-8726555/Boris-Jonson-seeks-experts-staff-covid-19-testing-labs.html>.
- 7 Kennedy D, Smyth C. "Chaos and inefficiency" in coronavirus testing labs. *Times*. 18 Sep 2020. <https://www.thetimes.co.uk/article/chaos-and-inefficiency-in-coronavirus-testing-labs-dbsvt7n25>.
- 8 World map: total tests performed relative to the size of population. Our World in Data. <https://ourworldindata.org/coronavirus-testing#world-map-total-tests-performed-relative-to-the-size-of-population>.
- 9 Iacobucci G. Covid-19: Is the UK carrying out more tests than anywhere else in Europe? *BMJ* 2020;370:m3497. doi: 10.1136/bmj.m3497 pmid: 32900775
- 10 Liaison Committee Wednesday 16 September 2020. Parliamentlive.tv. <https://parliamentlive.tv/Event/Index/31e5cbee-1b69-4137-9c72-f0231cd32686>.

This article is made freely available for use in accordance with BMJ's website terms and conditions for the duration of the covid-19 pandemic or until otherwise determined by BMJ. You may use, download and print the article for any lawful, non-commercial purpose (including text and data mining) provided that all copyright notices and trade marks are retained.