Industry responds to call to arms to build British diagnostics industry at scale

- Government sets specific new challenge to industry to help achieve 100,000 tests a day by end of April

- Business consortium set up to rapidly develop new antibody tests

The UK's top pharmaceutical and diagnostic companies are teaming up to rapidly develop and roll out millions of coronavirus tests in the coming months as part of the next phase of the government's 5-pillar national testing strategy to identify if people have the virus.

A number of existing suppliers and UK-based global companies have already responded positively to the government's call to action on the testing national effort.

Pharmaceutical giants like AstraZeneca and GlaxoSmithKline (GSK) have been creating new national business collaborations, to help deliver on the government's plan to carry out 100,000 coronavirus tests a day by the end of April.

Their work primarily focuses on tests to identify whether people currently have the virus, and will be targeted on frontline healthcare and other essential workers who have the virus before deploying the tests to the wider population.

New developments from businesses working to scale-up testing programmes include:

- a new testing laboratory to be set up by AstraZeneca, GSK and Cambridge University to be used for screening for coronavirus testing, with the aim of carrying out 30,000 tests a day by the start of May. The companies are exploring the use of alternative chemical reagents for test kits in order to help overcome current supply shortages
- AstraZeneca and GSK are also providing scientific and technical expertise in automation and robotics to support the government's new national testing centres
- Thermo Fisher has committed to continuing to supply the UK with testing kits to test for the presence of the coronavirus virus and is working to scale up manufacturing at its existing UK sites
- Oxford Nanopore's sequencing technology is being used worldwide, including in multiple labs in the UK, to rapidly sequence the coronavirus and other pathogens that may also be present in a sample. This is supporting epidemiology and scientific understanding of

> coronavirus. The company's research and development team is also exploring advanced test options using its DNA/RNA sequencing technology

Health Minister Lord Bethell said:

> We are rapidly scaling up the national effort to boost testing capacity for coronavirus to protect the vulnerable, support our NHS and, ultimately, save lives.
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> I am proud that we have already had an impressive response from companies of different scales and from different sectors coming forward with a commitment to work together, share expertise and resources to establish a large British diagnostics industry which can help us achieve 100,000 tests a day by the end of April.
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> We will do everything we can to tackle this virus and we are pooling all the resources from our world-leading life sciences industry, top universities and clinical leaders to overcome this together.

As part of the government's national testing strategy, the expertise and resources of the UK's world-leading life sciences industries are being pooled to build a large-scale British diagnostics industry as quickly as possible.

To support this, an online portal has launched on GOV.UK providing companies with specifications for our most urgent requirements, and the NHS Business Services Authority has set up a new engagement team allowing companies an easier, more focused route to offer their support.

Companies with proposals able to deliver on these specifications quickly and at scale may also be able to access a range of support from government, including accelerated regulatory approval, centralised procurement support if appropriate and, in some cases, development grants.

The government has set up a testing taskforce with over 100 companies and Health Secretary Matt Hancock today set out 4 challenges to industry in a webinar to help build on progress as we scale up our testing capability:

1. To provide additional testing consumables that are in short supply, such as swabs, tubes and components for test kits
2. For universities, research institutes and private companies to donate additional lab testing capacity for coronavirus tests, supported by best practice guidance on specific requirements
3. To develop new technology to diagnose coronavirus quicker than ever before and new methods of delivering tests widely across the UK safely
4. Put forward proposals in support of reliable and accurate antibody testing. These should be scalable, resilient and scientifically robust. Proposals could include a range of ideas for end-to-end solutions or address specific challenges in the supply chain

One such group has already launched to meet the fourth of these challenges. A

business consortium, UK Rapid Test Consortium (UK-RTC), including Oxford University, Abingdon Health, BBI Solutions and CIGA Healthcare has launched, in order to design and develop a new antibody test to determine whether people have developed immunity after contracting the virus.

So far, the antibody tests that have gone through the validation process have not proven accurate enough to be rolled out for public use, which is why the government is also backing efforts to develop a home-grown test.

Only tests that are accurate will be rolled out, to ensure people are not put at risk and we will continue to work closely with UK and international partners to develop a reliable test as soon as possible.

Professor John Newton, the government's adviser on testing, who is co-ordinating the programme, said:

> I'm delighted to be overseeing this absolutely crucial project to help us achieve 100,000 tests a day by the end of April.
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> We have already launched from scratch an entire new network of testing labs across the UK and, with the support of industry, we can go even further, both in support of our existing work and in developing new tests.

The government's national testing strategy is split into 5 pillars:

The first pillar is testing for those with a medical need in Public Health England (PHE) labs and NHS hospitals. These are PCR tests, where a swab sample is taken and analysed in a lab to find out if you have coronavirus. (2 April Announcement).

- We announced on 18 March that we would aim to increase NHS/PHS testing capacity from 5,000 to 10,000 a day and then 25,000 tests a day (18 March announcement)
- We have already doubled testing to 10,000 tests a day in a fortnight, and we are now working towards 25,000 a day by late April.

In the second pillar of the plan, we have launched a partnership with universities, research institutes and companies to begin rollout of a network of new labs and testing sites across the UK, to provide thousands more PCR swab tests a day for critical key workers, starting with NHS frontline staff and social care workers, so those who test negative for coronavirus can return to work as soon as possible (27 March announcement).

This involves setting up – from scratch and at pace – a completely new network of testing sites to collect samples and 3 new super labs (Milton Keynes, Alderley Park and Glasgow) to analyse them. This rollout will be across the UK, and involves overcoming huge logistical challenges (people, lab space, equipment, chemicals, data and IT) at enormous speed.

Since the pilot facilities went live on 28 March, more than 20,000 NHS

workers have already been tested at the trial sites, and as the rollout continues we expect to be doing thousands more tests a week.

The third pillar in the government’s testing plan is antibody testing: these tests are designed to detect if people have had the virus and are now immune.

Antibody tests offer the hope that people who think they have had the disease will know they are immune. So far, the antibody tests that have gone through the validation process have not proven accurate enough to be rolled out for public use, which is why the government is backing efforts to develop a homegrown test.

The fourth pillar is surveillance. We aim to conduct some of the biggest surveys in the world to find out what proportion of the population have already had the virus. This is done using a high-accuracy antibody test operated by PHE at their Porton Down science campus. We will use these tests to help strengthen our scientific understanding and inform us all on the big choices we have to make about social distancing measures and how we exit from this crisis.

The fifth pillar is the most ambitious. We want to build, in a short space of time, the large-scale diagnostics industry that this country currently lacks. Just as our top-end manufacturers have joined the national effort to build ventilators, so our life sciences companies will do the same for testing. UK pharmaceutical giants, which don’t have a tradition of diagnostics, are now working with our world-leading but smaller diagnostics companies to build a large-scale British diagnostics industry at scale. This new national effort for testing will ensure we can get tests for everyone who needs them.