

Lessons learnt: the role of academia and industry in the UK's diagnostic testing response to COVID-19 – lay summary

Introduction

Testing for COVID-19, tracing those who might have been infected, and isolating suspected positive cases – combined with hand washing and physical distancing – together play a key role in limiting the spread of COVID-19. Unlike some other countries, the UK was not equipped with the required national and local capacity for COVID-19 testing when the virus emerged in early 2020. The systems needed to test millions of people had to be created quickly to cope with the rising number of infections, drawing on the expertise of academia and industry. As the pandemic continues to spread in the run up to winter, the UK's testing capacity needs to be expanded further.

The Academy of Medical Sciences held a virtual roundtable on 2 October 2020 with 23 experts from across the NHS, Government, academia and industry to explore how best to do this. Its goals were to:

- Explore the challenges and opportunities faced by academic and industrial laboratories in contributing to the UK's testing programme.
- Consider lessons learnt from the rapid expansion of the COVID-19 testing programme in spring 2020.
- Identify ways that the UK could be better prepared in the future.

Key messages

1) Academia and industry have a vital, and currently underused, role to play in supporting the UK's national COVID-19 testing efforts. We need better, closer collaboration in the future.

The UK's testing response, including the UK Lighthouse Labs Network, has been supported by collaboration across the NHS, academia and industry. This has involved the exchange of staff, equipment, materials, knowledge and skills. However, as the pandemic continues to spread in autumn and winter months, the UK's testing capacity needs to be expanded further.

In the future, experts from the NHS, academia and industry should be closely involved in developing the UK's testing response – with greater transparency and timely communication of decisions to everyone involved. This will inform academia and industry about how they can most usefully contribute.

2) We need to develop and use more innovative ways of testing for COVID-19.

There is scope to improve the way we test – for instance by pooling multiple samples for testing, testing for several viruses at the same time and improving packaging to speed up the analysis of samples. There is potential too for

developing tests for different purposes, like mass testing in schools and large-scale events such as sports grounds.

We need a more flexible approach to regulation – also known as laboratory accreditation – so that as many laboratories as possible can contribute to national testing without unnecessary delays.

3) We need to make the best use of resources – including local resources.

The decision to create a centralised testing system allowed the rapid growth of the UK's testing capacity, but it also created challenges for laboratories outside the system.

We need to make the best use of local laboratories and experts to support the wider national testing system. This might include more local decision making and action in response to local outbreaks.

As universities and other laboratories begin to reopen, skilled volunteers are returning to their day jobs, leaving a shortage of workers for the national testing strategy. We need a sustainable workforce strategy that can provide much needed career opportunities, including for university graduates, in a challenging job market. We also need more flexibility for staff to move between the NHS, academia and industry. This won't just meet the short term gaps in the workforce, it will strengthen the UK's expertise and build capacity for the future.

And we need to provide certainty to laboratories by agreeing sufficient, timely and longer-term funding and contracts.

Conclusion

There is an opportunity for the UK to be a leader in disease testing in the long term. Investing in the testing infrastructure now will help achieve this goal and help ensure the UK has a testing system that is fit for purpose in the event of a future epidemic. A stronger testing infrastructure will also help meet the demands for tests for other diseases such as cancer and heart disease.