Covid-19: Home testing programme across England aims to help define way out of lockdown

Ingrid Torjesen

London

A research programme to determine the prevalence of covid-19 in the community and the proportion of the population infected has been unveiled by the Department of Health and Social Care for England.

The data it collects will help inform the delivery of NHS and other services over the coming months and the strategy for leaving lockdown and returning to “normal” life.

In the first part of the two part Real-time Assessment of Community Transmission (REACT) programme, 100 000 randomly selected people from across England will be sent self-sampling kits and asked to take nose and throat swabs that will be tested for active covid-19 infection (by the antigen test) to determine how many had the virus at that particular point in time. Current data on covid-19 seriously underestimates the prevalence of the infection, because milder and asymptomatic cases are not recorded. Also, testing initially focused on serious cases; and while testing has expanded—firstly to NHS staff with symptoms and then to other key workers—some of those who are eligible have struggled to access tests.¹

The BMA and NHS Providers have emphasised the need for a more systematic approach to testing.

Peter English, chair of the BMA’s public health medicine committee, said, “We need an approach to testing that will help us identify where the disease is, to help us manage any emergence from lockdown. This means we need a strategic, systematic, rather than random, approach to testing.”

On BBC Radio 4’s *Today* news programme on 30 April Saffron Cordery, deputy chief executive of NHS Providers, called for “a clearer, better communicated strategy that helps everyone involved with running the tests understand where we are headed rather than having a series of tactical announcements week on week about new groups that will be tested.”

The Department of Health and Social Care pointed out that community testing would use additional capacity that is coming online and would not detract from testing the other eligible groups. It said that more than 179 000 NHS staff, essential workers, and their families have been tested successfully and that only a tiny proportion of people have reported difficulties.

The second part of the REACT programme, which is being led by Imperial College London and Imperial College Healthcare NHS Trust, and supported by the market research organisation

Ipsos MORI, will assess antibody finger prick tests for accuracy and ease of use, provide a snapshot of the levels of past infection, and prepare the ground for the future rollout of wide scale population self-testing.

The accuracy of the antibody test will be verified by volunteers from Imperial College Healthcare NHS Trust who have recovered from covid-19, and then up to 10 000 members of the public will trial it to ensure that the instructions for administering the test are clear. The test will then be verified in a real world setting; 5000 key workers will self-test and will also be tested by a health professional, and the results compared. If antibody self-testing is found to work with a high degree of accuracy, acceptability, and usability it will be rolled out to 100 000 people later this year, to provide an indication of the prevalence of covid-19.

Ara Darzi, director of the Institute of Global Health Innovation and the sponsor of the programme at Imperial, said, “Short of a vaccine, testing is the only way out of lockdown. But the testing landscape is like the wild west with no rules, no standards, and widely varying reliability. Even the most accurate test is useless unless it is usable.”

Colin Butter, associate professor in the School of Life Sciences at the University of Lincoln, said that data on current infection levels were “only a rough estimate” because mild and asymptomatic cases were not included. “We also do not know how many people have been infected, recovered, and are now presumed to have a level of immunity to reinfection,” he said.

“This knowledge will be vital for modellers seeking to understand the detail of the pandemic and to the design of strategies to ease lockdown whilst keeping R₀, the basic reproductive ratio of the virus, below 1.”

He added that the data would also provide much needed detail about the infection dynamics of the pandemic and some insight into whether people who previously had covid-19 could become reinfected.

1 Duell M, Spencer B. Coronavirus tests run out just 80 minutes after ministers open screening to all over 65s and key workers—but government co-ordinator says only people with symptoms should apply. *Daily Mail* 29 Apr 2020. <https://www.dailymail.co.uk/news/article-8268371/Scramble-coronavirus-home-testing-kits-screening-expanded.html>.