Asymptomatic testing backed by new research studies

- Latest data shows most widely used LFD tests are effective at detecting the Delta variant – now the most widely transmitted strain of COVID-19.
- Studies find accuracy of tests remains high whether it is performed by an experienced or inexperienced user.

Findings from three studies on the real-world use of rapid tests, known as lateral flow devices (LFDs), have confirmed their effectiveness under a variety of conditions, demonstrating the reliability and adaptability of these tests.

The three research papers, two of which have been published by the government today (Wednesday 7 July) and one by Liverpool University yesterday, analysed the use of LFDs in a variety of scenarios: against variants of concern; on patients with high or low viral loads; as part of mass testing campaigns; in the hands of inexperienced users and; with different types of swabs.

Alongside the phenomenal scale and breadth of the rollout of the vaccination programme, and the 'Hands, Face, Space' guidance, regular testing is a vital tool in stopping transmission as the country follows the roadmap and starts to reopen.

With around one in three people infected with COVID-19 never developing symptoms, asymptomatic testing allows us to swiftly spot those cases most likely to be infectious. Knowing our rapid tests are effective in identifying the Delta variant means everyone who is currently engaged in regular twice-weekly testing can be confident the test will detect what is now the most common strain in circulation.

UKHSA Chief Executive Dr Jenny Harries:

> The UK has now established itself as a powerful testing armoury. Millions of people have been taking lateral flow devices used every week to help us carefully reopen society.
>
> These rapid tests continue to play an integral role in helping us stay on top of this virus by quickly identifying positive cases that may have otherwise gone unnoticed. This enables us to take swift action, preventing asymptomatic cases from becoming outbreaks.

In vitro and clinical post-market surveillance of Biotime SARS-CoV-2 Lateral Flow Antigen Device in detecting the SARS-CoV-2 Delta variant (B.1.617.2)

Analysis of the Innova LFDs and their ability to detect the Delta (B.1.617.2) and Alpha (B.1.1.7) variants of concern found there was no significant change in the sensitivity of the tests when identifying either variant. The government-commissioned research involved academics and scientists from Queen Mary, University of London, Public Health England and the Nuffield Department of Medicine, at the University of Oxford. It drew upon real-world performance data from between 1 April and 2 June 2021 for the most commonly used brand of LFD in the UK. Real-world testing data from over 2,000 cases of the Delta variant was used to investigate whether LFD tested positivity rates are significantly lower than PCR positivity rates in locations where prevalence of the Delta variant is high.

As new variants surface, standard laboratory-based surveillance and clinical surveillance in real world settings, covered by research like this, will be crucial to ensuring these rapid tests remain a useful tool in tracking COVID-19.

Asymptomatic testing for SARS-CoV-2 using antigen-detecting lateral flow devices

A second study has analysed the efficacy of rapid tests under different testing conditions and varying patient viral loads by making a statistical comparison of a number of different LFD user evaluation studies. The government-commissioned research drew on seven different user evaluation studies that included over 1,500 people with positive LFD results from a total population of over 18,000, and two professional use studies from PHE.

Research found LFD testing is effective at identifying people with the virus when they are at their most infectious, and that these tests are effective when used regularly, with only a small change in effectiveness between experienced test users like professional laboratory scientists or nurses and inexperienced test users. For nasal-only swabs, the sensitivity at high viral loads was the same (88%) whether administered by experienced or inexperienced users.

In November 2020 the government launched a community testing pilot in Liverpool and the evaluation of the study has now been published. Drawing on testing data from 48 testing sites across the city from when the pilot first began, the evaluation study shows there was a clear public health value to mass testing campaigns. During the pilot, widespread community testing of asymptomatic individuals resulted in an estimated increase in case detection of 18% when compared to other areas where the pilot was not running. There was also a 21% reduction in cases up until mid-December when compared with other areas, after which time the surge in the Alpha (B.1.1.7) variant made meaningful comparisons difficult.

Regular, rapid testing is already well established for NHS and care home staff, and the government has also made twice-weekly testing using LFDs available to all. Anyone with symptoms should book a free test online or by phone. People can then go to a testing site or have a kit sent to their home. For those with no symptoms, they should visit their local authority’s website for more information.