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Research and analysis

# Liverpool coronavirus (COVID-19) community testing pilot: full evaluation report summary

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**Applies to England**

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# The pilot

On 6 November 2020, Liverpool City Council, NHS Test and Trace, NHS Liverpool Clinical Commissioning Group, Cheshire & Merseyside Health & Care Partnership and the University of Liverpool embarked on a national pilot of community open-access testing for the COVID-19 virus – available to people without symptoms in addition to testing services for those with symptoms. Testing was available to everyone living or working in the City of Liverpool.

The purpose of the pilot was to reduce or contain transmission of the virus while tackling the mounting harms to health, social and economic wellbeing from COVID-19 restrictions.

## This report

This is the full report from an evaluation led by the University of Liverpool into the Liverpool COVID-19 community testing pilot. The evaluation was invited by the joint local and national command of the pilot and sponsored by the Department of Health and Social Care (DHSC).

The full evaluation, the [Liverpool Community Testing Report](https://www.liverpool.ac.uk/coronavirus/research-and-analysis/covid-smart-pilot/) (<https://www.liverpool.ac.uk/coronavirus/research-and-analysis/covid-smart-pilot/>), has been published on the University of Liverpool website.

This report extends an interim report published on the [University of Liverpool website on 23 December 2020](https://www.liverpool.ac.uk/coronavirus/research-and-analysis/covid-smart-pilot/) (<https://www.liverpool.ac.uk/coronavirus/research-and-analysis/covid-smart-pilot/>) and summarised on [GOV.UK on 14 January 2021](https://www.gov.uk/government/publications/liverpool-covid-19-community-testing-pilot-interim-evaluation-report-summary/liverpool-covid-19-community-testing-pilot-interim-evaluation-report-summary) (<https://www.gov.uk/government/publications/liverpool-covid-19-community-testing-pilot-interim-evaluation-report-summary/liverpool-covid-19-community-testing-pilot-interim-evaluation-report-summary>).

The report evaluates the data on the biological, behavioural and systems aspects of the pilot and its early public health impacts. It presents findings to help policymakers with community approaches to COVID-19 testing.

The report was led by the University of Liverpool, alongside researchers from NHS Test and Trace, Joint Biosecurity Centre, Public Health England, and Office for National Statistics.

## Main findings

The pilot team developed a SMART (systematic, meaningful, asymptomatic and agile, repeated testing) approach. The targets were:

- test-to-protect (vulnerable individuals, settings and services)
- test-to-release (sooner from quarantine, when appropriate and combined with other measures)
- test-to-enable (safer return to key activities for social fabric and the economy, when appropriate and combined with other measures)

The evaluation found that a low-cost, rapid, no-lab test of likely infectiousness saves time and extends the reach of health protection measures. The data showed that lateral flow rapid antigen testing meets this need when coordinated by an effective local public health service.

The end-to-end testing service was found valuable and has been continued beyond the pilot as a core part of Liverpool's Covid-19 response.

## **More than half of the population took up asymptomatic testing but socio-economic inequalities were a challenge**

Between 6 November 2020 and 30 April 2021, 283,338 (57%) Liverpool residents took a test using the Innova SARS-CoV-2 antigen rapid lateral flow test (LFT). Of these, 47% had more than one test (27% of residents). In the same period, 152,609 residents took a polymerase chain reaction (PCR) test either because they had symptoms or to confirm a positive asymptomatic LFT result.

- 6,300 individuals declaring no symptoms tested positive by LFT (case positivity 2.1%)
- 22,567 individuals declaring symptoms tested positive by PCR (case positivity 14.8%)

Socio-economic inequalities were a substantial challenge. Test uptake was lower and infection rates were higher in deprived areas, in areas with fewer digital resources or lower digital literacy, and among non-white ethnic groups. Fear of income loss from self-isolation was a key barrier to testing.

## **The pilot led to an estimated 21% reduction in cases up to mid-December**

The estimated impacts (with 95% confidence intervals) of Liverpool's community testing compared with other areas were:

- 18% (7% to 29%) increase in case detection versus control areas
- 21% (12% to 27%) reduction in cases up to mid-December 2020 (after which the Kent variant surge made it difficult to compare areas) versus control areas
- pessimistic model suggests 850 (500 to 1,350) infections were prevented
- optimistic model suggests 6,600 (4,840 to 9,070) infections were prevented
- small but non-significant reduction in hospital admissions

## **Lateral flow tests worked as expected**

The Innova lateral flow device used in the pilot performed as expected, identifying most COVID-19 cases without classical symptoms but with high viral load – those likely to be the most infectious.

## **Civic pride, local co-ordination of services and effective information sharing contributed to the success of the pilot**

There was strong public awareness of, and a largely positive attitude toward, community testing, motivated by shared identity, civic pride and a wish to protect others. Misinformation, particularly over test performance, was a substantial problem needing intensive local communications to address.

Multiple national testing initiatives in different contexts from care homes to schools and workplaces made communication too complex and would have been better integrated into a community testing with integrated support from the local authority. The [CIPHA \(http://www.cipha.nhs.uk\)](http://www.cipha.nhs.uk) (Combined Intelligence for Population Health Action) integrated data and shared analytics system was essential for coordinating actions between local partners. The role of the director of public health was vital to effective coordination of services and engaging the public.



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