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Covid-19: Prevalence has quadrupled in England since start of September, study shows

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Researchers have estimated that one in 200 people in England are currently infected with SARS-CoV-2, a near fourfold increase from a month ago.

One of the preliminary findings from the fifth round of the government funded Real-Time Assessment of Community Transmission (REACT-1) study is that between 18 and 26 September 2020 the prevalence of SARS-CoV-2 in England increased in all regions and age groups. There was a sevenfold increase in the number of infections in people aged 65 or older when compared with the previous round of testing between 22 August and 7 September.

The study, published as a preprint by Imperial College London,¹ analysed 84 610 samples taken over nine days (18-26 September) from people who had carried out polymerase chain reaction swab tests for SARS-CoV-2 themselves at home. Participants also submitted questionnaire data online.

The data, which have not been peer reviewed, suggest that the R number has reduced from 1.7 (95% confidence interval 1.4 to 2.0) in the previous round to 1.06 (0.74 to 1.46) and that the doubling time for the number of infections has lengthened to 10.6 (9.4 to 12) days from 7.7 (5.5 to 12.7). But the authors noted the large margin for error in these estimates, saying, "Although there is evidence of a recent deceleration in the epidemic, current levels of prevalence will inevitably result in additional hospitalisations and mortality in coming weeks."

Paul Elliott, director of the REACT programme and professor of epidemiology and public health medicine at Imperial College London, told a Science Media Centre briefing on 1 October: "It is really, really important that we redouble our efforts. We need to turn this virus downwards."

The paper estimates that between 18 and 26 September the proportion of the population infected with the virus was around one in 200 people (0.55% (0.47% to 0.64%)). This had increased from around one in 800, or 0.13% (0.097% to 0.156%), in the previous round of testing.²

Prevalence is highest in people aged 18-24 (0.96% (0.68% to 1.36%)). But the authors said they were concerned that the infection rate in people over 65 had risen from 0.04% (0.03% to 0.07%) to 0.29% (0.23% to 0.37%) in the latest round of testing.

Steven Riley, professor of infectious disease dynamics at Imperial College London and coauthor of the study, told the briefing that the number of infections among over 65s was crucial, given recent debate about alternative policy options. "The key point for me is that prevalence has to come down now," he said. "We did detect a slowdown [in R], but it actually has

to go negative for us to avoid substantial numbers of hospitalisations and deaths."

Regionally, the north west has the highest prevalence, with nearly one in 100 people infected (0.86% (0.69% to 1.06%)). Prevalence in London rose fivefold from 0.10% (0.06% to 0.17%) in the period 22 August to 7 September to 0.49% (0.36% to 0.68%) in 18-26 September.

The authors said they could not identify from their data which measures may have slowed the overall rate of rise. But Riley said that focusing on better and faster testing and isolation of people with symptoms, quarantining, identifying and quickly suppressing large outbreaks, and improving contact tracing could all help reduce the prevalence, alongside social distancing and covid safe behaviour.

David Strain, co-chair of the BMA's medical academic staff committee, said the results "should not be used in any way to suggest that the threat from the virus is diminishing."

"We cannot afford to be complacent," he said. "Doing so could easily see us slipping back to the same situation we saw earlier in the year and risk thousands more people losing their lives."

The REACT-1 study data are consistent with latest figures from NHS Test and Trace, which this week reported a 61% increase in people testing positive for covid-19 from the previous week and identified more than four times as many positive cases in the most recent week than at the end of August.³

Only 71% of people who were transferred to NHS Test and Trace were reached in the week 17-23 September, down from 81% the previous week, while 72% of close contacts were reached and asked to self-isolate, down from 76% the previous week and below the 80% target.

1 Riley S, Ainslie KEC, Eales O, et al. High prevalence of SARS-CoV-2 swab positivity in England during September 2020: interim report of round 5 of REACT-1 study. Imperial College London. [https://www.imperial.ac.uk/media/imperial-college/institute-of-global-health-innovation/REACT1_12345_Interim-\(1\).pdf](https://www.imperial.ac.uk/media/imperial-college/institute-of-global-health-innovation/REACT1_12345_Interim-(1).pdf).

2 Riley S, Ainslie KEC, Eales O, et al. Resurgence of SARS-CoV-2 in England: detection by community antigen surveillance. Imperial College London. <https://www.imperial.ac.uk/media/imperial-college/institute-of-global-health-innovation/public/Resurgence-of-SARS-CoV-2-in-England-detection-by-community-antigen-surveillance.pdf>.

3 Department of Health and Social Care. NHS Test and Trace (England) and coronavirus testing (UK) statistics: 17 September to 23 September 2020. 1 Oct 2020. <https://www.gov.uk/government/publications/nhs-test-and-trace-england-and-coronavirus-testing-uk-statistics-17-september-to-23-september-2020>.

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