

# Covid and the Use and Abuse of Statistics

**Sir David Norgrove**

Chair, UK Statistics Authority



# Our statistical system



Public Administration and  
Constitutional Affairs Committee



UK Statistics  
Authority



Chair  
*Sir David Norgrove*



National Statistician  
*Prof Sir Ian Diamond*



Office for  
Statistics Regulation



Director General for  
Regulation  
*Ed Humpherson*



Office for  
National Statistics



Government  
Statistical Service



Heads of Profession for Statistics  
in government departments



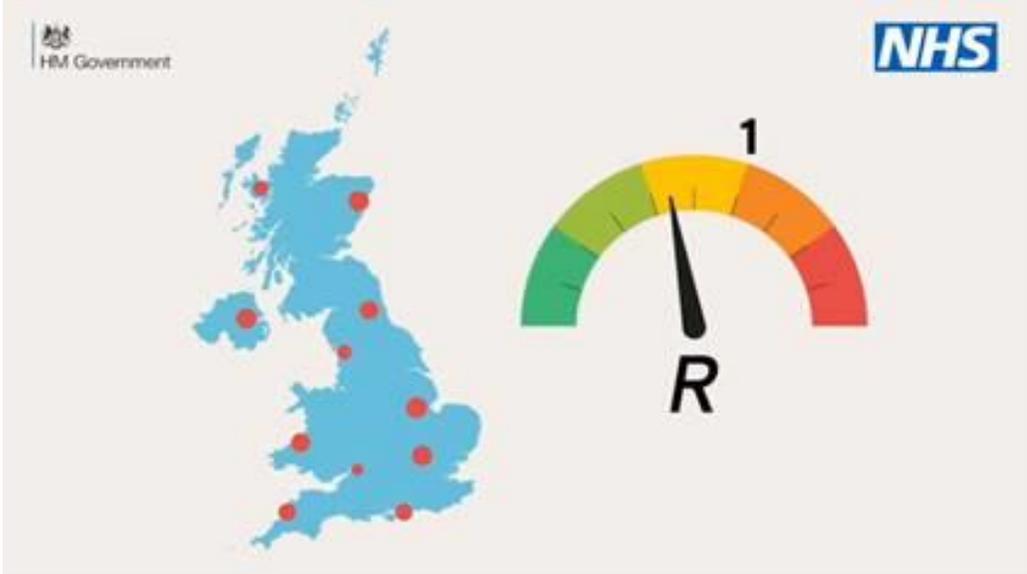
UK Statistics  
Authority

# No. 10 National Address, 23 March 2020

“You must stay at home”



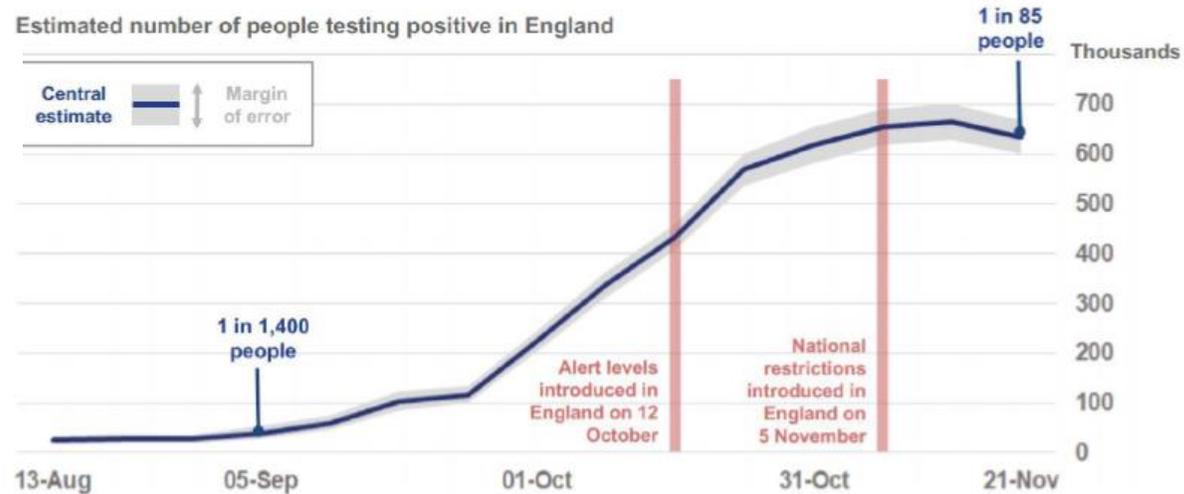
COVID Alert Level =  $R$  (rate of infection) + Number of infections



# Presentation of data: infections

The number of people testing positive for COVID-19 increased after the summer. There are signs it is now levelling off.

Source:  
Number 10 Press Conference,  
early 2021



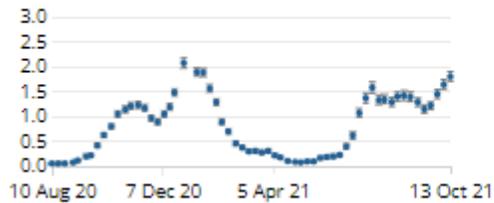
Source: Office for National Statistics – Coronavirus (COVID-19) Infection Survey.  
These estimates refer to infections reported in the community in private households. They exclude infections reported in hospitals, care homes or other institutional settings.  
Further details on data sources can be found here: <https://www.gov.uk/government/collections/slides-and-datasets-to-accompany-coronavirus-press-conferences>

# Better data on infections

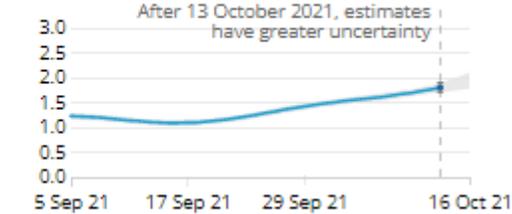
## Coronavirus Infection Survey: positivity rate

### England

Percentage testing positive for COVID-19

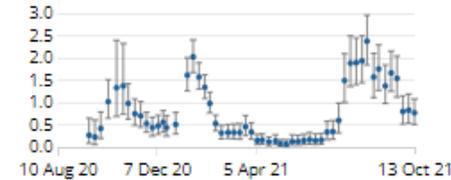


Percentage testing positive for COVID-19

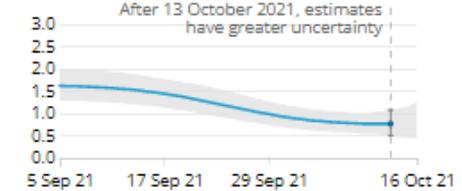


### Northern Ireland

Percentage testing positive for COVID-19

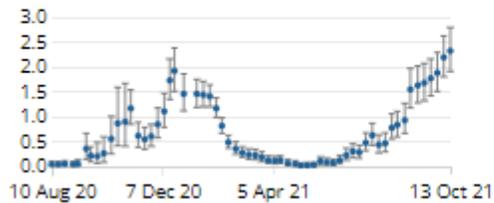


Percentage testing positive for COVID-19

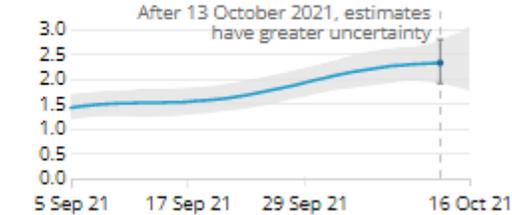


### Wales

Percentage testing positive for COVID-19

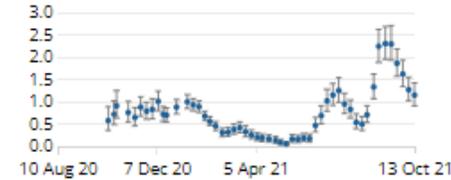


Percentage testing positive for COVID-19

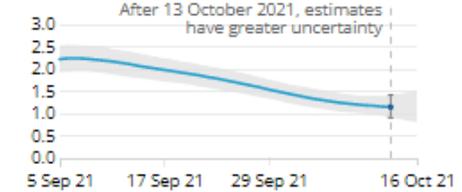


### Scotland

Percentage testing positive for COVID-19



Percentage testing positive for COVID-19

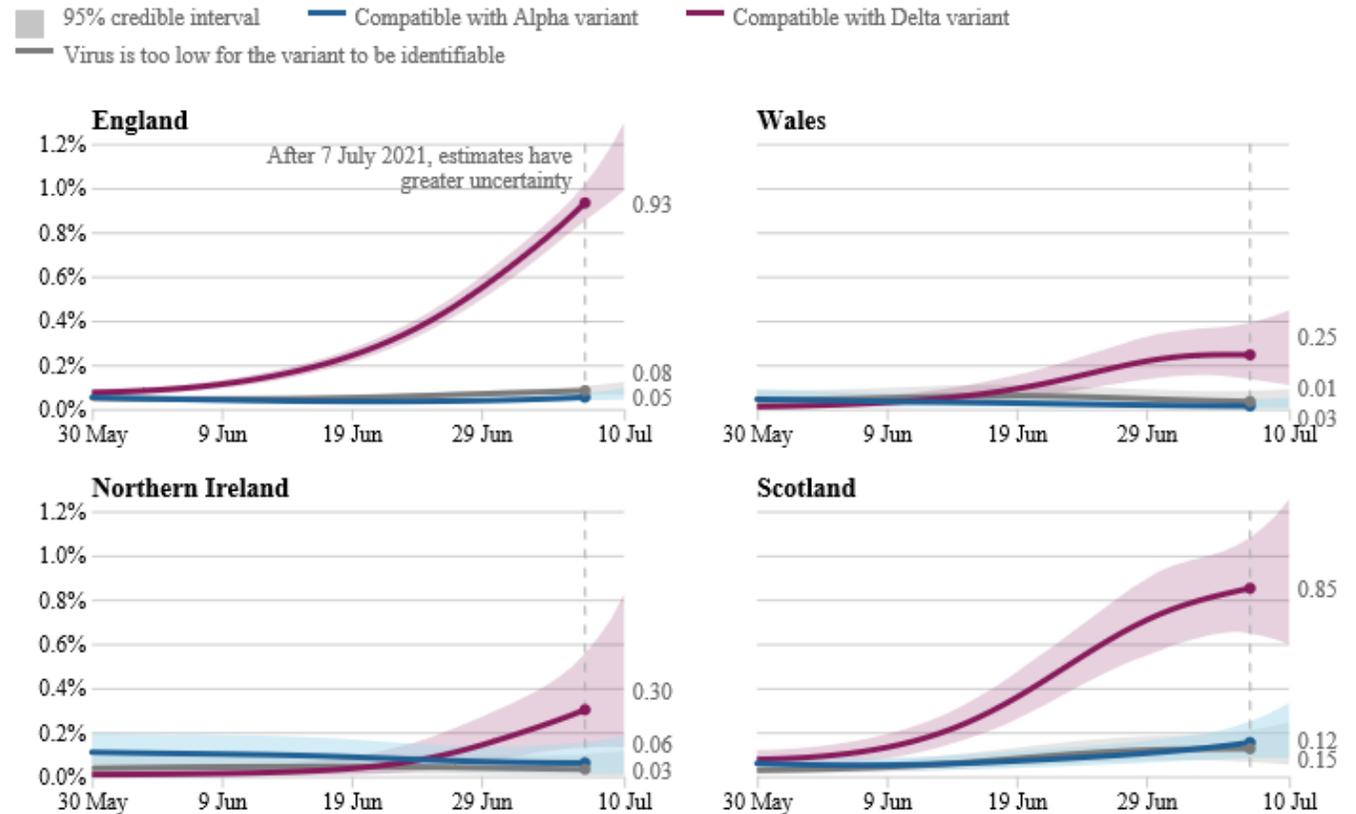


Source: Office for National Statistics – Coronavirus (COVID-19) Infection Survey

# Better data on infections

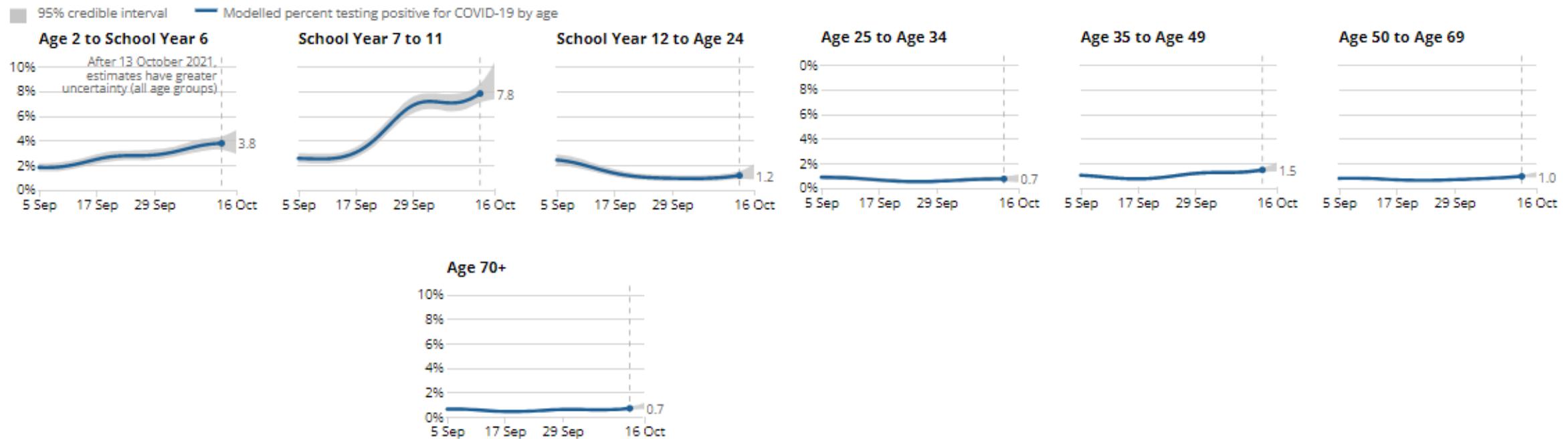
## Coronavirus Infection Survey (continued): positivity rate by variant

Modelled percentage of cases compatible with the Alpha variant, compatible with the Delta variant and where the virus was too low for the variant to be identifiable, based on nose and throat swabs, daily, UK:



# Better data on infections

Estimated daily percentage of the population testing positive for coronavirus (COVID-19) on nose and throat swabs by age group, England, 5 September to 16 October 2021



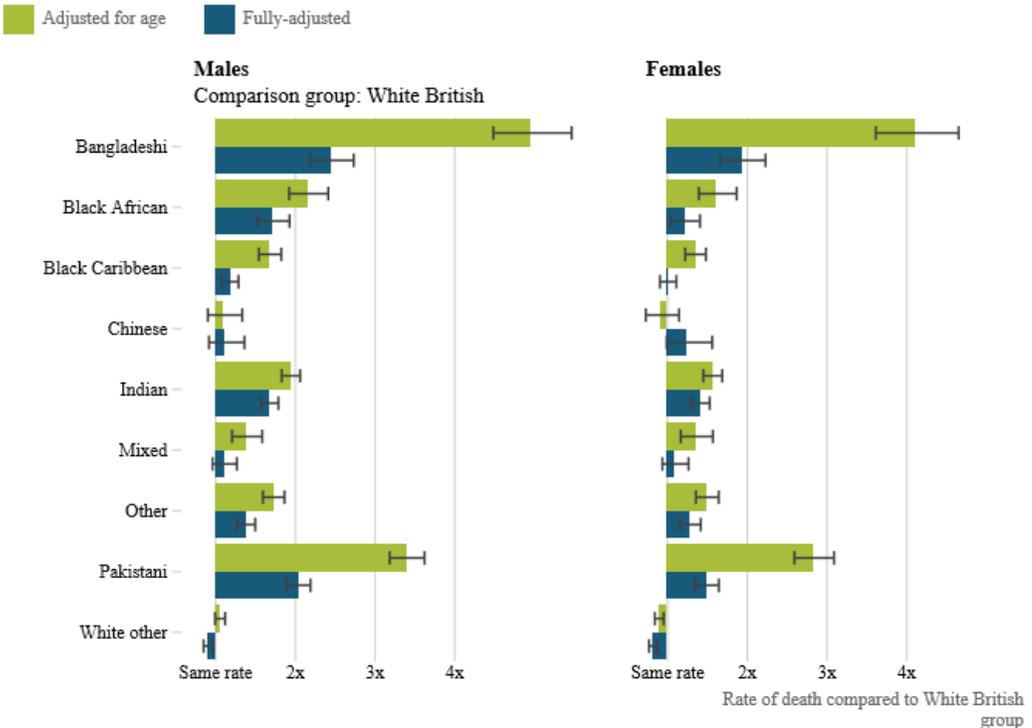
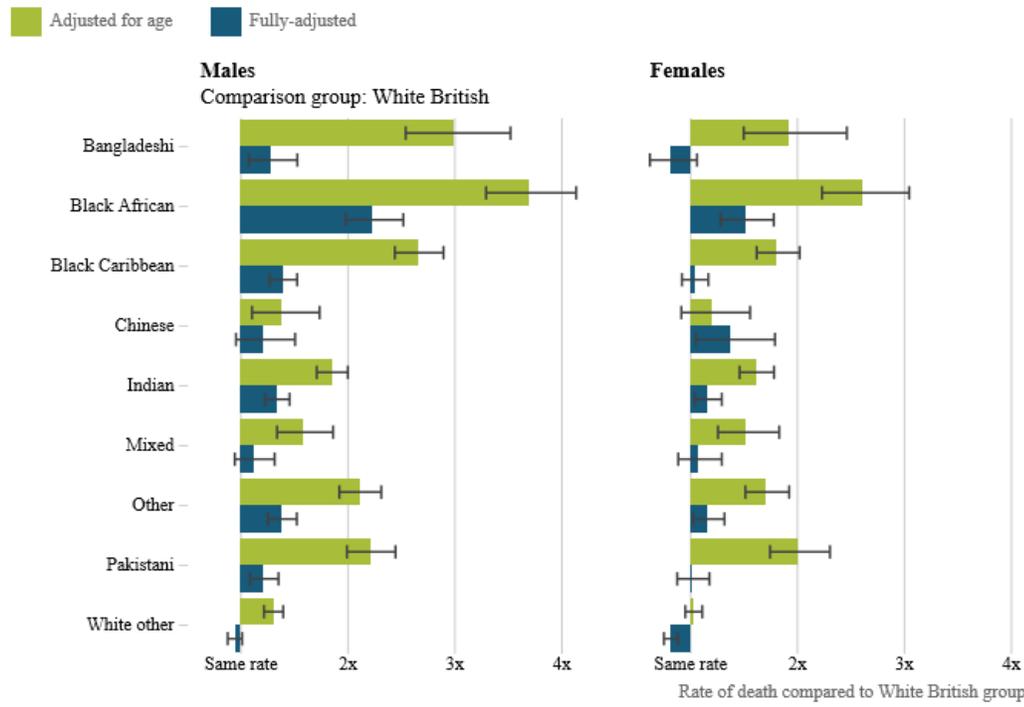
Source: Office for National Statistics – Coronavirus (COVID-19) Infection Survey

# New insights into Covid disparities

## Hazard ratios of death involving Covid-19 by ethnic group and sex

England, first wave: 24 Jan 2020 to 11 Sept 2020

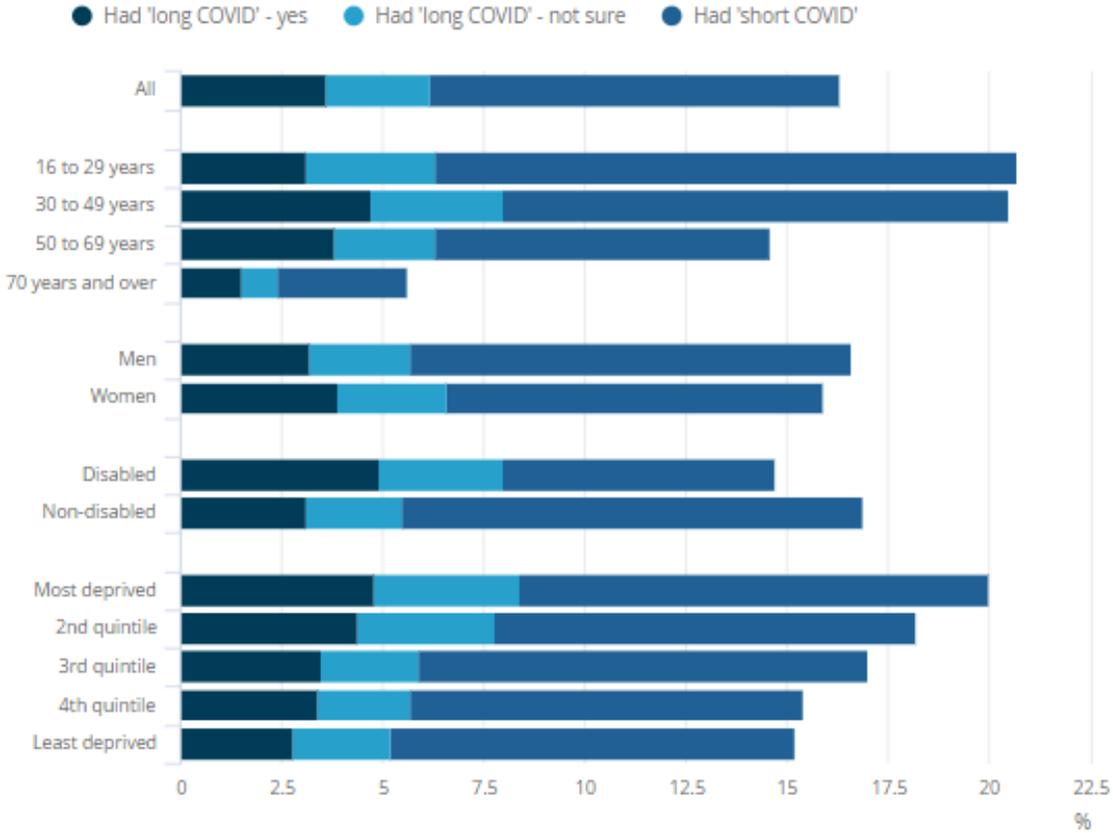
England, second wave: 12 Sept 2020 to 31 Mar 2021



# Learning about Long Covid

**Figure 1: Reporting experiencing long COVID was higher among those living in the most deprived areas of England**

Adults, Great Britain, 7 April to 13 June 2021



# Covid and the Use and Abuse of Statistics

**Sir David Norgrove**

Chair, UK Statistics Authority



# Testing: our intervention

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Chair of the UK Statistics Authority, Sir David Norgrove

Rt Hon Matt Hancock MP  
 Secretary of State for Health and Social Care  
 (via email)

11 May 2020

Dear Secretary of State,

On 2 April the Government announced its goal to carry out 100,000 COVID-19 tests a day by the end of April and on 6 May announced its ambition for 200,000 tests a day by the end of May<sup>1</sup>. There has been widespread media coverage of the Government's progress.

I know you are a strong supporter of the proper use of statistics and data and that you will understand that for the sake of clarity and confidence it is important that the target and its context should be set out.

It should be clear whether the target is intended to reflect:

- testing capacity;
- tests that have been administered;
- test results received; or
- the number of people tested.

Each of these is of interest of course, whether or not they are targets.

In reporting against this target, sole focus on the total national number of tests could mask helpful operational detail. The way the daily tests data<sup>2</sup> have been broken down by the different 'pillars' to illustrate the changing purposes of the programme is useful. Further breakdowns would provide more context, for example through showing the levels of testing by geographical area.

The daily data for the UK are currently reported on the gov.uk coronavirus page<sup>3</sup> and a time series is available through the slides and datasets to accompany the daily coronavirus press conferences<sup>4</sup>. However, there is limited detail about the nature and types of testing and it is hard to navigate to the best source of information. It would support trustworthiness for the testing data to be more straightforward to find, with detailed breakdowns and richer commentary.

The data around COVID-19 are inevitably complex, which makes it more important that publications should meet the standards set by the Code of Practice for Statistics. We urge Government to update the COVID-19 national testing strategy to show more clearly how targets are being defined, measured and reported. Measurements will undoubtedly need to change and develop as we move into new phases for tackling the pandemic.

Yours sincerely,  
  
 Sir David Norgrove

<sup>1</sup> Statement 6 May 2020  
<sup>2</sup> gov.uk: Number of coronavirus (COVID-19) cases and risk in the UK  
<sup>3</sup> gov.uk: Number of coronavirus (COVID-19) tests and risk in the UK and gov.uk: Slides, datasets and transcripts to accompany coronavirus press conferences

**Department of Health & Social Care**  
 From the Rt Hon Matt Hancock MP  
 Secretary of State for Health and Social Care  
 39 Victoria Street  
 London  
 SW1H 0EU  
 020 7210 4850

POC\_1229246

Sir David Norgrove  
 Chair, UK Statistics Authority,  
 1 Drummond Gate,  
 London  
 SW1V 2QQ

27 May 2020

Dear Sir David,

Thank you for your letter of 11<sup>th</sup> May setting out the importance of clear, open and transparent reporting of statistics on COVID-19 tests. I strongly support this, and more broadly the role that high-quality statistics and data play in informing public debate and driving decision making, and particularly so as we work to address the COVID-19 situation. As you know I have authorised publication of the most full and complete data about our Covid-19 response.

I welcome your positive comments about the information we publish about testing each day. This is a complex and growing programme and our approach to publishing the statistics has developed rapidly. Daily updates are presented on gov.uk across many different aspects of testing. I now want to go further, and your suggestions for improvement are in line with developments I have already set in train.

Yours ever,  
  
 MATT HANCOCK

We are implementing the following:

- (i) We are today publishing a clear definition of how our target of capacity to perform 200,000 tests a day by the end of May will be measured and reported. Capacity will be measured across testing pillars 1, 2, 3 and 4 by asking laboratories each day to set out how many tests they can provide. We will publish today data and commentary on the measure, again on Sunday 31<sup>st</sup> May, and will repeat, initially weekly, thereafter.
- (ii) To simplify the presentation of the daily figures on tests and to make the figures easier to find, we are reducing the volume of detailed technical comment each day but will complement this with a detailed note on methods that will also detail any revisions or updates to the figures. This will explain the various strands of testing and will also set out how each strand is counted and reported.
- (iii) Today we are also publishing a time-series of data, with more detail than our current daily totals, setting out clearly how this has grown over time and making it clear when new strands of testing were added in.

expense of understanding. It is also hard to believe the statistics work to support programme itself. The statistics and analysis serve neither purpose well.

To mention just a few issues in relation to the data as currently presented:

- the headline total of tests adds together tests carried out with tests posted out. This distinction is too often elided during the presentation at the daily press conference, where the relevant figure may misleadingly be described simply as the number of tests carried out. There are no data on how many of the tests posted out are in fact then successfully completed. The slides used in the daily press conference do not show the date when the tests were carried out;
- the notes to the daily slides rightly say that some people may be tested more than once and it has been widely reported that swabs carried out simultaneously on a single patient are counted as multiple tests. But it is not clear from the published data

testing statistics still far short of its expected adequacy data on testing are so widely criticised

I also welcome the Department's willingness to Statistics Regulation (OSR) and I know they will their presentation could be improved and gaps addressed. OSR will be happy to help further in any way they can.

It would be useful to develop a published timetable for the changes that need to be made and for the development of the metrics for the vital new programme of Test and Trace.

I do understand the pressures that those concerned have faced and still face. But I am sure you would agree that good evidence, trusted by the public, is essential to success in containing the virus.

Yours sincerely,  
  
 Sir David Norgrove

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UK parliament: voting begins as Rees-Mogg motions to end remote participation

**Coronavirus**  
 Statistics watchdog: ministers still misleading public on coronavirus

**BBC NEWS BREAKING**  
 Coronavirus: Testing figures criticism



**FINANCIAL TIMES**

Coronavirus pandemic + Add to myFT

Matt Hancock criticised by regulator over coronavirus testing figures

... numbers 'far from complete and comprehensible', says head of statistics body



**THE FINANCIAL TIMES**  
 TUESDAY OCTOBER 26 2021



Matt Hancock's presentation of key numbers makes "little sense", the UK Statistics Authority said  
 ANDREW PARSONS/EPA

**CORONAVIRUS**  
 Matt Hancock is using test figures as PR, says watchdog

Chris Smyth, Whitehall Editor  
 Tuesday June 02 2020, 12.00pm, The Times



Last updated on Wednesday, 27 October 2021 at 7:36pm

Daily update

Testing

Cases

Healthcare

Vaccinations

Deaths

Interactive maps

About the data

Download data

What's new

Developer's guide

# UK Summary

The official UK government website for data and insights on coronavirus (COVID-19).

See the [simple summary](#) for the UK.

## Vaccinations

### People vaccinated

Up to and including 26 October 2021

Daily – first dose  
41,083

Daily – second dose  
23,031

Daily – booster or third dose  
264,468

Total – first dose  
49,794,120

Total – second dose  
45,605,922

Total – booster or third dose  
6,706,468

[All vaccinations data](#)

Percentage of population aged 12+

86.6%

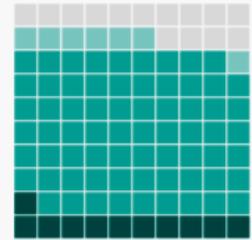
First dose

79.3%

Second dose

11.7%

Booster or third dose



## Cases

### People tested positive

Latest data provided on 27 October 2021

Daily  
43,941

Last 7 days  
307,716 ↓ -12,878 (-4%)

▶ Rate per 100,000 people: 481.5



[All cases data](#)

## Deaths

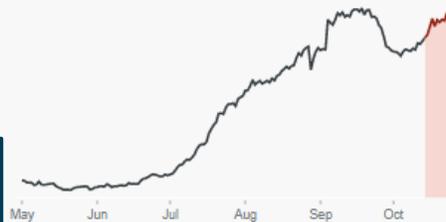
### Deaths within 28 days of positive test

Latest data provided on 27 October 2021

Daily  
207

Last 7 days  
1,010 ↑ 56 (5.9%)

▶ Rate per 100,000 people: 1.3



[All deaths data](#)

## Healthcare

### Patients admitted

Latest data provided on 23 October 2021

Daily  
894

Last 7 days  
6,990 ↑ 882 (14.4%)

[All healthcare data](#)

## Testing

### Virus tests conducted

Latest data provided on 26 October 2021

Daily  
802,547

Last 7 days  
6,141,270 ↓ -292,564 (-4.5%)

[All testing data](#)

Today's dashboard

# Covid and the Use and Abuse of Statistics

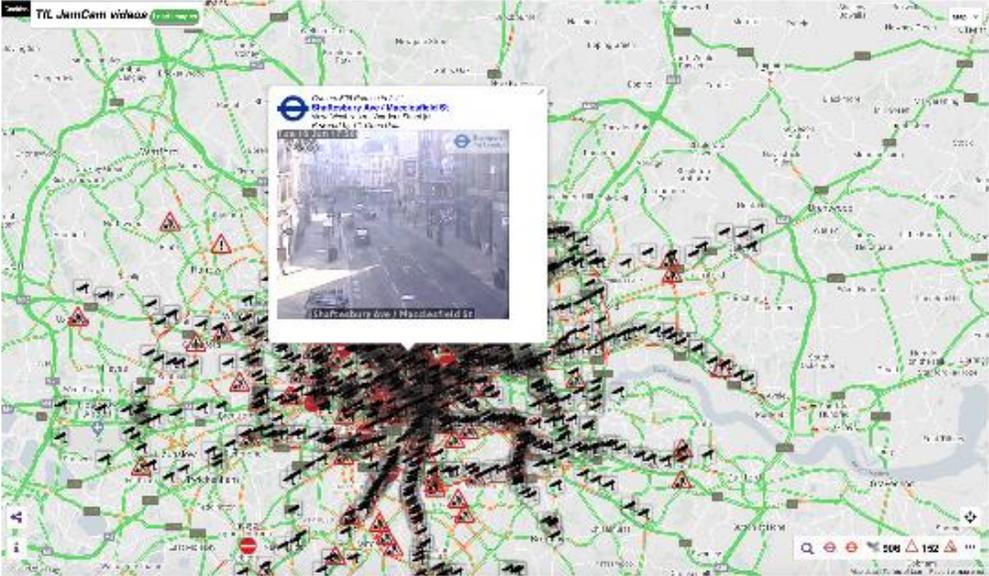
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# Traffic cameras: vehicle and pedestrian activity in London

Vehicle activity in London has reached pre-pandemic levels in the latest month, though remains volatile.



Trends in daily counts of vehicles, pedestrians and cyclists, index 11/03/2020 = 100



# Google Places: mobility

Mobility trends by location within the UK, first month of the pandemic compared to pre-pandemic baseline, %

By April 11th 2020, mobility at retail and recreation venues was down by 84% and was up 23% at residential locations compared to the pre-pandemic baseline.

On July 16th 2021, mobility at retail and recreation venues was down by 13% and is yet to consistently maintain pre-pandemic levels.

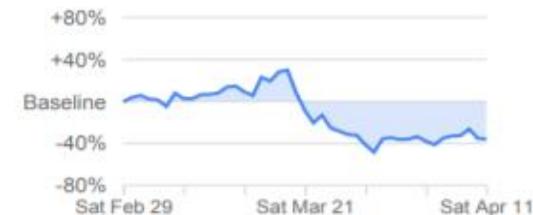
Retail & recreation

-84% compared to baseline



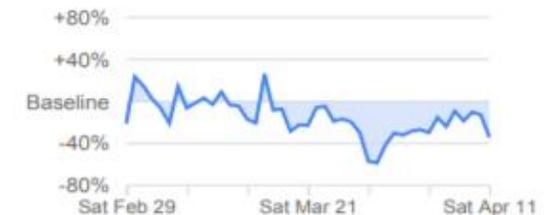
Grocery & pharmacy

-36% compared to baseline



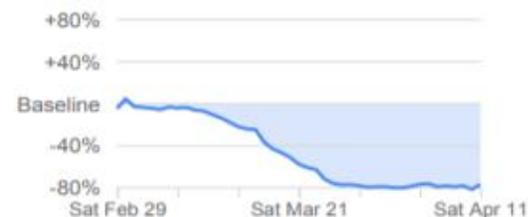
Parks

-34% compared to baseline



Transit stations

-77% compared to baseline



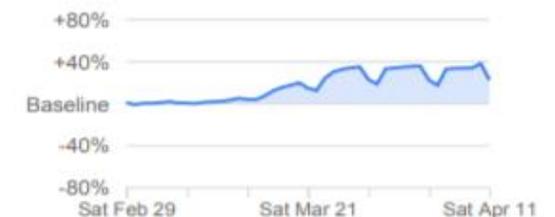
Workplace

-64% compared to baseline



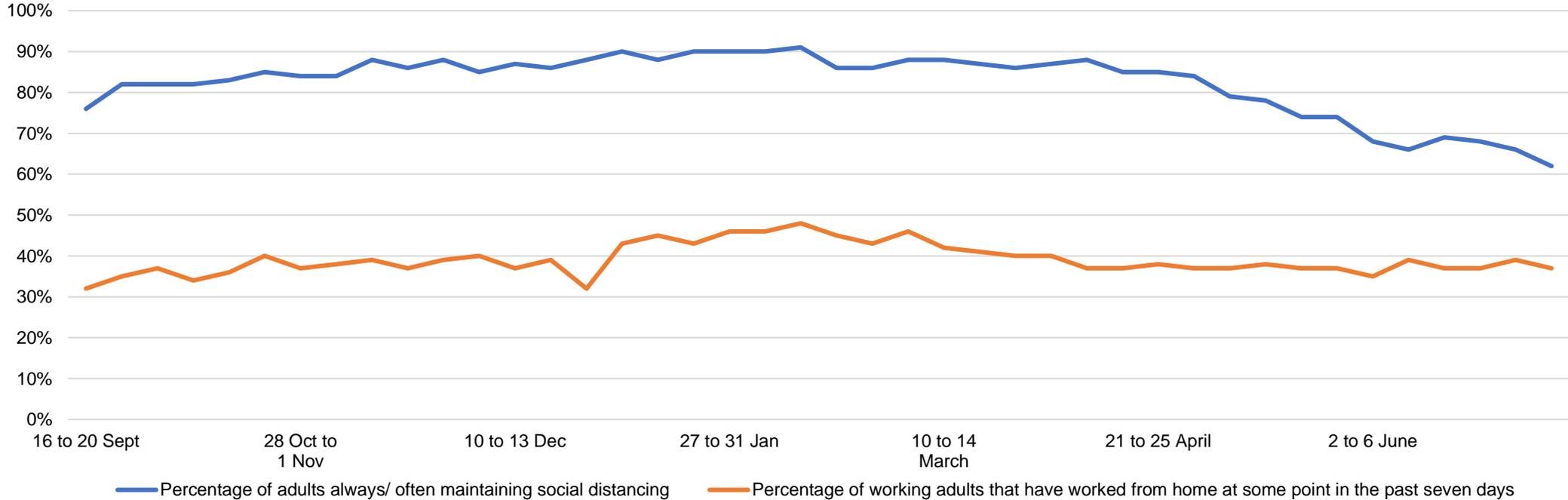
Residential

+23% compared to baseline



# Opinions and Lifestyle Survey: social distancing and working from home

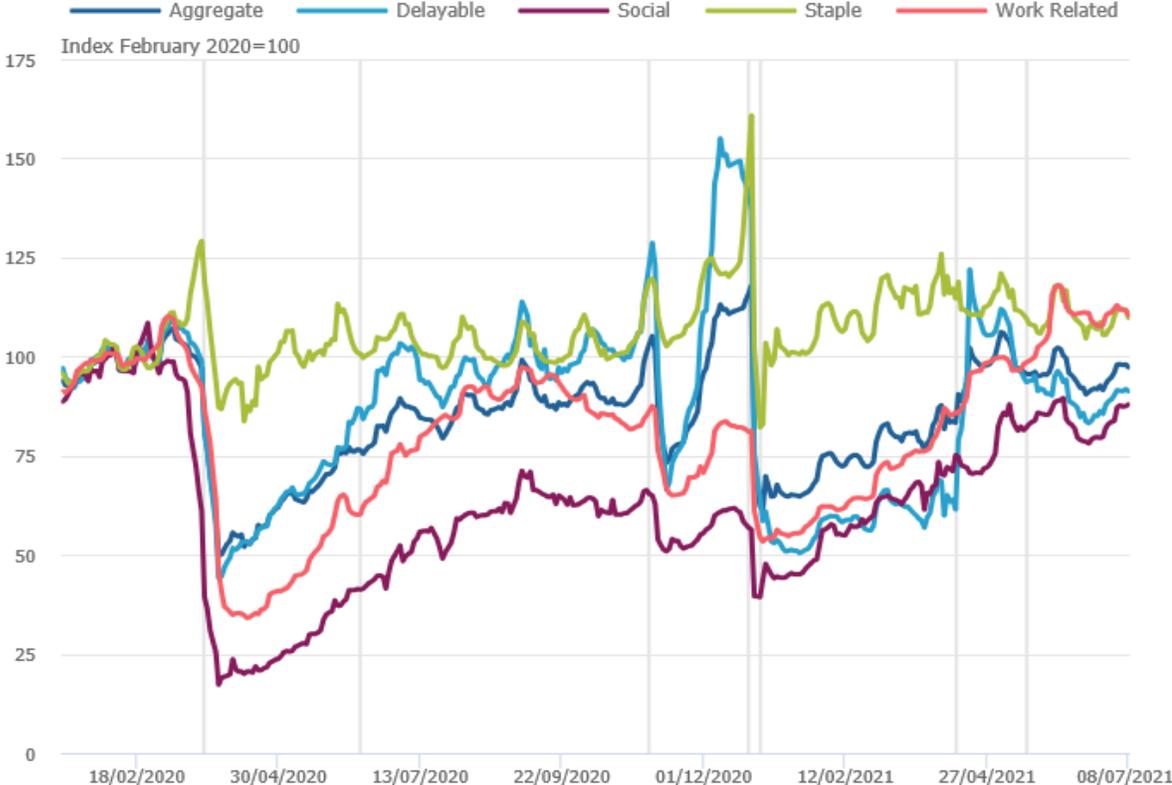
Percentage of adults reporting to maintain social distancing when meeting up with people outside their household or bubble, and percentage of working adults that have worked from home at some point during the last week



# CHAPS: spending on credit and debit cards

In the week to 8 July 2021, the aggregate CHAPS-based indicator of credit and debit card purchases remained broadly similar to the previous week at 97% of its February 2020 average level.

Index February 2020 = 100, a backward looking seven-day rolling average, non-seasonally adjusted, nominal prices

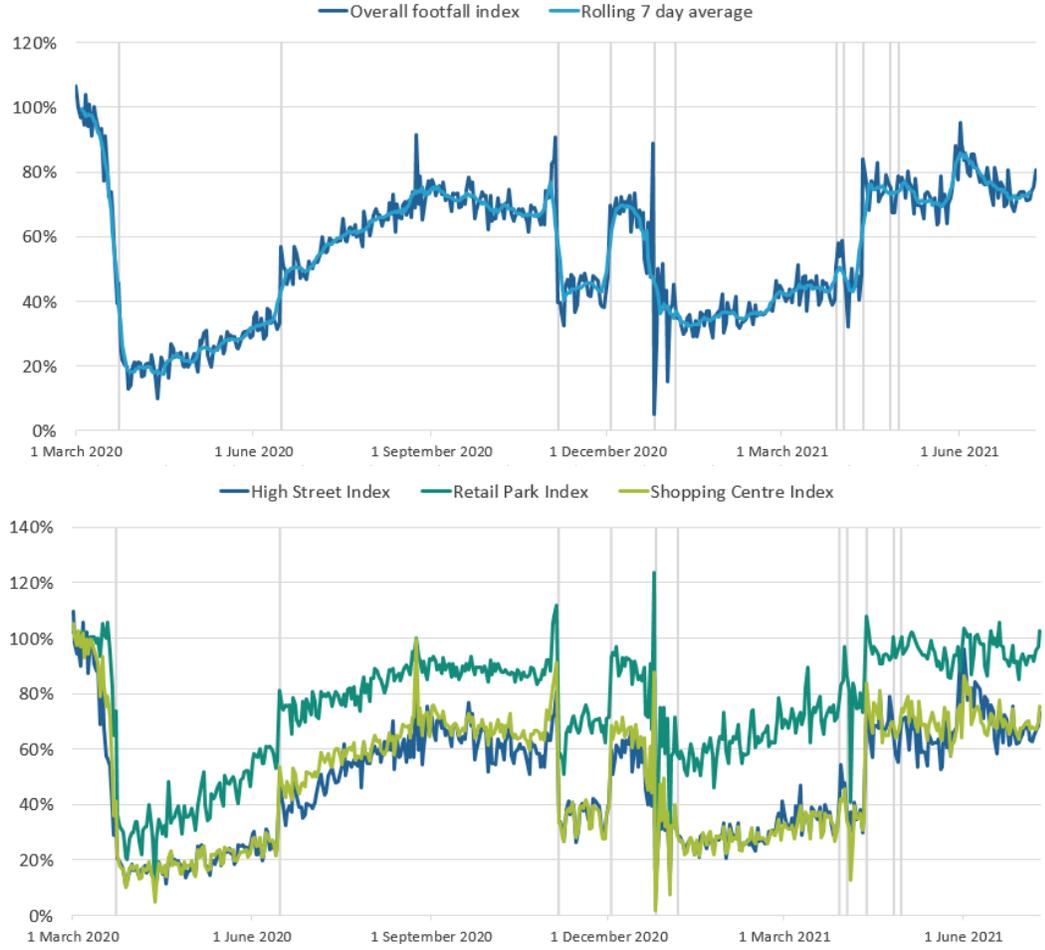


# Springboard: retail footfall

**Volume of overall daily retail footfall, percentage compared with the equivalent day of the equivalent week of 2019**

**In the week to 10 July 2021, UK retail footfall was at 74% of its level in the equivalent week of 2019.**

**The regions with the lowest retail footfall relative to pre-pandemic levels were the East Midlands and Greater London at 73% of the level in the same week of 2019**

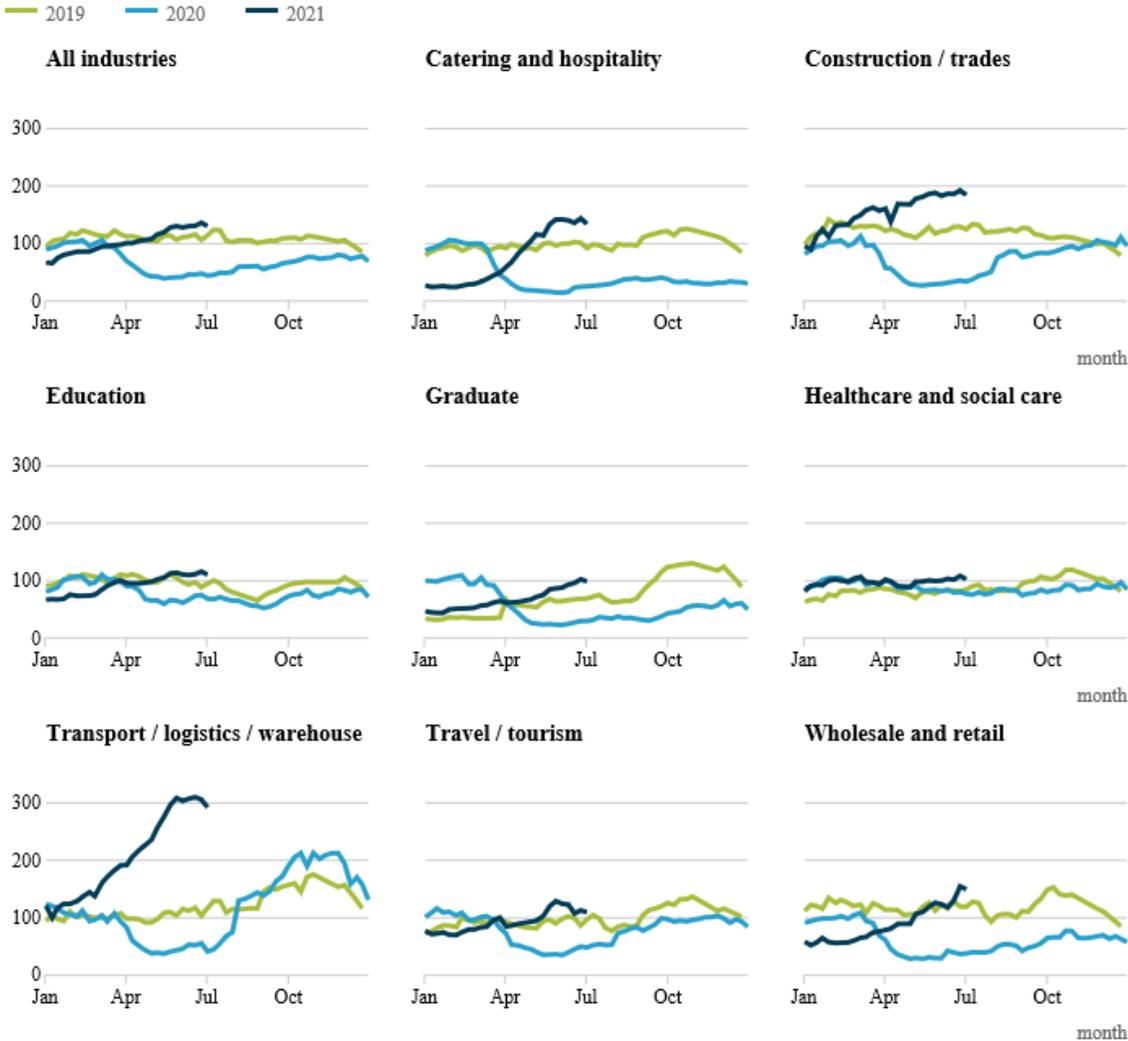


**Source: Springboard and Department for Business, Energy and Industrial Strategy**

# Adzuna: job adverts

Volume of online job adverts by category, index: 100 = February 2020 average, non-seasonally adjusted

On 9 July 2021, the total volume of online job adverts in the UK had decreased by 4% when compared with the previous week (2 July 2021), but remained substantially higher than pre-pandemic levels at 129% of its February 2020 average level.



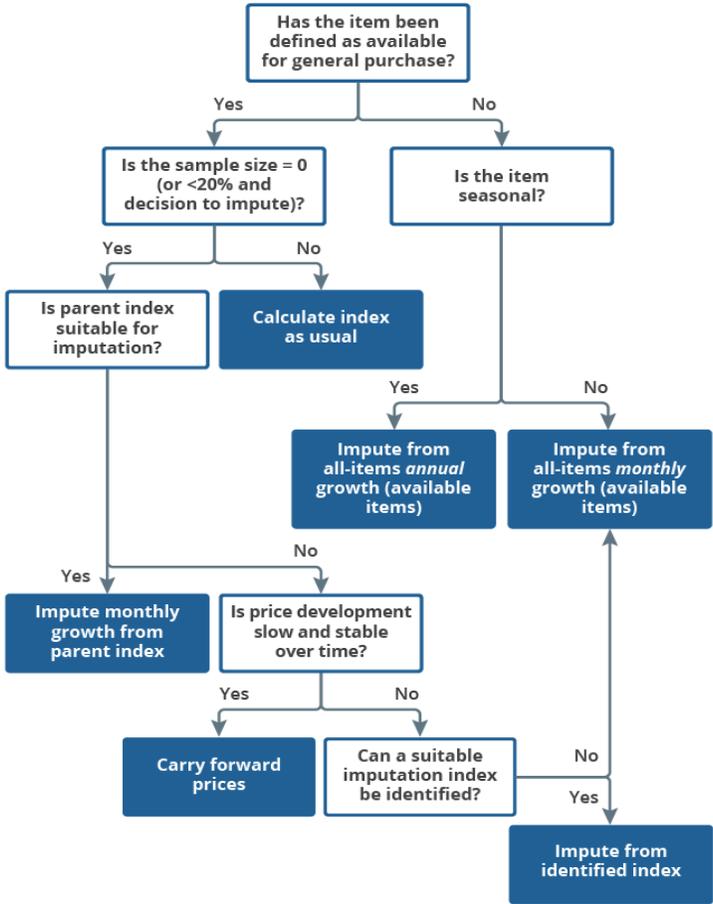
Source: Adzuna

# Other real time indicators published by ONS:

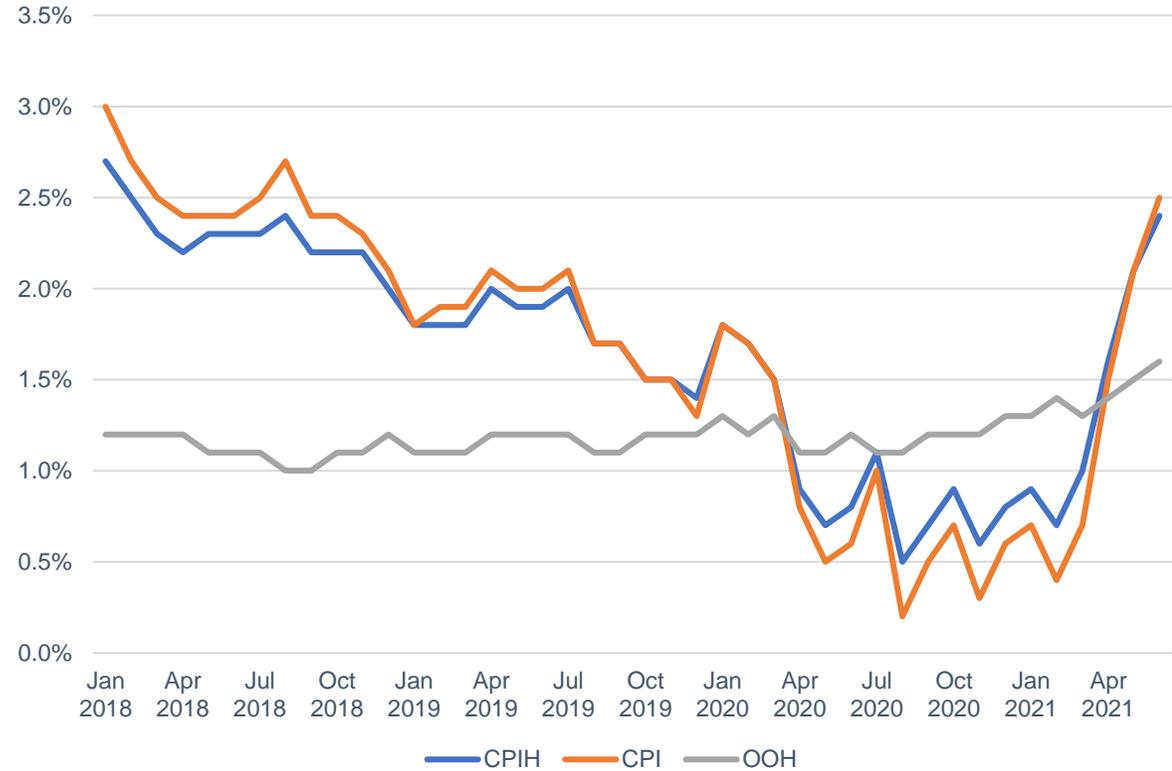
- OpenTable seated diner reservations
  - Tracking the impact on the hospitality industry
- Price change in high demand items
  - Published in the early stages of the pandemic to monitor panic buying
  - Developed using web-scraping
- Number of daily flights
  - Tracking the impact of the easing of restrictions to travel abroad

# Measuring inflation when shops are closed

Decision tree for imputation of items



CPIH, OOH component and CPI 12-month inflation rates, UK



Source: ONS – Impact on inflation

Source: ONS – Consumer price inflation

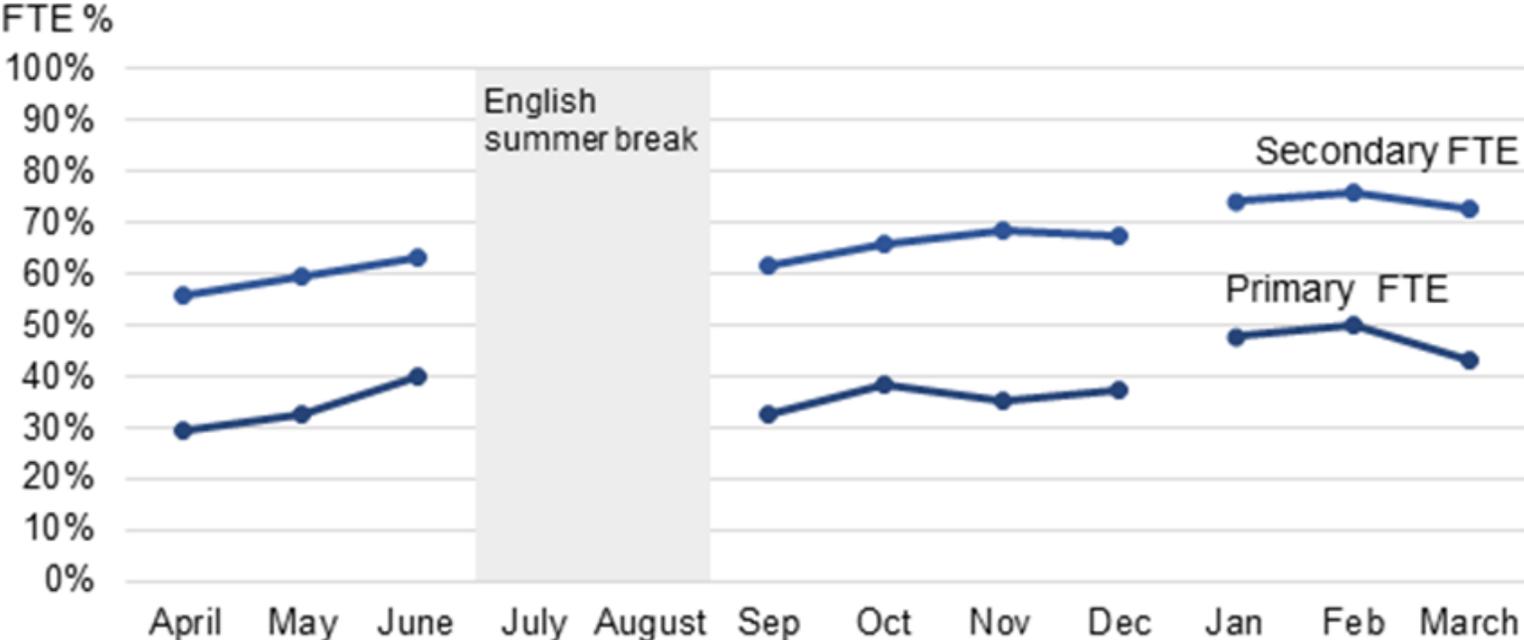
# Alternative data sources: the treatment of non-market output

Full-time equivalency assumptions for remote learners under the three different measurement regimes, England

Calculation of the FTE:

- 1. Teacher input compared to 'normal'
- 2. The proportion of instruction dependent on teachers, not parents

Gathered data on these from teachers, via Teacher Tapp, and used them to inform a FTE discount that we applied to all remote learners.

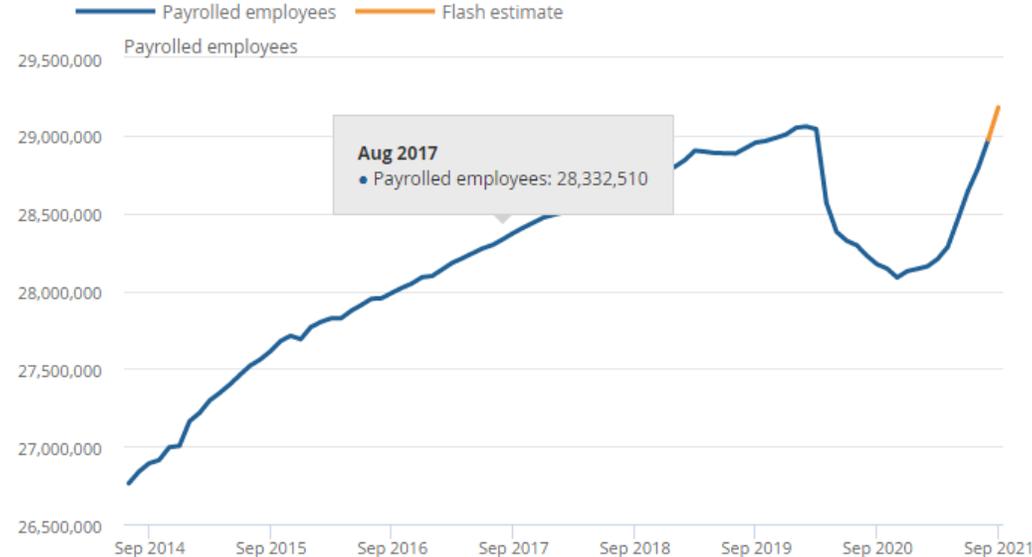


Source: Teacher Tapp and ONS – Impact of measures on UK government education output

# Real-time HMRC and private data

Figure 1: The number of employees declined between February and November 2020, but is now above the pre-coronavirus level

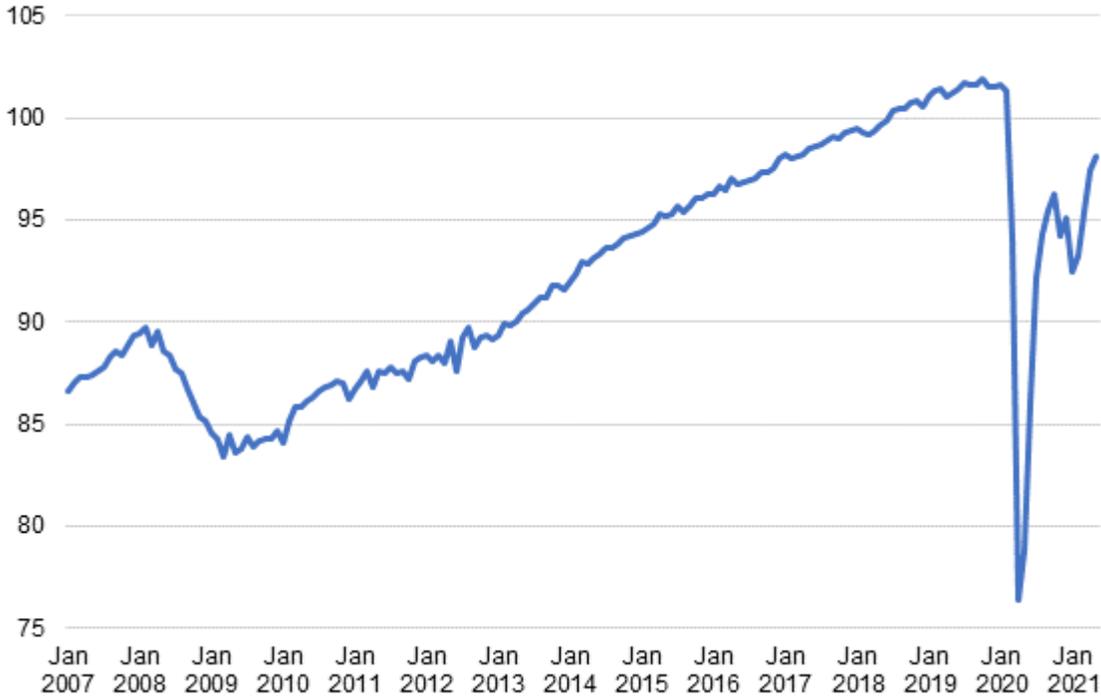
Payrolled employees, seasonally adjusted, UK, July 2014 to September 2021



Source: HM Revenue and Customs - Pay As You Earn Real Time

# National and regional GDP

GDP Monthly index, 2018 = 100



Source: ONS - Monthly GDP

Regional growth in the year to Q1 2020 & 21



Source: ESCOE – regional growth

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# Our biggest ever census

- **Census of England and Wales** – every 10 years since 1801, except for during Second World War.
- Census day: **23 March**
- Census 2021 was the first **digital-first census** and 88.9% of households in England and Wales responded online
- Over **16.5 million visits** to household addresses
- Publication of the first results in late **Spring 2022**



Complete the census  
**Start a legacy**

Wherever you are, from halls to your old bedroom at home, you can influence the next generation of students.

Complete the census now  
[www.census.gov.uk/students](http://www.census.gov.uk/students)

Office for National Statistics

Household Questionnaire England

Complete online  
[www.census.gov.uk](http://www.census.gov.uk)  
Your household access code is:

OR fill in this paper questionnaire:  
If your address is incorrect or missing, please enter your correct address below:

Declaration  
This questionnaire has been completed by me.

How to complete your census

- 1 Read this letter containing your household access code.
- 2 Go to [www.census.gov.uk](http://www.census.gov.uk), select "Start census" and enter your household access code.

**A Covid snapshot: 28m UK households to take part in census unlike any other**

Paper first households | Paper first responded online | Digital first responded online

Select an area

0 6 16 30 50 73 per cent

Newcastle upon Tyne, Leeds, Manchester, Birmingham, Cardiff, London, Dublin, Limerick, Cork

answers on work and health in Northern Ireland  
updates  
coverage

# END

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