
Ed Humpherson, Director General for Regulation

Iain Bell
Deputy National Statistician and Director General for Population and Public Policy
Office for National Statistics
(by email)

17 March 2021

Dear Iain

COVID-19 Infection Survey Statistics

As you are aware, we recently undertook a review of statistics from the ONS COVID-19 Infection Survey. A summary of our review, findings and recommendations is provided below, and set out in more detail in the annex to this letter.

Background

In May 2020 we carried out a [rapid review](#) of the first statistics from the ONS COVID-19 Infection Survey. We endorsed the approach taken by ONS and partners to deliver timely statistics about a rapidly evolving national emergency – in particular, we welcomed ONS's agility in launching and developing the survey, its commitment to continually improve and evolve the statistics, and the ongoing engagement with devolved administrations to extend the survey UK-wide. We asked that, as the survey and statistics continued to be developed, ONS carefully considered how to communicate the statistics and technical terms to a range of users. We noted that maintaining good response rates would be essential to presenting robust results.

Since our initial review, the COVID-19 Infection Survey has increased from a survey of approximately 28,000 people tested per fortnight in England, to over 150,000 people tested per fortnight across the UK. Given the expansion of the survey and its public importance, we agreed with your team that we would undertake a more in-depth review against the [Code of Practice for Statistics](#).

Summary of our findings

ONS should be proud of the contribution the survey has made to government and public understanding of the pandemic. We consider that ONS has provided clear and relevant insights for users in its [weekly bulletins](#) and [analysis articles](#). We are impressed by the

strong working relationships that ONS has developed with its survey provider and academic partners, which have supported the effective scale-up of the survey across the UK and facilitated knowledge sharing and expert scrutiny.

We have identified some areas to support further development of these statistics to move towards complying with the highest standards of the Code of Practice – these are described in more detail in the annex. While we recognise the competing priorities that ONS needs to balance, we would like to see a focus on increased transparency and engagement with users. We would also like to see you improve the communication of methods for general and expert users.

We would like to thank all the teams in ONS who engaged with us so positively throughout the review process. The efforts of staff at all levels working under considerable pressure are commendable. We look forward to hearing from you as you continue to develop these statistics and are happy to discuss a more formal assessment or provide further advice in due course.

Yours sincerely

A handwritten signature in black ink, appearing to read 'Ed Humpherson', written in a cursive style.

Ed Humpherson

Director General for Regulation

Annex: OSR review findings and recommendations – ONS COVID-19 Infection Survey statistics

	Findings	Recommendations
<p>Value</p>	<p>This is the largest and only representative survey of COVID-19 infection in the community in the world that follows participants longitudinally over a period of up to 16 months. As such, the statistics provide vital insight into the pandemic for a wide range of users, including government decision-makers, scientists, the media and the public.</p>	
	<p>ONS engages regularly and effectively with a core set of government stakeholders, including devolved administrations, the Department of Health and Social Care, Cabinet Office and No. 10. ONS has a clear process for reviewing, prioritising and responding to user requests and does a good job of balancing the public good of the request with the resource required to meet it. We welcome the high public visibility of ONS statisticians, for example in the media or at academic events.</p> <p>ONS has shown a willingness to engage with a wide range of users. However, occasionally, this engagement could have been more open, particularly when responding to challenge from vocal and well-informed users. While we acknowledge the competing priorities that ONS must balance, inviting and responding to external scrutiny is an important way for ONS to improve its work, its engagement with users and to demonstrate its trustworthiness. We are pleased that ONS has received positive feedback on its recent occupational risk analysis. We encourage ONS to build on the open approach to engagement that it adopted during this analysis.</p>	<p>ONS should continue to openly engage with users, including those with challenge or questions and those who may be able to help shape future developments. A fully open approach will help ONS demonstrate its commitment to user engagement and create opportunities to improve its analysis and outputs.</p>
	<p>The main statistical bulletin and analysis articles are well-presented, with clear and insightful commentary. It is good that ONS is continually improving and developing the main bulletin, in response to user feedback. For instance, the main bulletin now</p>	

	<p>presents data for all four nations alongside each other, allowing users to easily compare trends across the nations. We also welcome that ONS continues to add new and relevant analysis, for example on the number of positive tests that are compatible with new variants.</p>	
	<p>It is good that the infection survey results feature prominently in other ONS COVID-19 outputs, including the Coronavirus (COVID-19) roundup and the Coronavirus (COVID-19) insights tool, and the datasets and methodology articles are signposted clearly throughout the bulletins. However, ONS could enhance the accessibility of the survey results and outputs by giving them greater prominence on the ONS homepage and improving the descriptions of its articles. The article titles are generic and sometimes users could not be expected to know what topics are covered – for example, in the case of the recently published occupational risk analysis.</p>	<p>Given the public interest in these statistics, ONS should consider how it can improve navigation and content descriptions for users, so they can easily find and use the statistics.</p>
<p>Trustworthiness</p>	<p>The survey receives sufficient financial resource and appropriately high prioritisation within ONS. Senior leaders are closely and actively involved in decision-making and there is a strong governance structure, which allows for effective escalation of issues. The Analytical Steering Group, chaired by the Deputy National Statistician and attended by representatives from the devolved administrations and academic partners, has oversight of the methodological approach and proposed changes.</p> <p>However, there is no information in the public domain about:</p> <ul style="list-style-type: none"> • the governance structure • the long-term plans for the survey • who has access to the data prior to publication, and why • plans for future analysis topics 	<p>To increase transparency, ONS should publish summary information about governance arrangements, long-term plans for the survey and who has access to the data in advance of publication.</p> <p>ONS should be open about its plans for upcoming analysis topics – for instance, by alerting users via the analysis articles or social media. This would encourage engagement and feedback from users to help plan and prioritise the analyses.</p>

<p>Quality</p>	<p>ONS uses sound methods for data analysis and estimation and the choice of methods has been supported by expert advice from academic partners. ONS has published a methodology article to accompany its weekly bulletin. This includes useful information about data collection and analysis, as well as links to sources that contain additional technical detail such as the study protocol. ONS clearly explains changes in methods, such as the modelling approach for incidence, and we encourage ONS to continue to do this.</p> <p>The ONS methodology article was last revised in September 2020 despite ongoing changes to data collection and analysis methods, including the expansion of the survey into Northern Ireland and Scotland. We recognise the challenge in clearly communicating up-to-date information about methods to a wide range of user types. However, we consider that there is important information that should be published, such as information about data collection in all nations and technical detail about the calculation of incidence, choice of models and the impact of study design decisions on results (for example the weekly-then-monthly testing regime).</p> <p>We are pleased that ONS has identified updating information about methodology as a required improvement and is currently working towards this.</p>	<p>ONS should improve its published information about methodology and consider how best to communicate this to different types of users. This will allow users to understand and scrutinise the choices made and foster further dialogue with ONS and improvements to methods.</p>
	<p>The scale of this survey is large and complex, and as such requires the work of multiple teams within ONS. These teams work well together and have a good understanding of each other's roles and responsibilities. However, ONS could strengthen its documentation of the end-to-end data process as a means of further reassuring users about the quality of the statistics, and to enable any further opportunities for quality improvement to be readily identified. We are pleased that ONS has recently recruited</p>	<p>Given the survey's complexity and public profile, over time ONS should consider whether it could publish any visualisations, such as process maps, that could help improve users' understanding of how the survey works and the flow of data through the process.</p>

	<p>someone who will be responsible for documenting the current data processing pipeline and identifying areas for improvement.</p>	
	<p>We are impressed by the strong working relationship between ONS and its academic partners, University of Oxford and University of Manchester. ONS has done a commendable job in taking over responsibility for analysis following initial development by academics – this has involved learning from academic partners and developing the skills of ONS staff under incredibly high pressure.</p> <p>Both the partnership with academics and the handover of code provide forms of peer review, as does the ongoing collaboration with the Best Practice and Impact division in ONS. Given the important role the survey plays in informing policy and the public, we are pleased to hear that ONS has an ongoing programme of peer review.</p>	
	<p>We heard about the good working relationship that ONS has with its survey contractor, IQVIA, and how they work together to develop solutions to emerging problems. For example, ONS and IQVIA are currently investigating the use of a self-administered blood test as an alternative to a blood test carried out by a nurse. This will be particularly important given ONS’s ambition to use antibody data to understand the effectiveness of vaccines in reducing infection levels.</p>	<p>ONS should continue to be transparent with users about changes to data collection and the extent to which they impact the interpretation or quality of the data. This will help users understand quality issues and what the survey data can and cannot be used for.</p>
	<p>ONS and its academic partners carry out extensive quality assurance in producing these statistics, including triangulation with other COVID-19 data sources such as test and trace systems. It would be helpful to explain to users how and why trends in the headline estimates differ between data sources.</p> <p>There is also limited information in the public domain about these quality assurance processes and how discoveries made during the</p>	<p>ONS should publish details about its quality management approach to assure users of the quality of the statistics and help them understand how patterns in infection seen in the survey compare to other COVID-19 data sources.</p>

	<p>data analysis process inform improvements to data collection – for example, the additional manual validation required for data on occupations, or which questions might be useful to be asked longitudinally.</p>	
	<p>As we highlighted in our first rapid review, the speed of the initial set up of the survey in England was impressive. The subsequent expansion across the UK now provides vital coverage for all nations and the opportunity for users to compare positivity rates between them. In order to achieve this scale-up, ONS switched from sampling from people who have previously participated in an ONS social household survey (the Annual Population Survey) to sampling from AddressBase, a list of UK addresses maintained by Ordnance Survey. ONS told us it is confident that the population is sampled at a sufficient level to ensure the required sample size. ONS has worked with IQVIA to put in place measures to boost response rates, such as introducing a range of language translations to improve the representation of ethnic minorities in the survey.</p> <p>ONS weights survey estimates to mitigate against the effect of non-response bias – currently, estimates are adjusted by respondent age, sex and region, but ONS is also looking into adjusting by other characteristics such as ethnicity. Users told us they would like more information about response rates to fully understand how the characteristics of those who choose to participate in the survey impact the estimates.</p>	<p>ONS must support users to understand potential biases in the data that arise from variation in response rates. To achieve this, ONS should publish information about the representativeness of the survey – for example, what it is doing to increase participation and how the modelling approach accounts for variation in response rates. It would also be helpful if it explained how the achieved sample size and methodology allows for robust estimation.</p> <p>In addition to the information it publishes about the demographics of positive cases, ONS should publish information about the demographics of all participants, to help users understand variation in non-response.</p>