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Security
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Compliance with self-isolation of those who tested positive for SARS-CoV-2 and their confirmed contacts: a summary of the evidence from August 2020 to February 2022

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Executive summary

This report sets out the evidence relating to self-isolation compliance among 2 groups: those who entered the NHS Test and Trace system following a formal positive test result for SARS-CoV-2 ('cases') and contacts of those who tested positive who were advised to isolate by clinical contact tracers ('contacts'). It provides an overview of the different sources of data, which include surveys conducted internally and externally, as well as analysis of data collected through NHS Test and Trace. The time period covered by this report is July 2020 to February 2022. The analysis indicates that levels of self-reported compliance were high over a prolonged period (where high is defined as above 80%) and are consistent across the different sources of data. It should be noted that most of the data is based on self-reporting rather than objective observation and therefore some uncertainty remains about the true level of compliance.

It is important to note that these analyses took place at a time when there was considerable pressure for people to comply with self-isolation, partly because there was a legal obligation to do so, and partly because it was the accepted norm as part of each person's response to the pandemic. The learning from this evaluation needs to be taken into consideration in any future pandemic or other incident where it is deemed necessary for people to self-isolate to reduce the potential for community transmission.

Context

Self-isolation of people who were aware they were infected with SARS-CoV-2 has been an integral part of the response of the UK Government to the COVID-19 pandemic. In England, people with one or more 'cardinal' symptoms of COVID-19 (including new onset cough, fever and anosmia) were asked to self-isolate and request a test for NHS Test and Trace, being released from isolation if the test result was negative. From 28 September 2020 until 24 February 2022, individuals were under a legal duty to isolate if they tested positive for SARS-CoV-2. In addition, all close contacts of someone who had tested positive and were reached by NHS Test and Trace were legally required to self-isolate up until 16 August 2021; after that and until 24 February 2022, contacts who were not exempt were still legally required to self-isolate¹. Exemptions to self isolation were being fully vaccinated according to the vaccination schedule in place at the time or being under 18 years old² or, in rarer circumstances, enrolment in one of several studies that offered alternatives to self-isolation.

Given the key role self-isolation played in containing transmission of SARS-CoV-2, it was important to understand the extent to which people were complying with the requirement. However, measuring compliance with self-isolation requirements is not straightforward. The issues in obtaining an accurate estimate of compliance include: taking into account the

¹ [Moving to step 4 of the roadmap](#)

² [Self-isolation removed for double-jabbed close contacts from 16 August](#)

complexities around what is and is not permitted, including changes over time; any misunderstanding of the requirements among those who should be isolating and the impact this has on the accuracy of their self-reported compliance; achieving a representative sample; avoiding non-response bias; and ensuring that responses are valid and are not affected by recall bias or social desirability bias. Due to these complexities, it is useful to compare sources of data that use different approaches and methods for obtaining estimates as this can strengthen confidence in their reliability if the findings are consistent. It is also important, where possible, to corroborate self-reported measures with those based on observation.

Data collection by the UK Health Security Agency (UKHSA) focused on 2 metrics related to compliance.

1. The first was compliance as measured by the proportion of people who did not leave their homes (except for permitted reasons) and did not have any visitors (except permitted ones) during their isolation period.
2. The second measure was the proportion of people who had no non-household contacts during their period of self-isolation.

The first measure is pertinent to compliance with self-isolation policy requirements, whereas the second provides an additional level of detail relevant to the potential effect of non-compliance on transmission of the virus.

Data sources

The UKHSA Social Research and Evaluation Unit undertook and commissioned a range of surveys and analysis to measure self-isolation compliance among cases and contacts. Most of this work relied on self-reported measures but some analysis has been able to leverage data that had an observational element. A summary of the data sources is set out below in the chronological order in which data collection started or the analysis was first undertaken.

Internal survey

The so-called internal survey was designed by NHS Test and Trace's Social Research and Evaluation Unit, with input from colleagues from Public Health England (PHE),³ the Scientific Pandemic Insights – Behavioural group (SPI-B) and the Behavioural Insights Team (formerly the Cabinet Office's Nudge Unit). Telephone interviews were carried out by health professionals engaged as contact tracers for NHS Test and Trace and there were 2 periods of fieldwork. The first took place during August and September 2020 and focused exclusively on contacts (generating a total sample of 10,358). The second took place from November 2020 to March 2021 (generating a total sample of 7,807) and was primarily focused on cases. The response rate during the first period of fieldwork was 16%; the response rate for the second period of

³ NHS Test and Trace and the former PHE came together in October 2021 to form the UK Health Security Agency.

fieldwork is not precisely known as the number of cases approached and the ability to follow up non-responses depended on available daily capacity of the contact tracers. However, the response rate is not believed to be materially different from the first period.

NHS Test and Trace data on contacts that re-enter the system as cases within their isolation period

A proportion of contacts of positive cases took a SARS-CoV-2 test during the period they were isolating, either because they had developed symptoms or because they elected to do so for other reasons. These individuals were identified in the cases database using a bespoke matching process because there was no consistent, unique identifier used across the cases and contacts databases. The proportion of these individuals who reported no non-household contacts when reached by NHS Test and Trace was then calculated and was used as an indicator of isolation compliance. It is not possible to calculate a 'response rate', but the proportion of contacts that become cases varied between 5% and 15% over time. There was likely to be self-selection among contacts who chose to get tested while isolating (as it could prolong the isolation period) and this was therefore likely to affect the representativeness of this data.

ONS surveys of compliance with self-isolation

In late 2020, the Office for National Statistics (ONS) was commissioned by the UKHSA to undertake monthly stratified probability surveys of cases and contacts, with a sample size of approximately 1,000 cases and 1,000 contacts per month. The surveys began in February 2021 for cases and March 2021 for contacts with response rates of 19% and 15% respectively. Survey findings were weighted to address age, sex and regional bias so that they were representative of those eligible to take part in the survey during the fieldwork period⁴. The surveys collected data on compliance (as measured by the proportion of people who do not leave their homes) and on the proportion of cases and contacts that reported no non-household contacts during their isolation period. Question wording can be found by searching the Government Statistical Service COVID-19 question bank.⁵

NHS Test and Trace compliance check-in calls data

Between December 2020 and December 2021, cases and non-household contacts were telephoned by contact tracers to offer support and ascertain whether the individual was complying with self-isolation requirements. These calls took place on days 4, 7 and 10 of the self-isolation period. The measure of isolation compliance was the proportion of individuals who had a successful call outcome on all 3 days. A successful outcome was defined as the individual being reached on each of days 4, 7 and 10 (even though this may have been after a number of attempted calls) and that, once reached, they confirmed that they were self-isolating as required. As most cases and non-household contacts provided phone details and therefore

⁴ More information on [the methodology used by ONS](#) can be found online.

⁵ [COVID-19 question bank](#)

received check-in calls, in large part this data addresses the potential non-response bias associated with the internal and ONS surveys. However, due to operational capacity and logistics, during a number of periods demand for contact tracing exceeded supply, and where calls could not be made, some cases and contacts were coded on the contact tracing system as 'non-responsive'. This led to a number of apparent dips in compliance; however, it is believed these dips were artefacts that reflected the operational issues rather than actual changes in behaviour.

NHS Test and Trace compliance check-in calls data: landline data

A subset of 358,298 cases and non-household contacts shared a landline number with NHS Test and Trace rather than a mobile number. In all other respects, the engagement with the contact tracers was the same as if they had provided a mobile number. Unlike a mobile phone, an individual needs to be at the location where they are isolating in order to answer the landline, and therefore this measure is essentially an observational measure. However, it is not possible to rule out the possibility that the call was answered by a different individual than the one who was meant to be isolating. In addition, those who provided landline numbers may differ systematically from those who provided mobile phone numbers, so selection bias also cannot be ruled out.⁶

Nevertheless, if those with mobile phones are routinely claiming to be at home when in fact they are not, a difference between the proportion of successful calls to landlines compared with mobiles would be expected. Therefore, this data is an important source of corroboration for the self-report data.

Findings

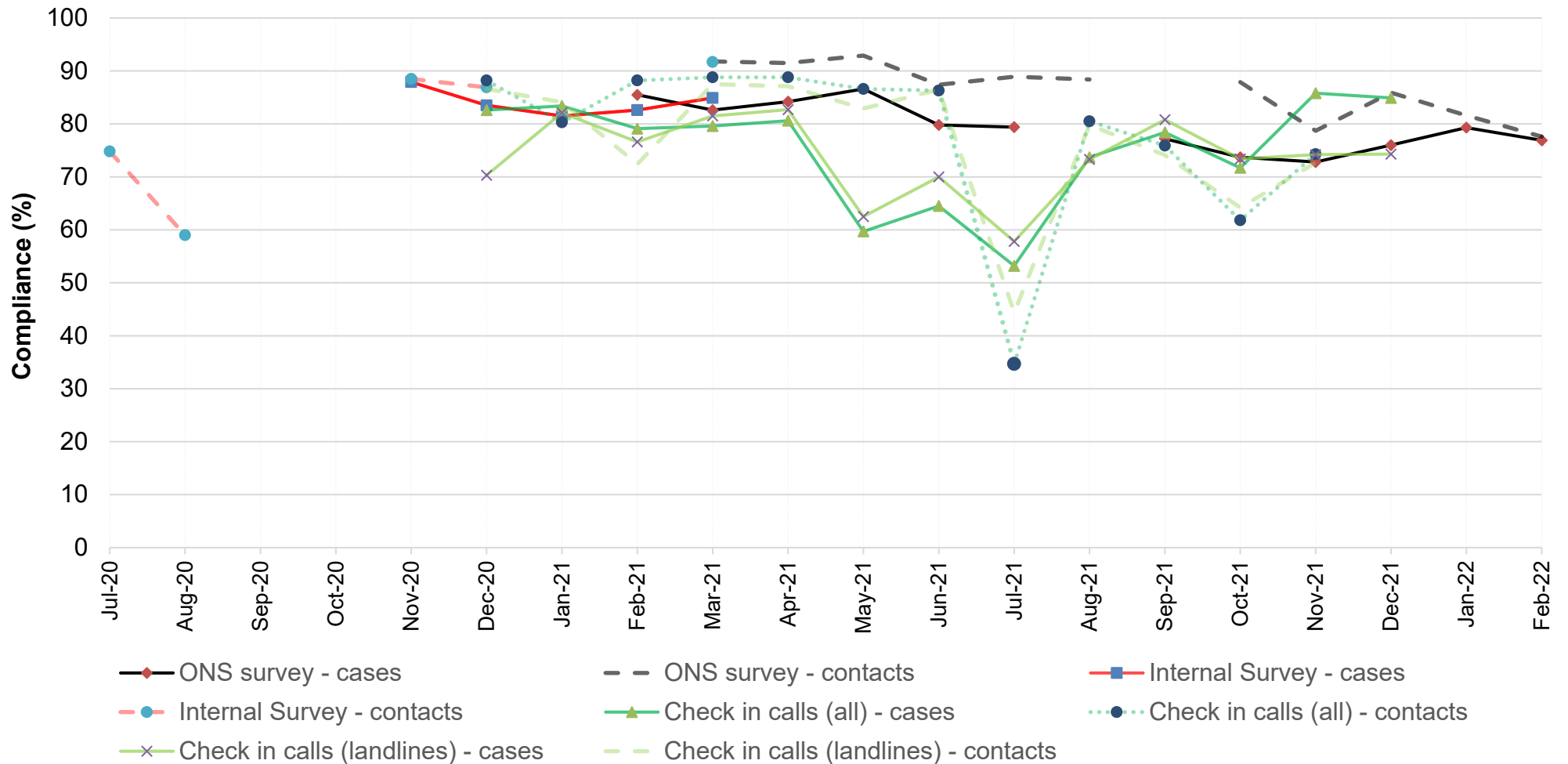
Using the different sources of data, compliance with the first self isolation metric is shown in [Table 1](#) and [Figure 1](#), namely the proportion who reported not leaving home (except for permitted reasons) or having non-household contact.

⁶ Although older individuals are more likely to share a landline rather than mobile number, initial analysis has not identified any substantial differences when the data is compared using age, gender or index of multiple deprivation.

Table 1. Compliance with self-isolation requirements (%) from different data sources for the period July 2020 to February 2022

Month	Internal Survey: cases	Internal Survey: contacts	ONS survey: cases	ONS survey: contacts	Check-in calls (all): cases	Check-in calls (all): contacts	Check-in calls (landlines): cases	Check-in calls (landlines): contacts
Jul-20	-	74.8	-	-	-	-	-	-
Aug-20	-	59.0	-	-	-	-	-	-
Sep-20	-	-	-	-	-	-	-	-
Oct-20	-	-	-	-	-	-	-	-
Nov-20	87.9	88.5	-	-	-	-	-	-
Dec-20	83.5	86.9	-	-	82.6	88.2	70.3	86.6
Jan-21	81.5		-	-	83.4	80.3	82.1	84.1
Feb-21	82.6		85.5	-	79.1	88.2	76.6	72.4
Mar-21	84.9	91.7	82.6	91.8	79.6	88.8	81.5	87.5
Apr-21	-	-	84.2	91.5	80.6	88.8	82.7	87.1
May-21	-	-	86.6	92.9	59.7	86.6	62.5	82.9
Jun-21	-	-	79.8	87.4	64.5	86.3	70.0	86.5
Jul-21	-	-	79.4	88.9	53.2	34.7	57.8	44.4
Aug-21	-	-	-	88.4	73.7	80.5	73.3	79.8
Sep-21	-	-	77.2	-	78.4	75.9	80.8	74.1
Oct-21	-	-	73.7	87.9	71.7	61.8	73.4	64.2
Nov-21	-	-	72.8	78.7	85.8	74.3	74.2	72.7
Dec-21	-	-	76.0	85.9	84.9	-	74.3	-
Jan-22	-	-	79.3	81.6	-	-	-	-
Feb-22	-	-	76.9	77.6	-	-	-	-
Mean (%)	84.1	80.2	79.5	86.6	75.2	77.9	73.8	76.9

Figure 1. Compliance with self-isolation requirements for the period July 2020 to February 2022

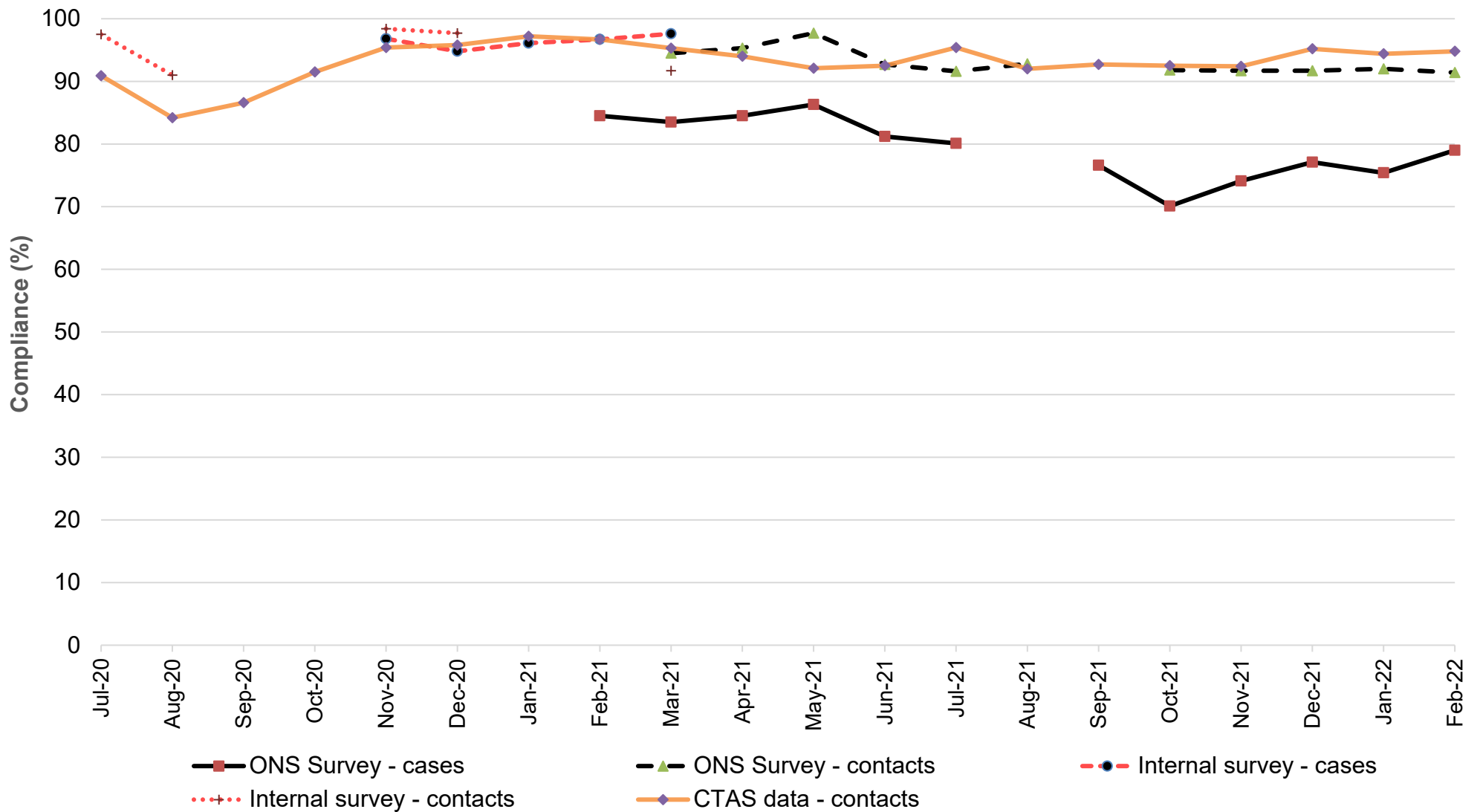


Using a subset of the sources of data where relevant information was available, compliance with the second self isolation metric is shown in Table 2 and Figure 2, namely the proportion of people who had no non-household contacts during their period of self-isolation. Examples of this could be people who said they left home, but only to go for a walk alone during which they did not come into contact with anyone; or who drove to collect their children from somewhere without having themselves got out of the car.

Table 2. Proportion of people with no non-household contacts during their isolation period (%) from different data sources for the period July 2020 to February 2022

Month	Internal survey: cases	Internal survey: contacts	ONS survey: cases	ONS survey: contacts	CTAS data: contacts
Jul-20	-	97.5	-	-	90.9
Aug-20	-	91.0	-	-	84.2
Sep-20	-	-	-	-	86.6
Oct-20	-	-	-	-	91.5
Nov-20	96.8	98.4	-	-	95.4
Dec-20	94.8	97.7	-	-	95.8
Jan-21	96.1	-	-	-	97.2
Feb-21	96.7	-	84.5		96.7
Mar-21	97.6	91.7	83.5	94.5	95.3
Apr-21	-	-	84.5	95.3	94.0
May-21	-	-	86.3	97.7	92.1
Jun-21	-	-	81.2	92.7	92.5
Jul-21	-	-	80.1	91.6	95.4
Aug-21	-	-	-	92.8	92.0
Sep-21	-	-	76.6	-	92.7
Oct-21	-	-	70.1	91.8	92.5
Nov-21	-	-	74.1	91.7	92.4
Dec-21	-	-	77.1	91.7	95.2
Jan-22	-	-	75.4	92.0	94.4
Feb-22	-	-	79.0	91.4	94.8

Figure 2. Proportion of people with no non-household contacts during their isolation period for the period July 2020 to February 2022



Although much of the data is available over the course of the pandemic, some of the survey data has only been available at certain times. To look more closely at the data, 2 periods have been chosen for detailed comparison: August to September 2020 and March 2021. These 2 periods provide a good contrast in population-level restrictions on social contact, which were minimal during the first period and extensive in the second.

The data showing the proportion of individuals complying with self-isolation requirements, as reported by various sources, is presented below in Figure 3 (and set out in [Table 3](#)). There is a substantial degree of consistency across the different data sources, with compliance in the March 2021 period being between 80% and 90% depending on the source. The compliance indicator based on landline check-in calls is also consistent with the other sources which, as previously noted, provides some corroboration of the self-report measures. The consistency between the ONS survey data and the internal survey data in March 2021 also provides reassurance that the internal survey does not suffer from a greater degree of selection bias than the more rigorous ONS survey. This indicates that when extensive population-level restrictions on social contact were eased, there was a reduction in compliance among contacts, with compliance during that period (August to September 2020) at 59%.

Figure 3. Compliance with self-isolation requirements for cases and contacts in August to September 2020 and March 2021

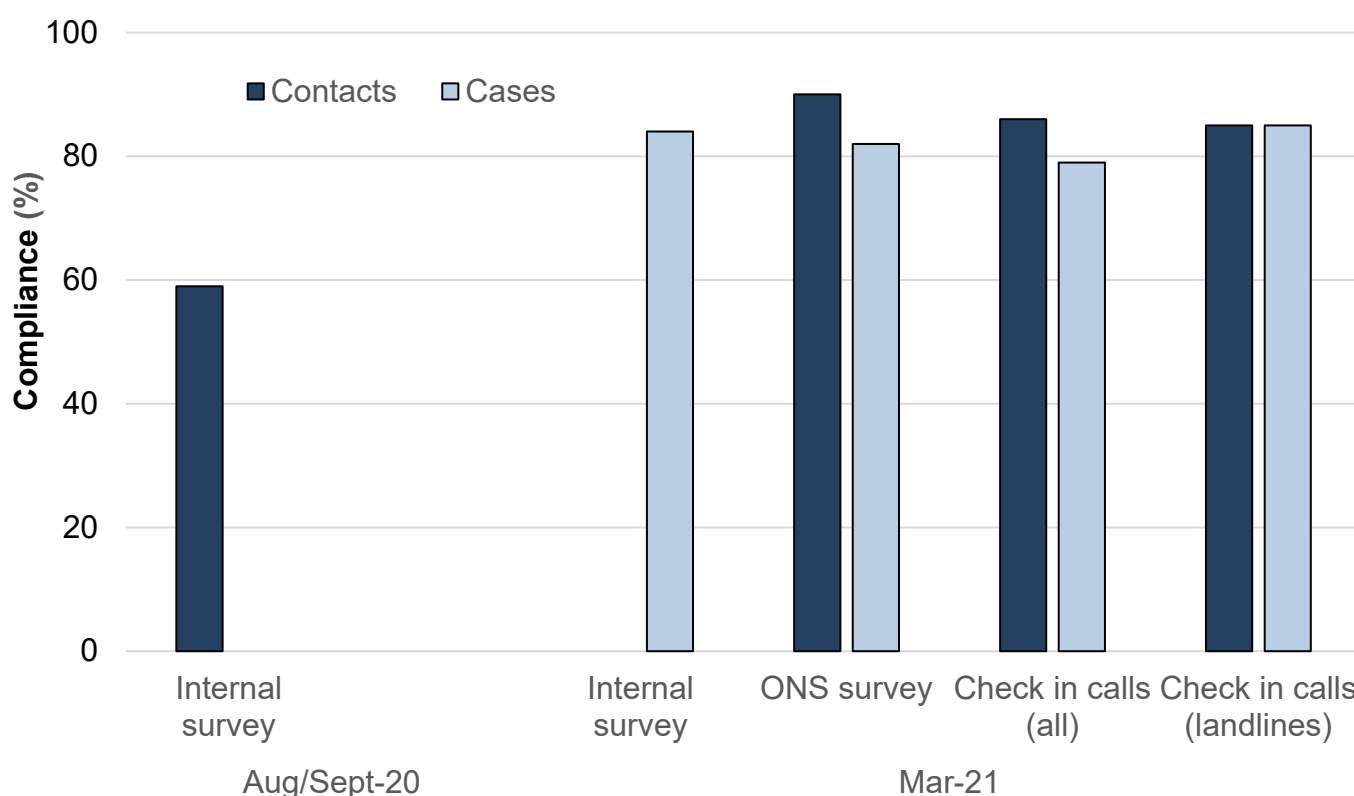


Table 3. Compliance with self-isolation requirements for cases and contacts in August to September 2020 and March 2021

Period	Source	Contacts (%)	Cases (%)
August to September 2020	Internal survey	59	N/A
March 2021	Internal survey	N/A	84
	ONS survey	90	82
	Check-in calls (all)	86	79
	Check-in calls (landlines)	85	85

The data for the proportion of contacts and cases with no non-household contacts during their isolation period is set out below in Figure 4. Again, there is a substantial degree of consistency across the different data sources, though the internal survey indicates a higher proportion for cases in March 21 than the ONS survey (96% versus 83%). However, the reduction in compliance (defined as not leaving home) seen in the data from August to September 2020 is not replicated in the data on compliance regarding no non-household contacts. Of those who reported making a trip outside their home during their isolation period, the majority indicated that it was to undertake activities that only had a small chance of them coming into contact with others (such as taking exercise outdoors). This supports the finding that whilst some cases or contacts may not have fully complied with self-isolation, they did not interact with non-household contacts during their periods of non-compliance, and also echoes the more detailed information reported in the surveys.

Figure 4. Percentage of cases and contacts with no reported non-household contacts for cases and contacts in August to September 2020 and March 2021

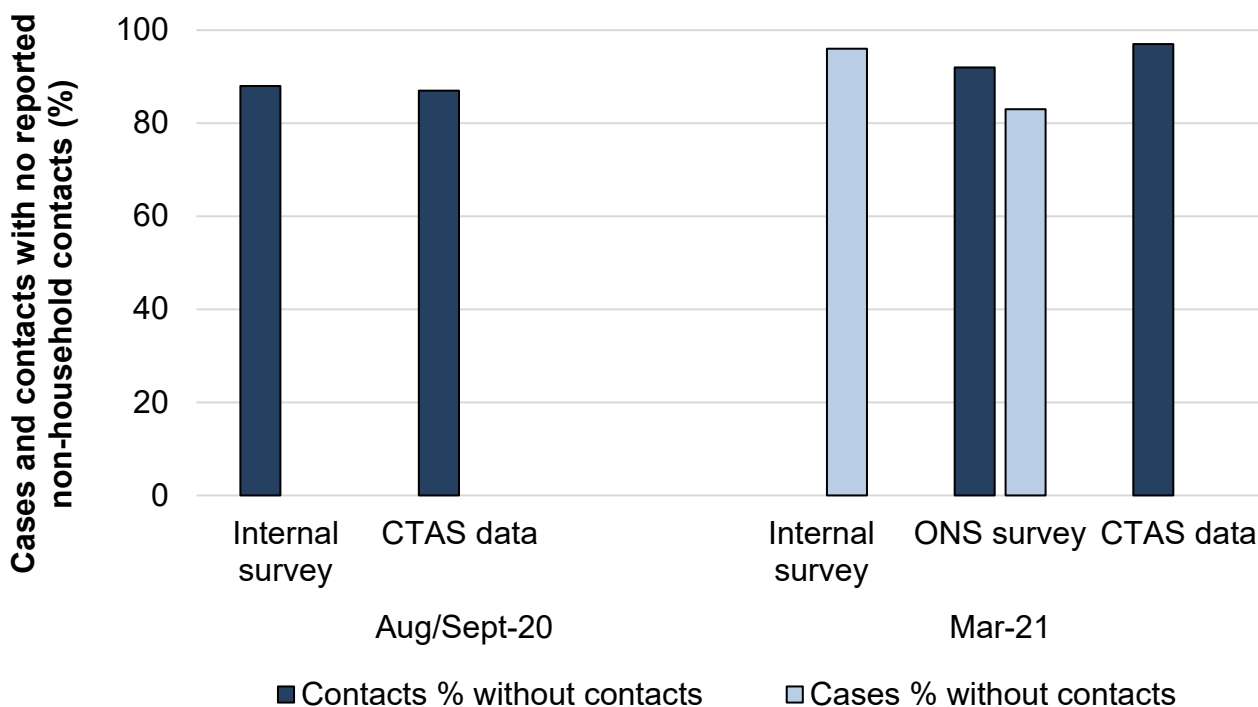


Table 4. Percentage of cases and contacts with no reported non-household contacts for cases and contacts in August to September 2020 and March 2021

Period	Source	Contacts	Case
		% without contacts	% without contacts
August to September 2020	Internal survey	88	N/A
	CTAS data	87	N/A
March 2021	Internal survey	N/A	96
	ONS survey	92	83
	CTAS data	97	N/A

Conclusion

The evidence from the available data indicates that most people within the NHS Test and Trace system complied with isolation requirements and only a small proportion had non-household contacts during their period of self isolation. Similar levels of self-reported compliance for those within the NHS Test and Trace system have been found in related studies, including a UCL panel survey (1) and [surveys of compliance among contacts and cases in Scotland](#) and [Wales](#). However, it is important to bear in mind that the data reviewed here is primarily based on self-reporting and therefore some uncertainty remains over the true levels of compliance.

Our data relates to compliance among people who were already known to NHS Test and Trace. This is a subset of all people in the population for whom guidance to self-isolate would have applied. Some people with symptoms of COVID-19 will not have requested a test, for any number of reasons, including being unaware of the guidance, not believing their symptoms warranted a test, concerns about sharing data with an official agency or worries about the practical implications of self-isolation.

Other data exists from studies that have explored adherence to guidance in the broader population of people with COVID-19-like symptoms. For example, a cross-sectional study (2) investigating adherence to self-isolation and lockdown in May 2020 identified that close to 75% of people with COVID-19-like symptoms had left home in the previous 24 hours, against the guidance at the time. Findings from the CORSAIR study (3) for late January 2021 were that few people with COVID-19-like symptoms in the general population had requested a test (22.2%) while 51.8% had self-isolated. Similar findings of low adherence among people with symptoms in the general population have been reported internationally (4, 5, 6, 7). A key difference between these studies and those described in this report is the population of interest. In CORSAIR and other similar studies, the population of interest is all people with COVID-19-like symptoms. In this study, the population of interest is people known to NHS Test and Trace. This makes direct comparison of compliance rates misleading – these 2 approaches address different questions.

In measuring compliance with self-isolation in the future, it will be important to have considered a valid approach to measurement, preferably one where objective observational data could be more reliable than self-reporting. Examples could be using home visits or utilising technologies such as mobile phones and tracking devices. Attempting to enforce (and, in turn, measure) compliance through approaches like these also has limitations, as individuals may change their behaviour if they know they are being observed. This reinforces the importance of not relying on a single source of information, but instead using a range of different approaches to measure compliance with self-isolation. Further work is needed on developing a valid measure of self-isolation compliance.

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