

Social contacts in the UK from the CoMix social contact survey

Report for survey week 89

Christopher Jarvis, Amy Gimma, Kerry Wong, John Edmunds on behalf of CMMID COVID-19 Working Group, London School of Hygiene and Tropical Medicine.

*Report for SPI-M-O and SAGE, 15 December 2021
Data up to 9 December 2021*

Summary

- The mean number of contacts reported by adults has declined somewhat over recent weeks and is now less than 3 in participants 30 or older, and just over 3 for participants 18 to 29 years old.
- Children's contacts at school for the second half of term 1 are similar to the mean number of contacts for previous school terms.
- More than 5% of children ages 5 to 17 are reported to be in isolation or quarantine, while 6.5% of adults 18 to 59 and 2.4% of adults 60 or older report being in isolation or quarantine.
- Wearing face coverings (masks) has increased in England to approximately 84%, even among younger adults (18 to 29 years old) at around 82%.
- Mask-wearing in Scotland appears to have remained high at approximately 85%.
- Adults who attended their workplace continue to report a higher mean number of contacts than employed adults who did not attend their workplace, though the difference between the groups has decreased.

Main

Mean reported contacts for adults this week for all adults is now 2.73 per day (95% CI 2.47 to 3.01), with participants over 70 reporting the lowest mean number of contacts (2.38 per day; 95% CI 1.80 to 3.25) and 18 to 29 year old participants reporting the highest (3.12 per day; 95% CI 2.50 to 3.86) (Figures 1-3). Contacts remain quite consistent across the regions of England, Scotland (1.96; 95%CI 1.65 to 2.31), and Wales (2.31; 95% CI 1.70 to 2.99) (Figure S1). While there is some variation in the mean number of contacts in Northern Ireland this is likely due to low participation in the region. The lowest reported mean number of contacts by region in England was 1.98 (95% CI 1.65 to 2.31) in Greater London and the highest was 3.65 (95% CI 2.36 to 5.78) in the East of England. Children's contacts decreased over the autumn half-term period, with the mean number of contacts recorded then consistent with the summer holidays. It has now returned to that seen throughout the first half of the term (Figure 4). The fraction of participants in isolation/quarantine continues to fluctuate as follows; 6.2 % of children aged 5 to 11, 4.8% of children aged 12 to 17, 6.5% of adults aged 18 to 59, and 2.4% of adults over 60 (Figure 5).

In England, the overall reported facemask use is now nearly 84%, up from about 68% two weeks ago, for those who reported at least one contact outside their household (Figure 6). Reported face mask use in participants in Scotland who reported more than one contact remains high with 85% reporting wearing a facemask at least once in the latest survey. In Wales the reported use of face-masks has fluctuated somewhat recently, but the sample size is low and this result should be interpreted with caution. Participants in England aged 18 to 29 report the lowest use of facemasks at 82%, while 83% of 30 to 59 year olds, and 86% of those over 60 reported wearing a face mask if they made a contact outside the home (Figure 7).

Those who attended work over have continued to report consistently higher contacts compared to those whose work is open, but they did not attend, though the difference between the mean number of contacts reported is decreasing (Figure 8).

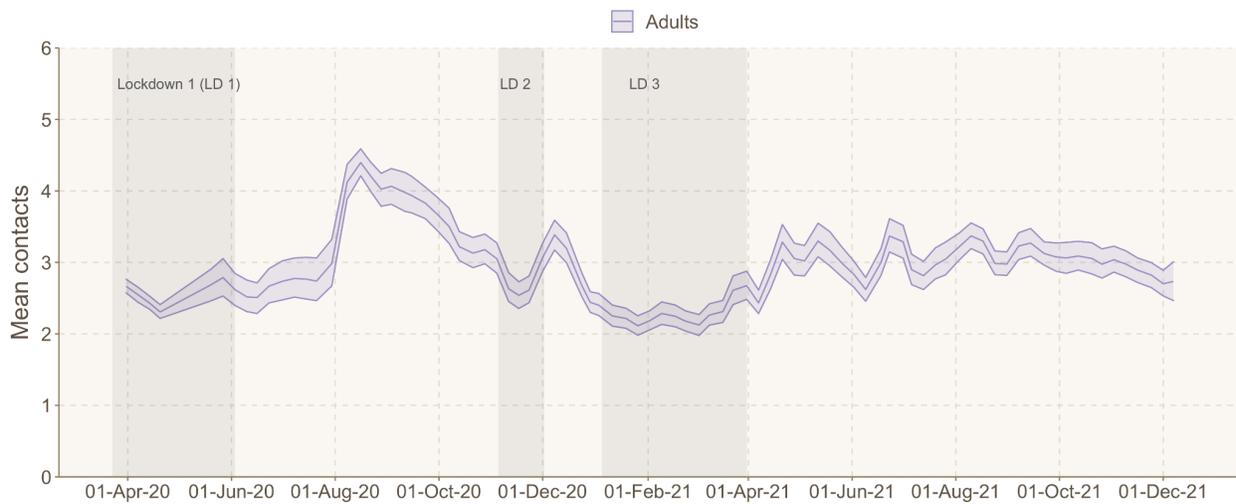


Figure 1: Mean contacts in the UK since the 23rd March 2020 for adults. Uncertainty calculated using bootstrapping. Contacts truncated to 50 contacts per participant. Observations are smoothed over two weeks to account for panel effects. Date on x axis refers to the midpoint of the survey period.

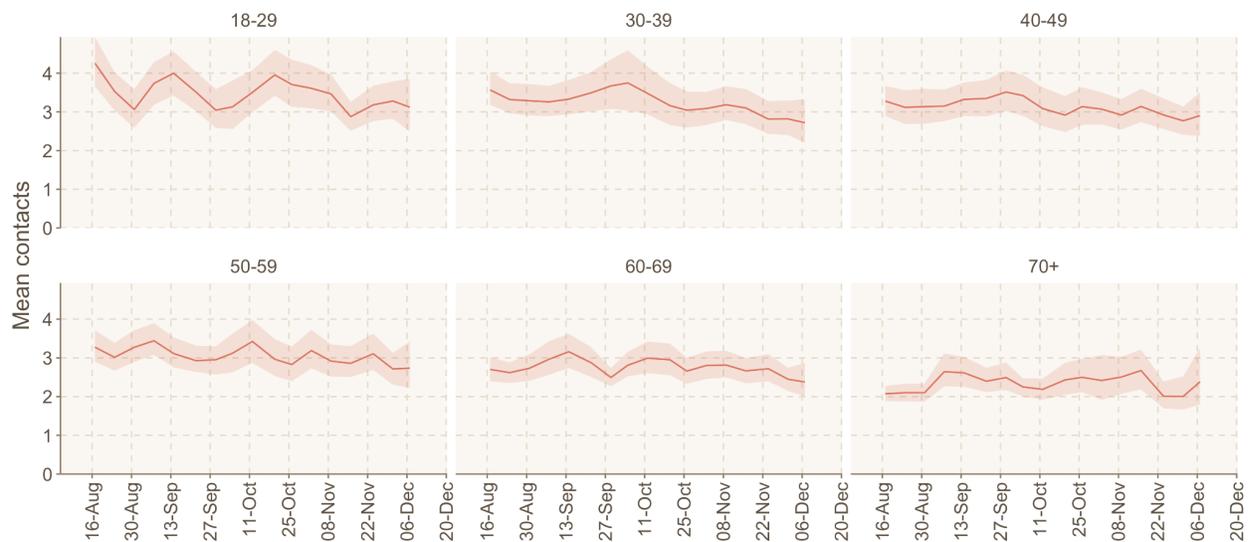


Figure 2: Mean contacts in all settings by age-group for adults over time. Uncertainty calculated using bootstrapping. Contacts truncated to 50 contacts per participant. Observations are smoothed over two weeks to account for panel effects. Date on x axis refers to the midpoint of the survey period.

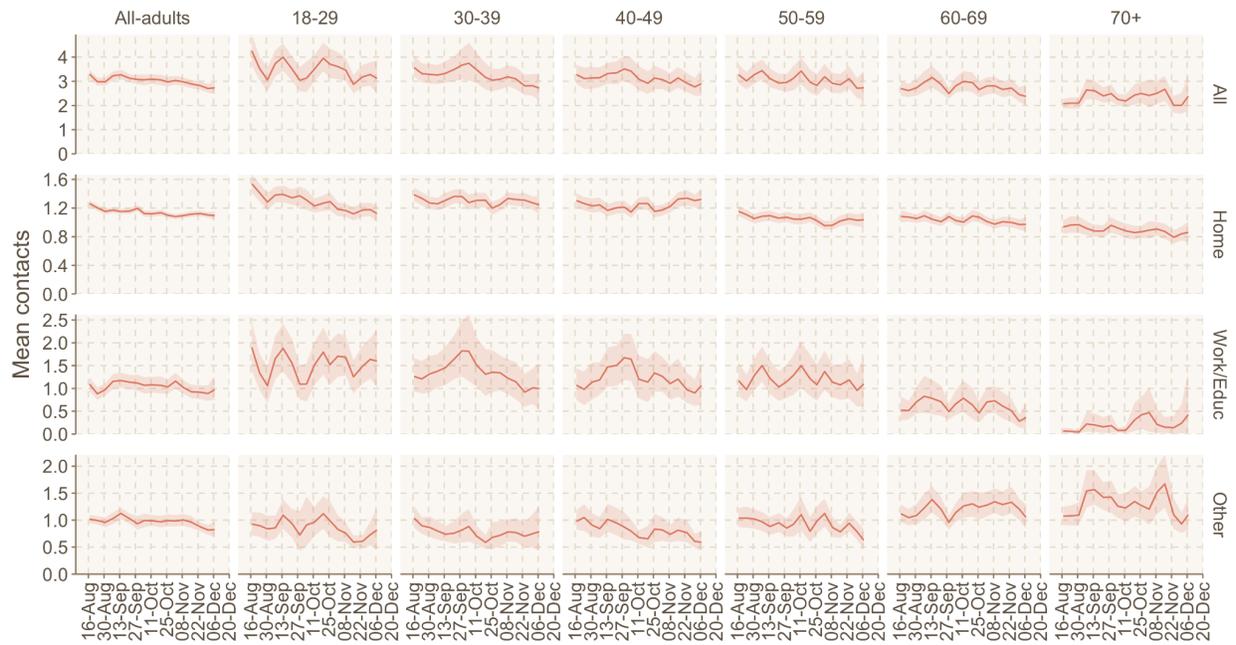


Figure 3: Mean contacts by settings and by age-group over time. Uncertainty calculated using bootstrapping. Contacts truncated to 50 contacts per participant. Observations are smoothed over two weeks to account for panel effects. Date on x axis refers to the midpoint of the survey period.

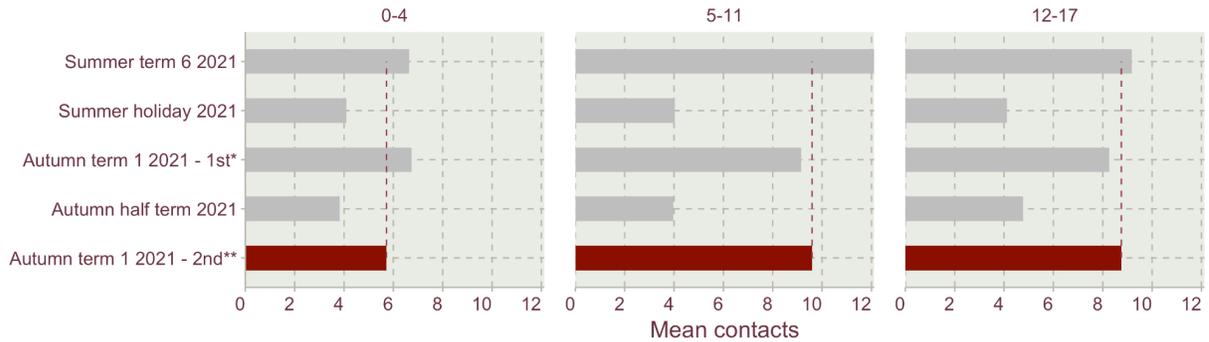


Figure 4: Comparison of mean contacts from the autumn half term to previous school term and holidays periods by age for children. Current period highlighted in red with dashed line for easier comparison to previous periods. * Autumn term 1 2021 - 1st half Includes data from 1st September to 28th September 2021 inclusive. ** Autumn term 1 2021 - 2nd half includes data from 3 November to 9 November 2021 inclusive.

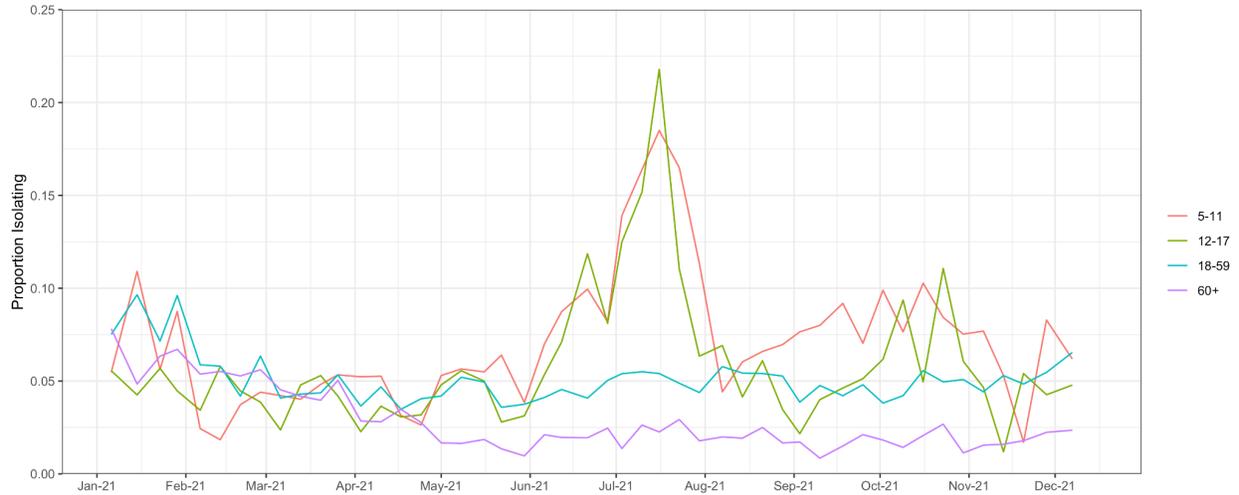


Figure 5: Proportion of adults or children in isolation or quarantine. Observations are smoothed over two weeks to account for panel effects apart from the most recent week of data. Date on x axis refers to the midpoint of the survey period.

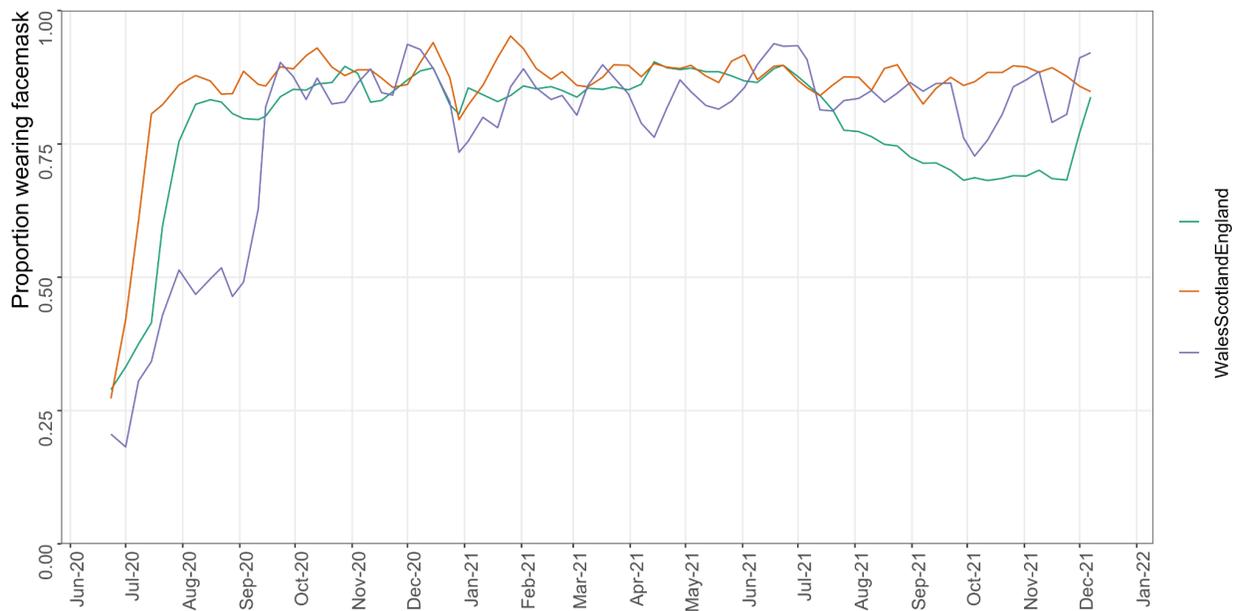


Figure 6: Proportion of adults wearing a face mask over time by country (with at least one contact outside of the home). Observations are smoothed over two weeks to account for panel effects apart from the most recent week of data. Date on x axis refers to midpoint of the survey period.

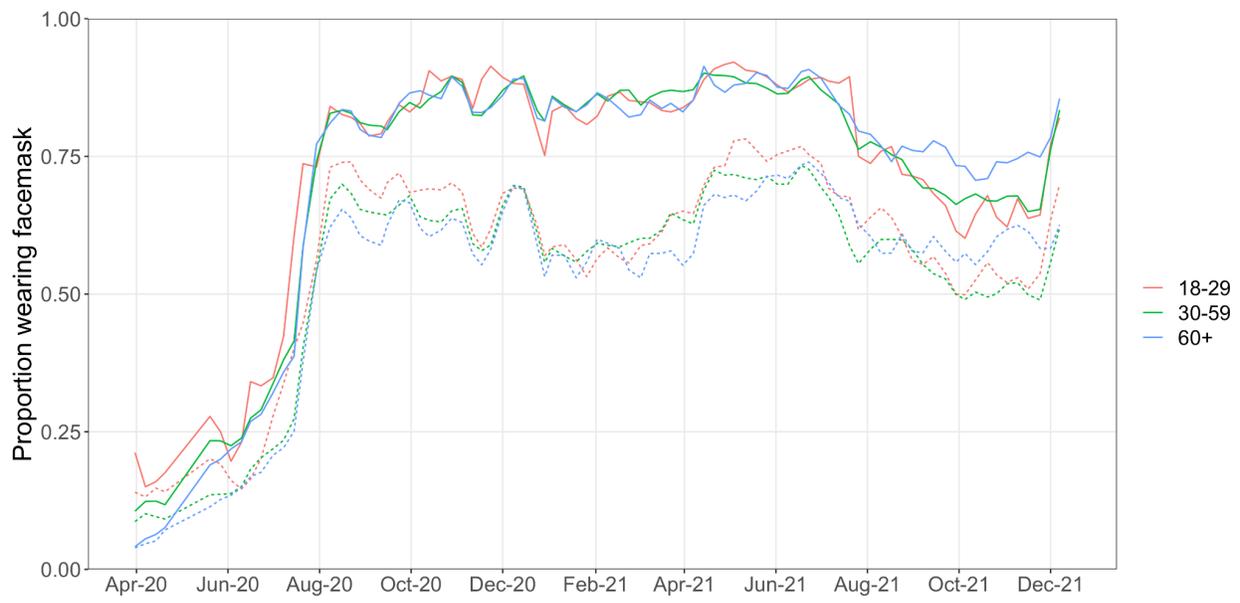


Figure 7: Proportion of adults wearing a face mask over time in England (Solid line = with at least one contact outside of the home, dotted line = all participants). Date on x axis refers to midpoint of the survey period.

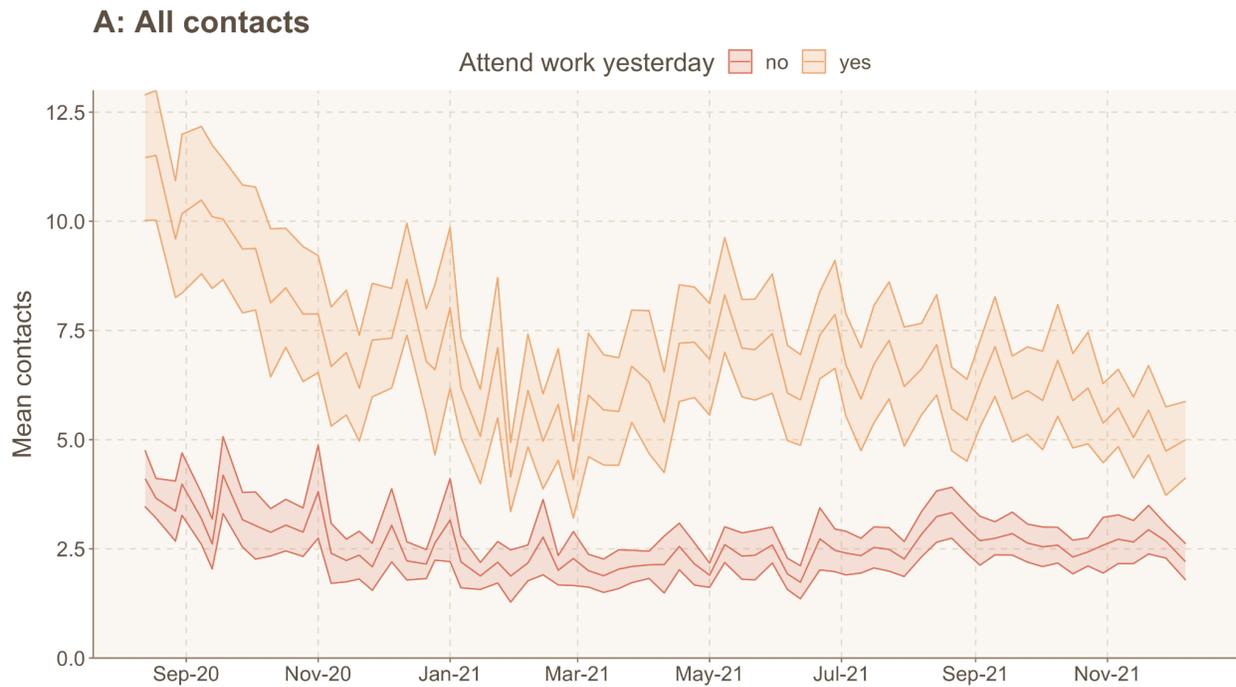


Figure 8: Mean contacts in the UK since August 2020 for individuals attending or not attending work on the day of the survey for people that are employed and their work is open. 95% Uncertainty interval calculated assuming a standard normal mean of two times the standard error of the mean. Contacts truncated to 50 contacts per participant. Observations are smoothed over two weeks to account for panel effects. Date on x axis refers to the midpoint of the survey period.

Methods

CoMix is a behavioural survey, launched on 24th of March 2020. The sample is broadly representative of the UK adult population. Participants are invited to respond to the survey once every two weeks. We collect weekly data by running two alternating panels. Parents complete the survey on behalf of children (17 years old or younger). Participants record direct, face-to-face contacts made on the previous day, specifying certain characteristics for each contact including the age and sex of the contact, whether contact was physical (skin-to-skin contact), and where contact occurred (e.g. at home, work, while undertaking leisure activities, etc). Further details have been published elsewhere [1]. The contact survey is based on the POLYMOD contact survey [2].

We calculated the mean contacts using 1000 bootstrap samples. Bootstrap samples were calculated at the participant level, then all observations for those participants are included in a sample to respect the correlation structure of the data. We collect data in two panels which alternate weekly, therefore we calculated the mean smoothed over the 2 week intervals to give a larger number of participants per estimate and account for panel effects. We used a post-stratification method to assign weights, based on the World Population Prospect population estimates for the UK by age and gender, when calculating the mean number of contacts. We calculated the mean number of contacts in the settings home, work and school (including all educational establishments, including childcare, nurseries and universities and colleges), and “other” (mostly leisure and social contacts, but includes shopping). We look at the mean contacts by age, country, and region of England. The mean number of contacts is influenced by a few individuals who report very high numbers of contacts (often in a work context). The means shown here are calculated based on truncating the maximum number of contacts recorded at 50 per individual per day. We compared the mean reported contacts for the most recent data of the survey to the mean contacts reported during ten time periods over the previous year which represent different levels of restrictions.

Participants were asked whether they were in isolation or quarantine on the day they reported contacts. They were also asked whether they wore a facemask on the day of reported contacts, we filtered to participants who had at least one contact outside of the home. We calculated the proportion who said yes for both these categories over those who responded.

Funding

Medical Research Council (MC_PC_19065), the European Commission (EpiPose 101003688), the NIHR (CV220-088 - COMIX) and HPRU in Modelling & Health Economics (NIHR200908).

References

1. Jarvis CI, Van Zandvoort K, Gimma A, Prem K, CMMID COVID-19 working group, Klepac P, et al. Quantifying the impact of physical distance measures on the transmission of COVID-19 in the UK. BMC Med. 2020;18: 124.
2. Mossong J, Hens N, Jit M, Beutels P, Auranen K, Mikolajczyk R, et al. Social contacts and mixing patterns relevant to the spread of infectious diseases. PLoS Med. 2008;5: e74.

Additional graphs and tables



Figure S1: Mean contacts in all settings in adults for UK nations and English regions over time. Uncertainty calculated using bootstrapping. Contacts truncated to 50 contacts per participant. Observations are smoothed over two weeks to account for panel effects. Date on x axis refers to the midpoint of the survey period.