The effect of social distancing on the reproduction number and number of contacts in the UK from a social contact survey
Report for Week 29

Authors: Amy Gimma, Christopher Jarvis, Kevin Van Zandvoort, Kerry Wong, and John Edmunds on behalf of the LSHTM COVID-19 Modelling Team

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Summary

- Mean contacts among adults are consistent with previous weeks. Though the number of reported work contacts was slightly lower for the current week, the data are still consistent (p=0.14) with no reduction in mean work contacts, however the point estimate was far from zero and estimated as -1.39 (95% CI -3.22 to 0.35).
- Mean contacts among children remain similar to previous weeks from the 16th of September onwards.
- The proportion of adults reporting any contacts in places of entertainment, such as pubs, restaurants and cinemas was higher in August, but has remained broadly similar since the start of September.

Results

The mean number of contacts this week were consistent with the previous seven weeks, though what is presented is the overall mean and does not stratify according to the different local restrictions applied across the country. There may be some suggestion that among adults aged 18-59 the number of contacts were lower in the week between the 7th and 13th October compared to previous weeks (Figure 1), though this may be reflective of weekly variation. Comparing the setting-specific contacts, the lower mean contacts overall look to be consistent with lower mean contacts in the work setting but these contacts are subject to greater variability than the other settings. Though the mean work contacts were lower for most age groups <60, for ages 30-39 the mean work contacts are consistent with two weeks prior suggesting a panel effect of work contacts in this age group. We compared paired observations before and after the work from home (WFH) restrictions of the 22nd among 1,519 employed adults and found that the data was consistent (p=0.14) with no reduction in mean work contacts, however the point estimate was far from zero and estimated as -1.39 (95% CI -3.22 to 0.35).

Among under 18s, the mean contacts were similar to previous weeks with 0-4 years olds contacts being nearly identical (Figure 2). For the school age children, the 5-11 and 12-17 year olds reported somewhat lower contacts in the week 7-14 Oct. On further investigation, there was a higher proportion of individuals reporting on a weekend in this week's sample and the difference is less pronounced when the data is split by weekend and weekday (Figure 3). In Figure 3, the mean contacts are consistent with at least the three weeks prior, suggesting little change in the reported mean contacts among 5-17 year olds.

Among adults, the proportion of participants reporting any contacts in leisure settings (cinemas, pubs, restaurants, etc) was similar to the six weeks prior (Figure 4). Though this does not reflect changes in the number of contacts made in these settings, it suggests that the proportion of people making contacts in this setting has remained similar since the beginning of September.

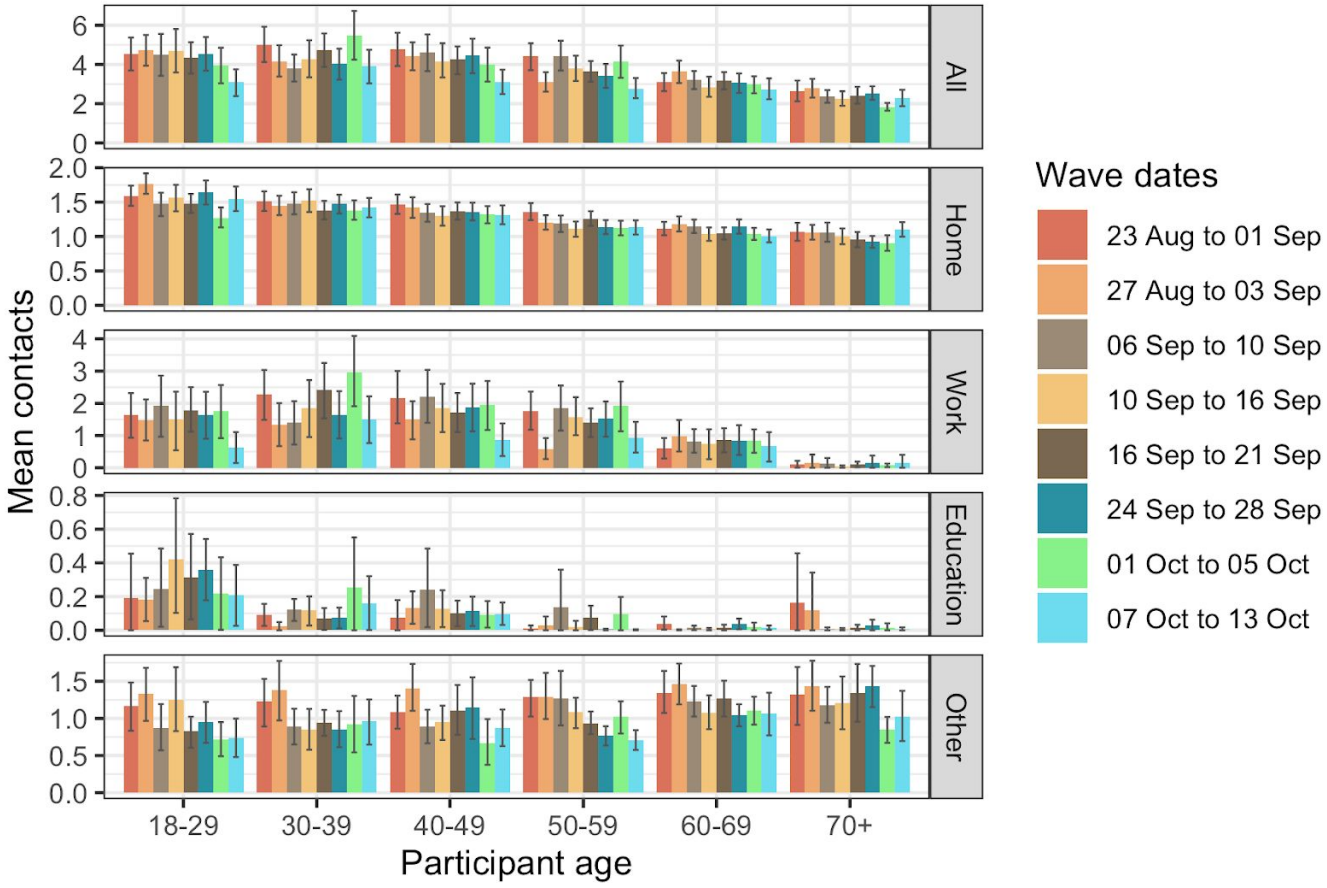

Figure 1: Mean contacts in the UK by setting for Adults, truncated to 50 contacts per participant. Comix data are shown from the 23rd of August onwards, some wave dates overlap between the alternating panels due to recruitment or response timing.

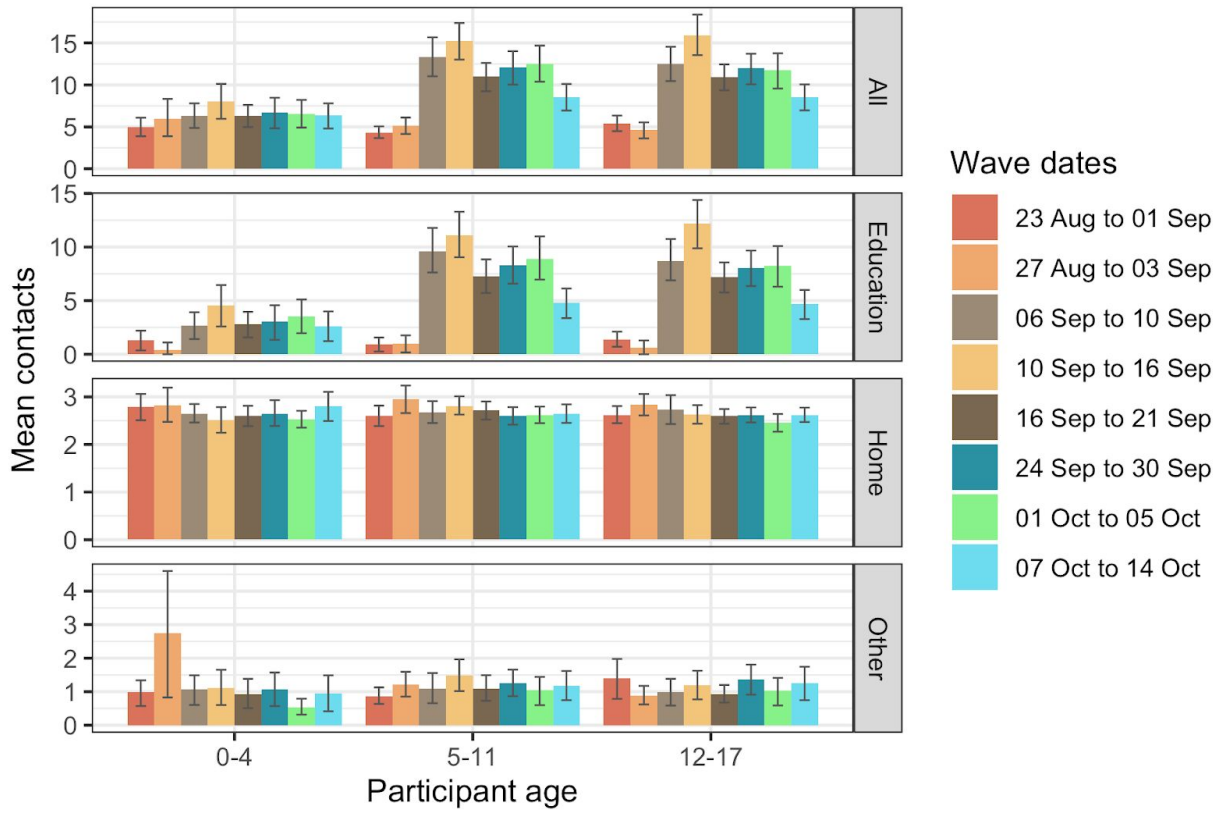

Figure 2: Mean contacts in the UK by setting for children, truncated to 50 contacts per participant. *Children's contacts are reported by a parent as a proxy due to data protection concerns.*

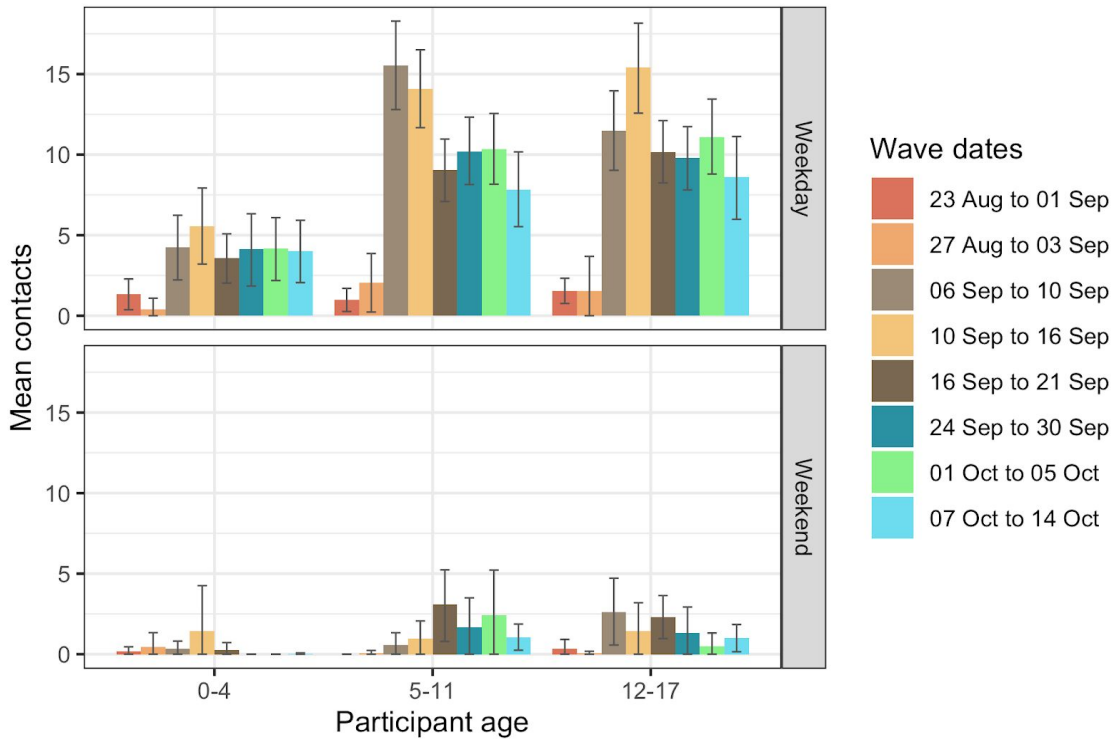

Figure 3: Mean contacts in the UK by setting for children by weekday and weekend reports, truncated to 50 contacts per participant. *Children's contacts are reported by a parent as a proxy due to data protection concerns.*

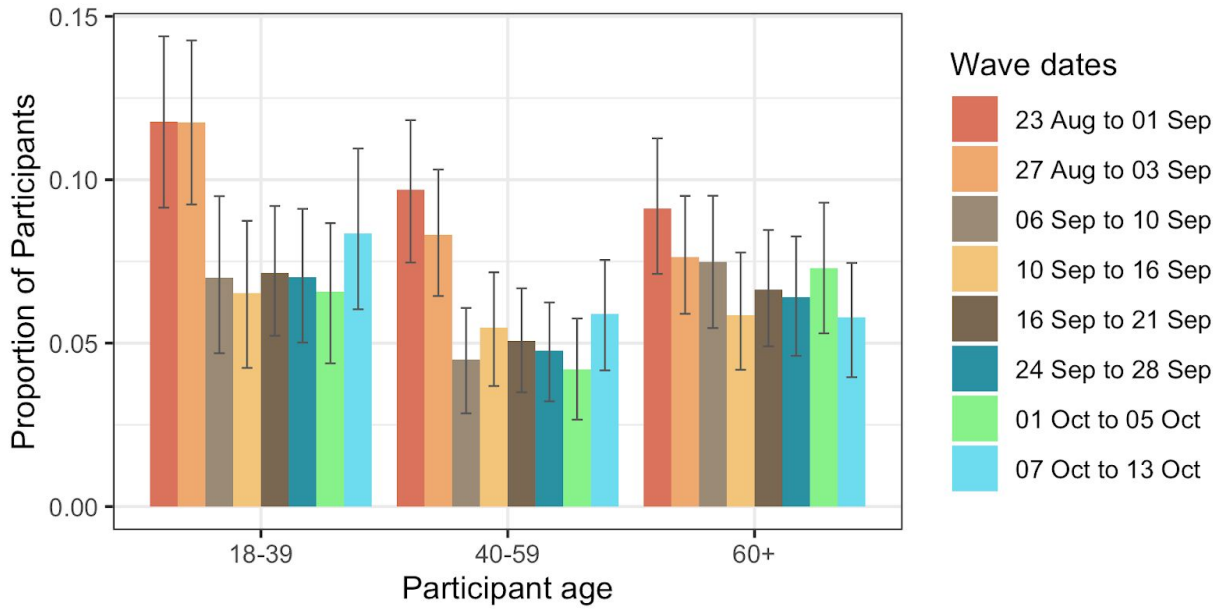

Figure 4: Proportion of adults (in England only) with contacts reported in a restaurant, pub, cinema, or other similar place of entertainment. *The participant age groups have been recategorized to increase power in each category.*

Methods

CoMix is a behavioural survey, launched on 24th of March 2020, with a study sample recruited to be broadly representative of the UK adult population. Data is collected weekly, using two different panels each for adults and children who are interviewed using the same questionnaire in alternate weeks. Some survey waves overlap in time due to time required for recruitment and technical factors, but are drawn from different samples. The questionnaires for children are completed by a parent within their household as a proxy. Participants recorded 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]. The BBC social contact survey is now used as a baseline for social mixing in the UK under normal conditions[3]. To collect children's data, adult participants are asked to answer the contact questions on behalf of a child in their household, and returning participants will be asked about the same child each week.

We calculated the average number of contacts in the settings home, work, school, and other. We sample uniformly between the minimum and maximum age reported for the contact, as we do not record exact ages for contacts. Mean contacts and mean proportions with 95% confidence intervals were calculated by week with 95% confidence interval means of 1000 bootstrapped contact counts using the boot R package[4,5].

References

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4. Canty A, Ripley BD. boot: Bootstrap R (S-Plus) Functions. 2019.
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