Social contacts in the UK from the CoMix social contact survey
Report for survey week 56

Christopher Jarvis, James Munday, Amy Gimma, Kerry Wong, Kevin Van Zandvoort, Sebastian Funk, John Edmunds on behalf of CMMID COVID-19 Working Group, London School of Hygiene and Tropical Medicine.

Summary
- Although contacts for adults remain low, mean contacts have increased more sharply in the most recent week for which data are available (15th to 21st April). This is on top of the gradual rise in reported contacts by adults seen over the last month.
- The reported contacts are consistent to levels seen at the end of the second lockdown.
- The relatively large increase in contacts in the 18-29 year old age group, noted several weeks ago, has returned and appears to be driven by changes in work and school contacts, with the "other" contacts consistently increasing during the last month.
- Contacts in children decreased during the Easter school break and have now returned to the levels expected when schools are open.
- The increase in contacts appears to be present across age, the regions of England and UK nations, though discerning any differences in patterns by region is difficult due to small sample sizes.

Main

Adult contacts have increased steadily over the last month, but the latest data (from 15th to 21st April) are consistent with a sharper rise in mean contact levels (Figure 1). This sharper rise in contact coincides with the most recent easing of restrictions. The gradual increases in contacts that have occurred across working age groups (18 to 59) over recent weeks have had some fluctuations week to week (Figure 2). The dip in contacts of 18-29 years olds seen in the previous weeks appear to be due to reductions in both work and school contacts with "other" contacts showing a persistent increase (Figure S1). It is worth stressing that these increases are small, and the level of contacts remains low, compared with pre-pandemic levels [2].

There has been a steep rise in the mean contacts for adults and children combined (Figure 1). This is predominantly driven by school-age (5-17) children returning to school after the Easter break (Figure 3 and S2).

The increase in outside contacts, observed across all age groups over the last few weeks seems to have increased again after a short period of stability. Contact made indoors also appears to have increased slightly this week (Figures 4 and 5).

Discerning clear trends in regional contact patterns is difficult due to the smaller sample sizes, though there does appear to be an upward trend for contacts across the UK (Figure 6).
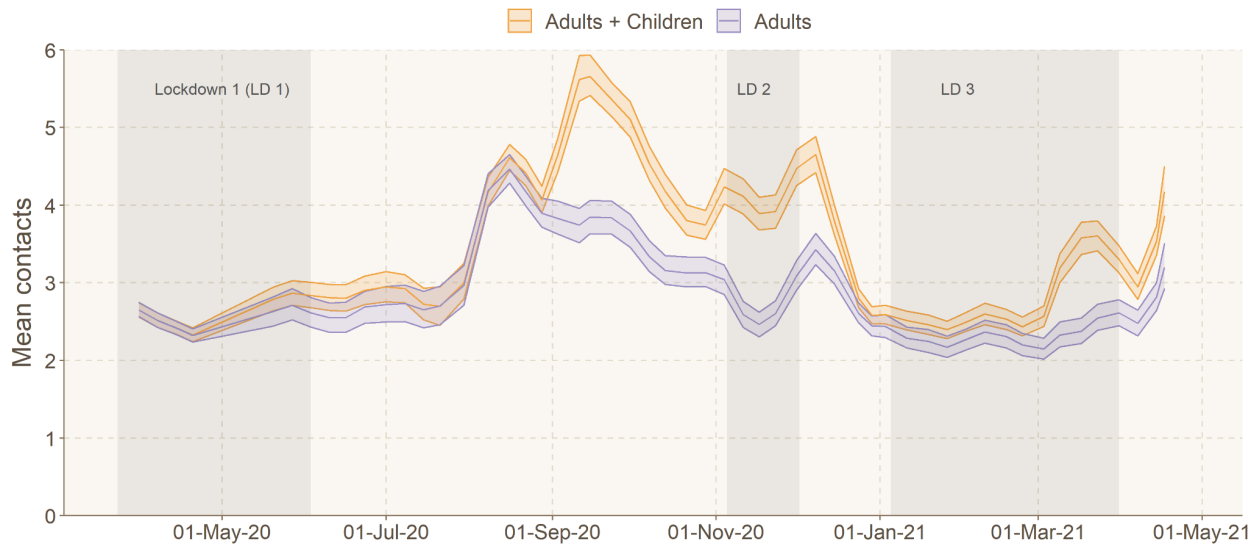
Figure 1: Mean contacts since the 23rd March 2020 for adults and adults and children.
Uncertainty calculated using bootstrapping. Contacts truncated to 50 contacts per participant.
Observations are smoothed over two weeks to account for panel effects. Date on x axis refers to
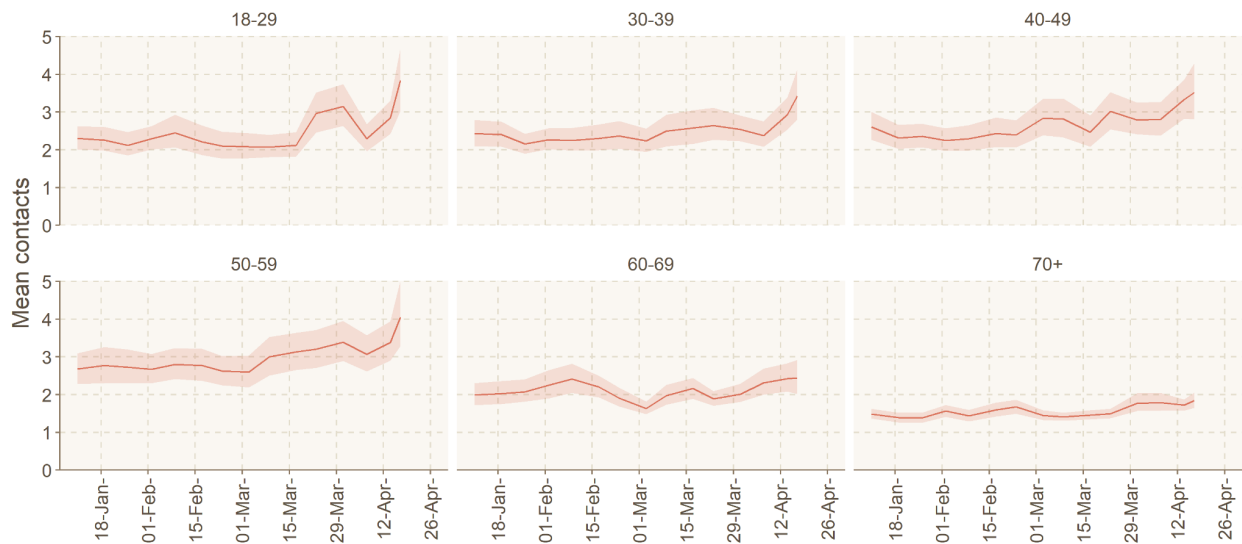the midpoint of the survey period.

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
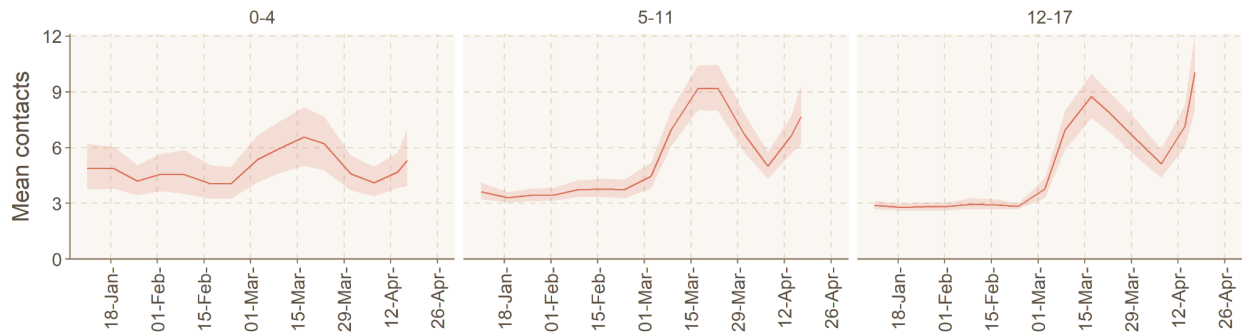of the survey period.

Figure 3: Mean contacts in all settings by age-group for children 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.
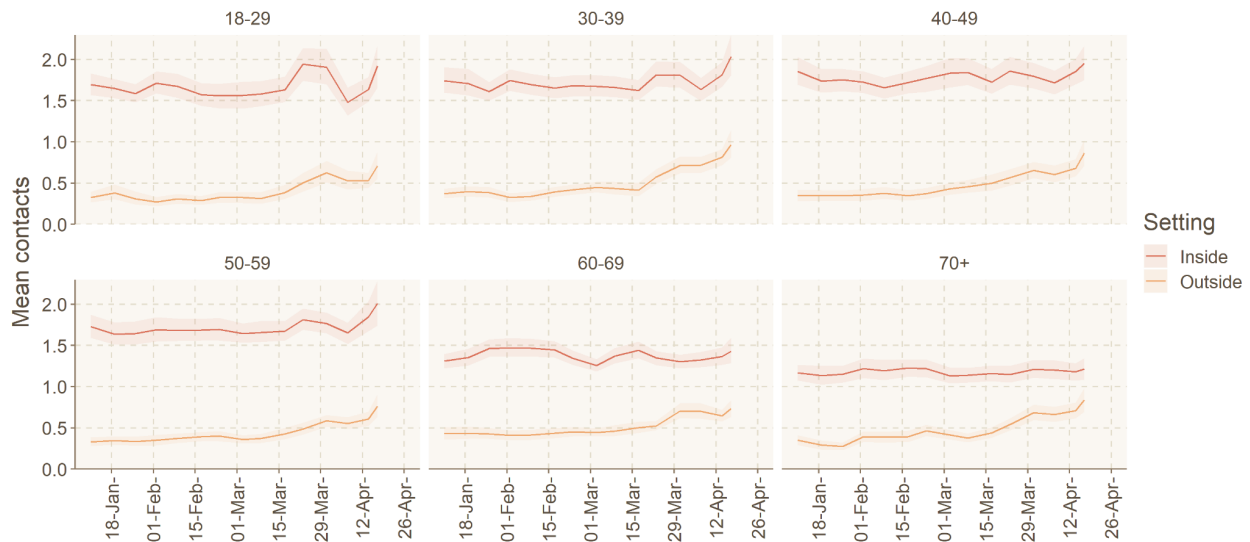

Figure 4: Mean contacts indoors versus outdoors in all settings by age-groups for adults over time Uncertainty calculated using bootstrapped. Contacts truncated to 50 contacts per participant. Observations are smoothed over two weeks to account for panel effects. Date on x axis refers to the midpoint of the survey period. (Note information on a contact being inside or outside is only available for individually reported contacts, is not present for all contacts, and a contact can be selected as inside and outside.
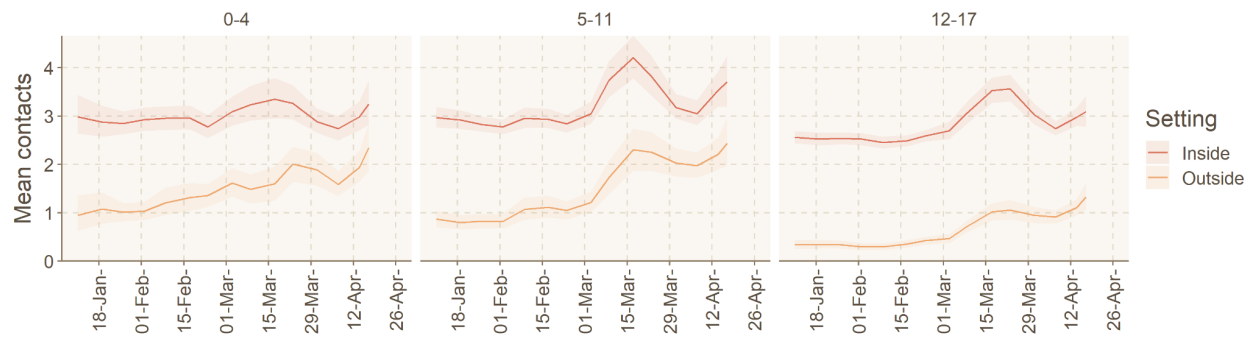
Figure 5: Mean contacts indoors versus outdoors in all settings by age-groups for children over time Uncertainty calculated using bootstrapped. Contacts truncated to 50 contacts per participant. Observations are smoothed over two weeks to account for panel effects. Date on x axis refers to the midpoint of the survey period. (Note information on a contact being inside or outside is only available for individually reported contacts, is not present for all contacts, and a contact can be selected as inside and outside.
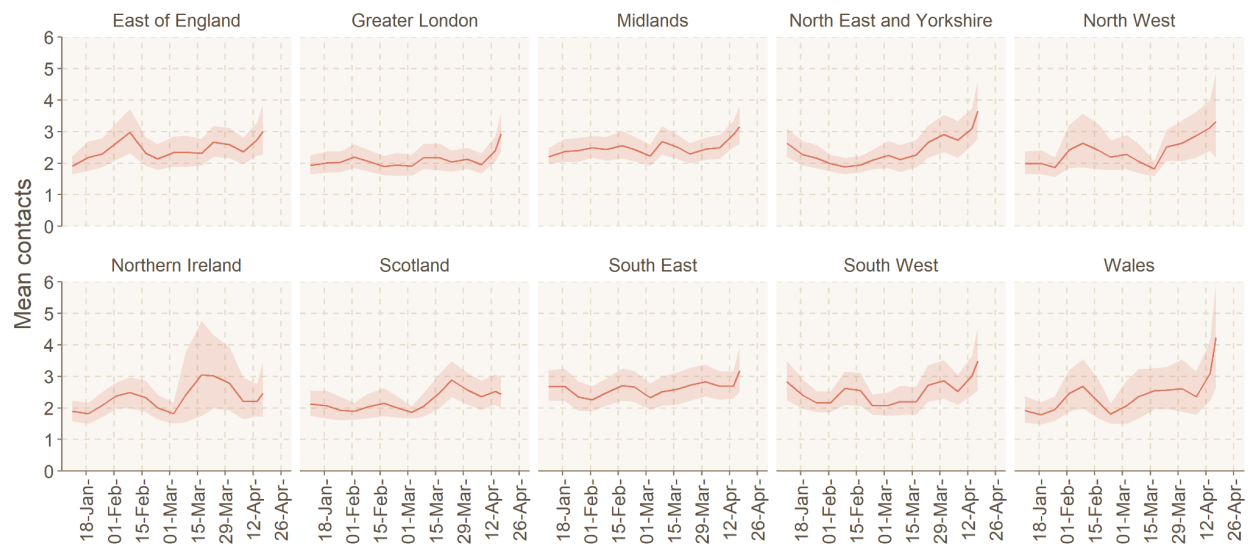

Figure 6: Mean contacts in all settings in adults for UK nations and English regions over time. Uncertainty calculated using bootstrapped. Contacts truncated to 50 contacts per participant. Observations are smoothed over two weeks to account for panel effects. Date on x axis refers to the midpoint of 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. Participant's 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 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.

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.
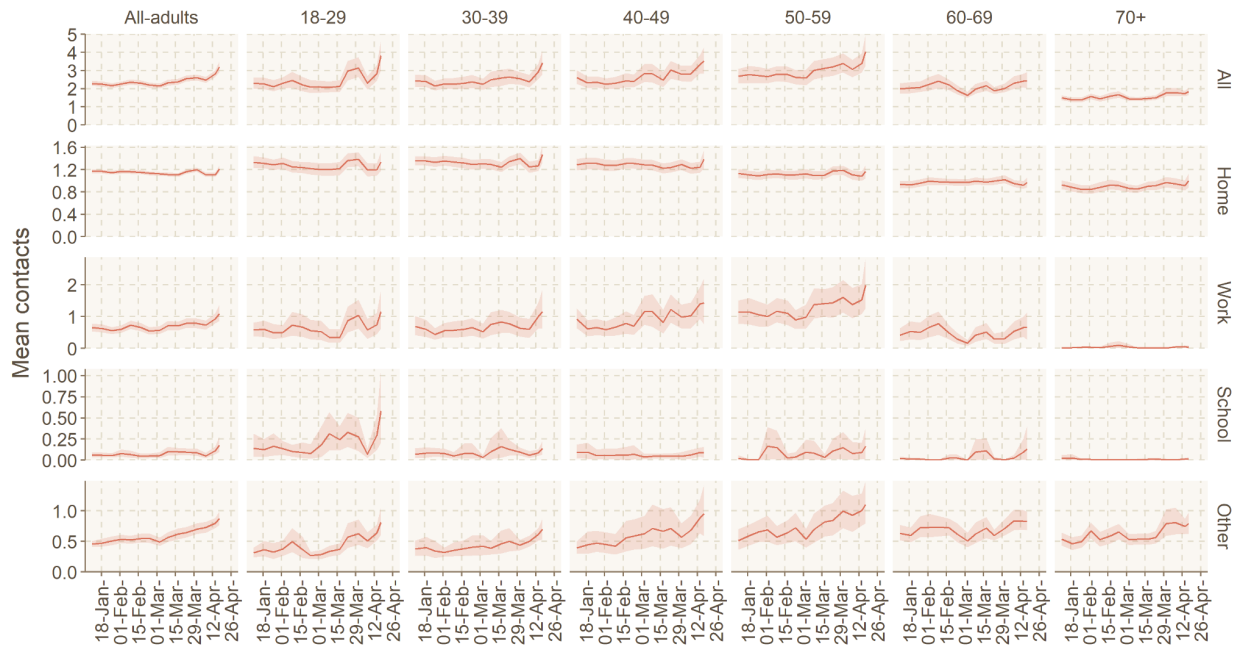
Figure S1: Setting-specific mean contacts by age-group for adults over time. Uncertainty calculated using bootstrapping. Contacts truncated to 50 contacts per participant. Observations are smoothed over two weeks to account for panel effects. Educ = educational setting. Date on x axis refers to the midpoint of the survey period.

Figure S2: Setting-specific mean contacts by age-group for children over time.
Uncertainty calculated using bootstrapping. Contacts truncated to 50 contacts per participant.
Observations are smoothed over two weeks to account for panel effects. Educ = educational
setting. Date on x axis refers to the midpoint of the survey period.