CoMix Study – Social Contact Survey in the UK

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LONDON SCHOOL of HYGIENE &TROPICAL MEDICINE

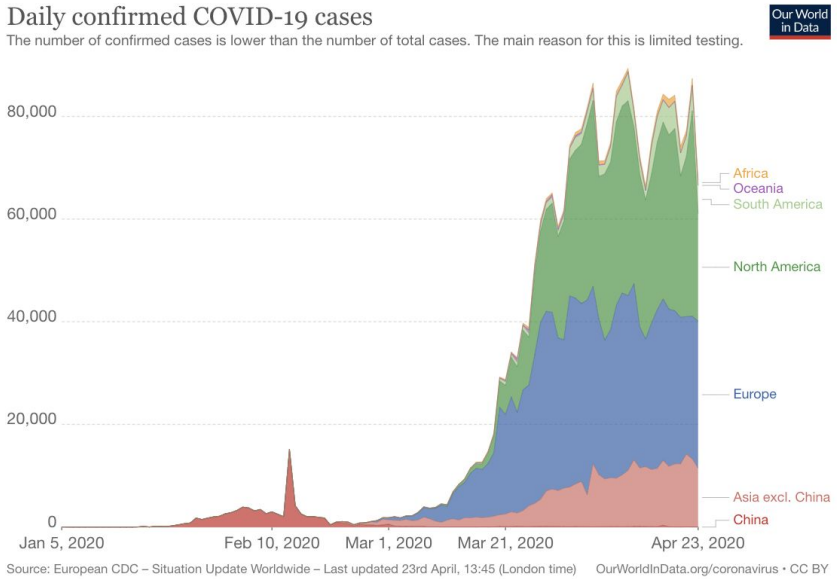
Challenges in real-time epidemic analyses

Research & operational questions:

- What is the current state of the epidemic?
- What should we plan for next?
- Are our policies having the intended effect?

Common data sources

- Cases
- Hospitalisations
- Deaths



https://ourworldindata.org/coronavirus-data

Contact Surveys

Surveys

- Ask who did you meet with yesterday
- Usually a face-to-face conversation

Aim:

- Understand how people mix with one another
- Preparation for infectious disease health emergencies

Application:

- Parameterize models (effective contacts)
- Estimate basic reproduction number

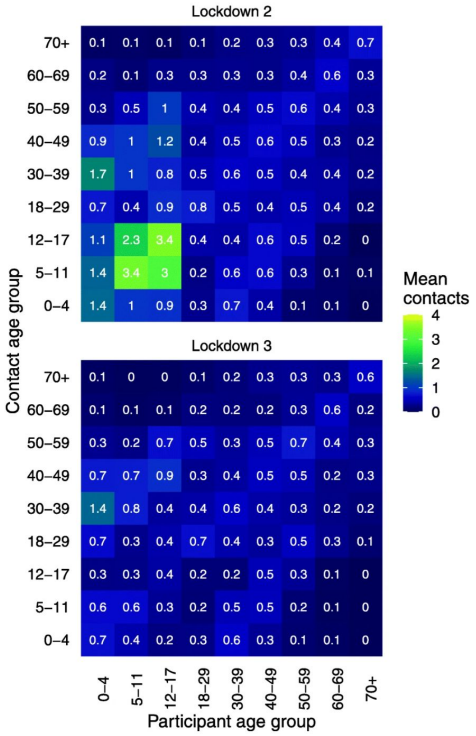


Figure credit: Munday et al, 2021

Aims - CoMix

1. To collect accurate estimates of the following data during the Covid-19 outbreak
    a. Frequency of **age-specific social contacts and their characteristics**
    b. Household and individual level **exposures to social distancing interventions**
    c. **Uptake of individual preventive measures**
    d. Changes in attitudes and risk perceptions regarding the Covid-19 epidemic
2. To create **social contact matrices** that can be used to parametrize epidemiological transmission models
3. To assess the **impact of different social distancing interventions** on social mixing within the population
4. To use mathematical models to **inform public health policy decisions** related to Covid-19 outbreak.

Aims - Contact patterns

1. How many people are meeting other people?

2. Where are they doing it? (Home, Work/School, Other/Leisure)

3. Who is meeting whom? (Age and gender mixing)

4. How do contact patterns change over time and with restrictions? (What happens when you tell people to do things?)

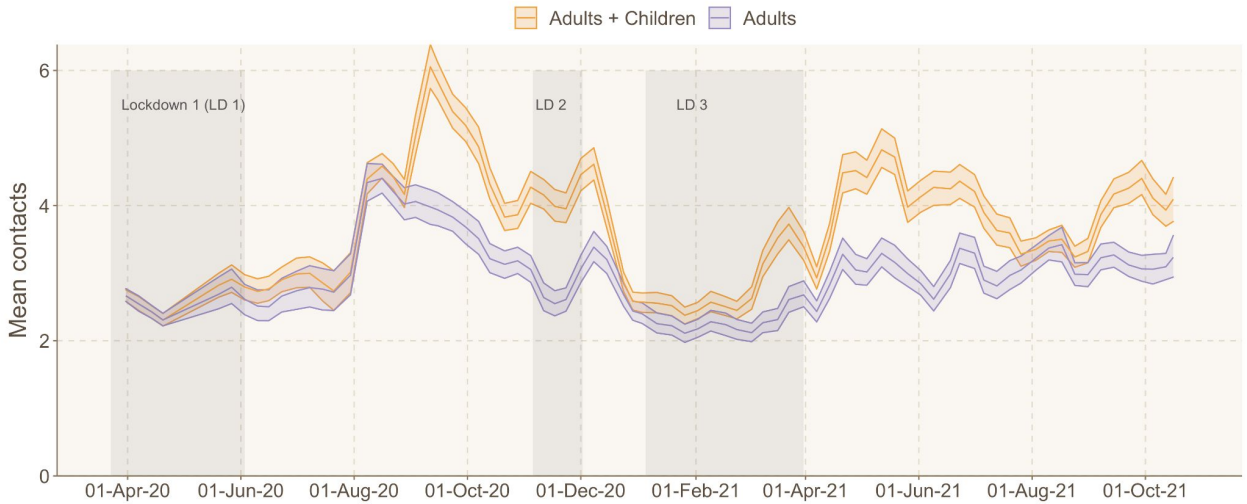
CoMix Survey - original plan

- Participants
  - Initial recruitment of ~1,500 adult participants in the UK, BE, NL
  - Collect data every two weeks for 8 rounds (16 weeks)
  - Representative of the population by age, sex, region

- Online Questionnaire
  - Demographics
  - Behaviours
  - Attitudes
  - Impact of NPI
  - Social Contacts

CoMix Survey - what happened

- 2,500 adults and 500 children every week for the UK from 23rd March until end of Feb 2022. (~100 weeks, 83 weeks done so far)
- Data every two weeks for for Belgium, Netherlands, and Norway for 8 rounds.

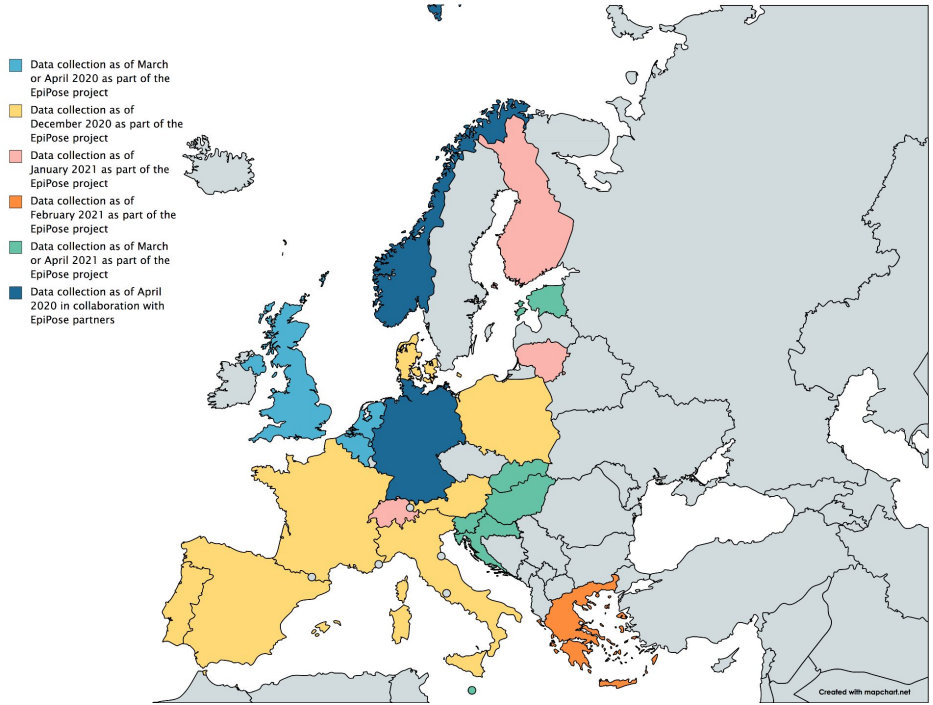


CoMix Survey - European study

- From 21st December 2020 to 15th September 2021.
- 17 European countries
- 164 waves
- 140,359 responses
- 22,468 participants
- 60+ reports

Overall:

- 70,000+ participants
- 300+ waves
- 24th March 2020 to 1st November 2021
- 100+ reports



Results

Research article | Open Access | Published: 07 May 2020

Quantifying the impact of physical distance measures on the transmission of COVID-19 in the UK

Christopher I. Jarvis, Kevin Van Zandvoort, Amy Gimma, Kiesha Prem, CMMID COVID-19 working group, Petra Klepac, G. James Rubin & W. John Edmunds

BMC Medicine **18**, Article number: 124 (2020) | Cite this article

25k Accesses | **138** Citations | **217** Altmetric | Metrics

Research article | Open Access | Published: 19 February 2021

The impact of local and national restrictions in response to COVID-19 on social contacts in England: a longitudinal natural experiment

Christopher I. Jarvis, Amy Gimma, Kevin van Zandvoort, Kerry L. M. Wong, CMMID COVID-19 working group & W. John Edmunds

Research article | Open Access | Published: 10 September 2021

Estimating the impact of reopening schools on the reproduction number of SARS-CoV-2 in England, using weekly contact survey data

James D. Munday, Christopher I. Jarvis, Amy Gimma, Kerry L. M. Wong, Kevin van Zandvoort, CMMID COVID-19 Working Group, Sebastian Funk & W. John Edmunds

BMC Medicine **19**, Article number: 233 (2021) | Cite this article

730 Accesses | **19** Altmetric | Metrics

CoMix: Changes in social contacts as measured by the contact survey during the COVID-19 pandemic in England between March 2020 and March 2021

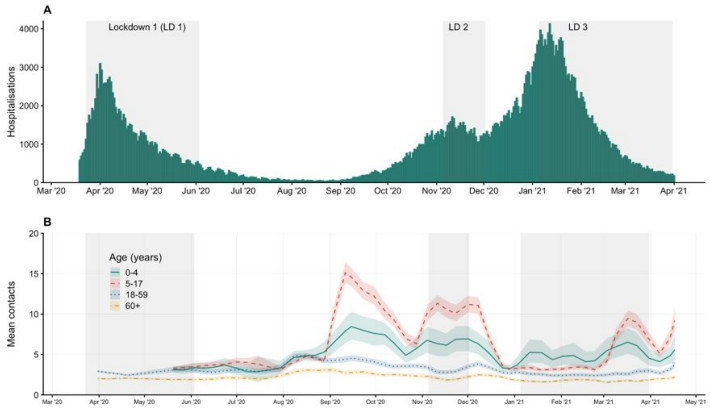
Amy Gimma, James D Munday, Kerry LM Wong, Pietro Coletti, Kevin van Zandvoort, Kiesha Prem, CMMID COVID-19 working group, Petra Klepac, G. James Rubin, Sebastian Funk, W John Edmunds, Christopher I Jarvis

doi: https://doi.org/10.1101/2021.05.28.21257973

Social contacts in the UK from the CoMix social contact survey
Report for survey week 79

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, 05 October 2021
Data up to 29 September 2021



Results - Ro = 0.62

Coronavirus: UK lockdown has cut social contact by three-quarters, says study

A study shows the government's restrictions are having the necessary impact required for COVID-19 to be brought under control.

Philip Whiteside
News reporter

Wednesday 1 April 2020 20:36, UK

The finding that the mean number of contacts per person measured is more than 70% lower now than before the lockdown suggests that the R0 reproduction value now would be between 0.37 and 0.89, they said, with the most likely value being 0.62.

Research article | Open Access | Published: 07 May 2020

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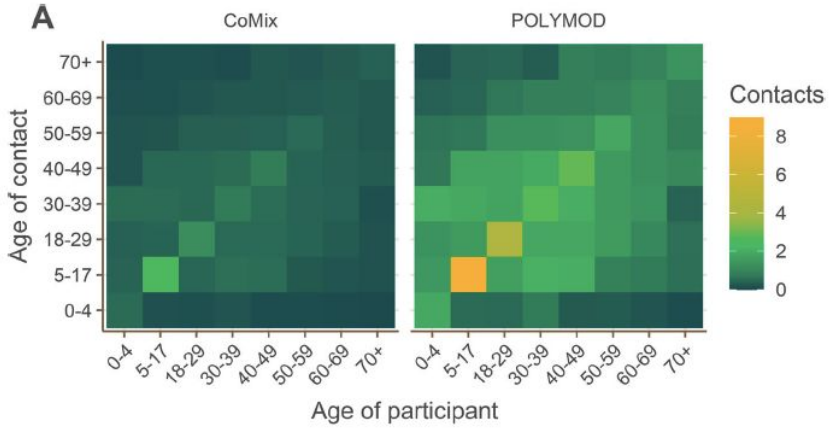

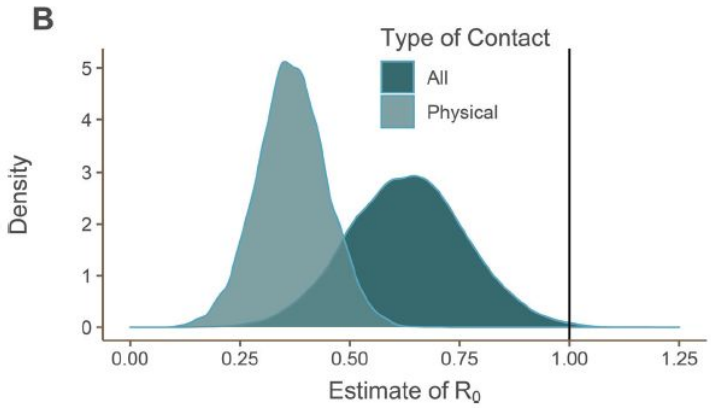

Results - Impact of local restrictions

News > Health News

RULE BREAKER Rule of six and 10pm curfew on pubs likely to have 'ZERO effect' on reducing Covid spread, study claims

Terri-Ann Williams, Digital Health & Fitness Reporter
13:19, 26 Oct 2020 | **Updated**: 14:04, 26 Oct 2020

Research article | Open Access | Published: 19 February 2021

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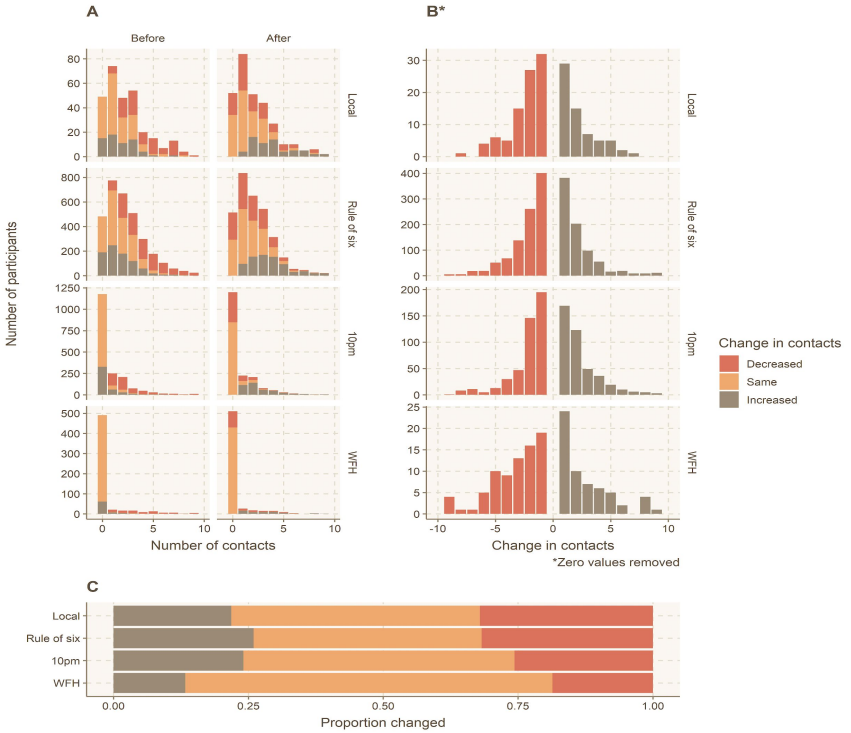


Result: Weekly reports

Rules and advice don't slow the spread of the virus – human behaviour does

David Spiegelhalter and Anthony Masters

Surveys can help us understand how the pandemic is influenced by our choices

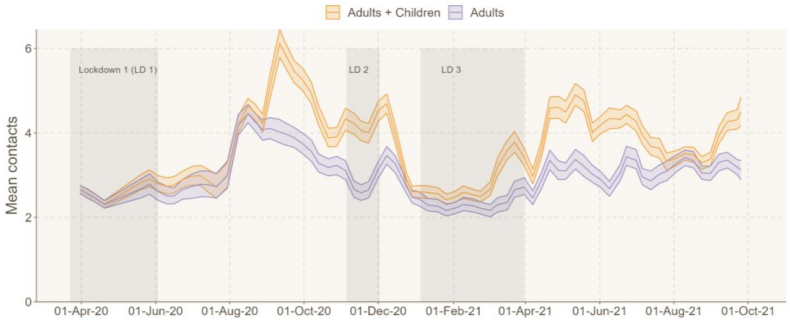


Figure 1: Mean contacts in the UK since the 23rd March 2020 for adults and children (all participants) and adults only (18 year +). Uncertainty calculated using bootstrapping. Contacts truncated to 50 contacts per participant. Observations are smoothed over two weeks to account for panel effects. Date on x axis refers to the midpoint of the survey period.

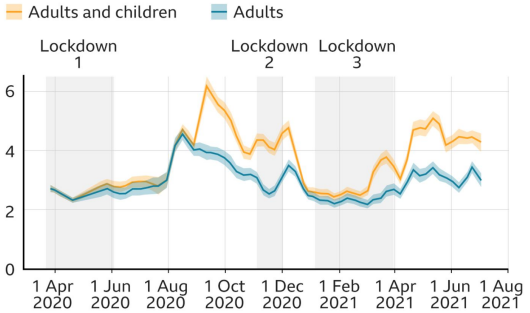
What is driving the rise in UK Covid cases?

A drop-off in mask wearing and slow uptake of booster jabs are among the reasons for the continuing growth

- Coronavirus – latest updates
- See all our coronavirus coverage

No surge in social contact in England after phase three unlocking

Mean number of daily face-to-face contacts per person surveyed



Source: CoMix social contact survey, data to 6 July 2021 BBC

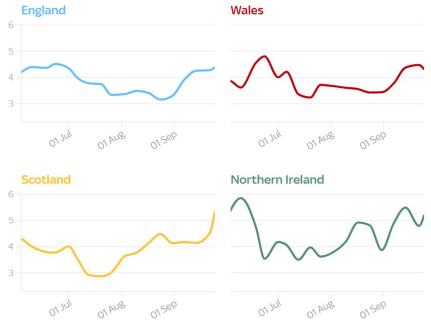
Do people feel comfortable socialising?

Another important driver of infection rates is people's behaviour.

Surveys show that the vaccine rollout and the lifting of coronavirus restrictions have altered the average number of daily face-to-face contacts.

How much are people socialising?

Mean number of daily face-to-face contacts per person



SOURCE: CoMix social contact survey

Result: Main points

Large reduction in contacts

- 70% lower than pre-pandemic levels.
- Currently at half the level - but different methodologies and survey fatigue.

Lockdowns cause big changes

- Quick decreases in contacts after they're imposed (Closing schools WFH).
- Slow increases after they're lifted.

1st lockdown unlikely to have reduce R < 1 for newer variants

- Natural immunity and vaccination key to achieve this.

Survey challenges

Contact patterns

- Distribution of contacts
- Small changes

Social changes

- Defining a contact
- Behaviour changes

Special populations

- BAME populations
- Lower SE

Policy changes

- UK
- International

Pandemic challenges

Demanding

- Adapting survey in real-time
- Cleaning, analysis, and interpretation

Lots of attention

- Work gets picked up easily
- Balance of being useful and being sustainable

Lots of money but few skilled people

- Contact surveys are complex
- Difficult to get people up to speed

Sample changes over time

- Fatigue
- Capturing contacts

Acknowledgements

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  - European Union Horizon 2020 Research and Innovation Programme (EpiPose 101003688)
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  - EpiPose Consortium
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Questions?

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