

Notes on Festive Period

These have been gathered from SPI-M-O members based on early work and discussion. They do not represent the results of a specific commission of individual policies, nor are they derived from well-developed modelling.

Final version. Original note of 15 November slightly updated after discussion at SPI-M-O on 18 November.

Summary

- Any relaxation over festive period will result in increased transmission and increased prevalence, potentially by a large amount.
- A parallel can be drawn, albeit on a different scale, between the return of students in Autumn and people from different households mixing intensively over Christmas.
- Action to keep prevalence low before Christmas will reduce transmission during a relaxation period.
- There may be a role for using rapid testing to assess and manage risks.
- Bubbles of households may be better than limiting contacts to a specific number, but faithfulness to bubbles is paramount.
- Limiting school and workplace contacts around periods of enhanced household mixing is highly beneficial. Hospitality may be particularly risky during this period. The concept of a “social contact budget” could be useful for communicating the increased risk and need to reduce other contacts if they are increased in social settings.
- Increased contacts outside of households, retail, worship etc, will also require consideration.
- Bubbling would be most effective if time-limited to less than one generation time of infection (about one week).
- The degree of adherence is more important than the precise rule. We therefore favour a simple rule which makes sense and is easy to comply with.
- People should understand that there is risk in visiting their older loved ones, those risks can be decreased by minimising other contacts in the week preceding a visit. Socialising before seeing older relatives is more risky than doing so afterwards.
- Think about the environment (setting) for gatherings, who hosts, and who clears up. SAGE’s environmental modelling subgroup are finalising a paper on celebrations and observances.

Potential Threat

Substantial mixing of people over a short period of time, especially those who do not make contact regularly during a month represents a significant risk for wide-spread transmission (high confidence).

- Other respiratory infections suggest that exposure of elder family members to respiratory disease is increased during a normal festive period. This is not a theoretical risk
 - Increased incidence of adult pneumococcal pneumonia during school holiday periods <https://openres.ersjournals.com/content/3/1/00100-2016>

- The burden of influenza in England by age and clinical risk group: A statistical analysis to inform vaccine policy <https://pubmed.ncbi.nlm.nih.gov/24291062/>
- Increased mixing will increase transmission of other infections, e.g. influenza
- SARS-Cov-19 has demonstrated high secondary attack rates in households (with estimates of up to 50% in one household becoming infected from one infected member).
- The prevalence could easily double during a few days of festive season, with further multiplicative increases as new infections go back to their “routine” networks.

Importance of Prevalence

The risks to individuals are largely driven by the prevalence of infection – the chances that somebody you meet with is infected (see figure) (high confidence).

- Reducing the prevalence of infection in households that are going to meet is an efficient risk mitigation to both population and individuals. Isolation of a household for 10 days with no symptoms increases their chance of zero infections.
- Individuals who are already isolating (especially vulnerable people living alone) are at very low risk of being infected and could potentially join together in limited numbers with very low risk. For example, members of “retirement communities” provided that all members have been careful.

Household Bubbles

Allowing households to “bubble” (i.e. effectively form a single, larger, isolated household) reduces the risks, but is very susceptible to small numbers of links between bubbles. The larger the number of households forming bubbles, the greater the risk of “extra-bubble” contacts. (medium confidence)

- For blended families (e.g. parents in separate households) formation of bubbles may be inevitable. Emphasising the importance of maintaining faithfulness to bubbles in the two weeks prior and the two weeks post gathering is important.
- Households that are already bubbling (e.g. for childcare support) should ideally remain bubbled, even if the size of bubbles increases.
- Bubbles are likely to be much more effective than limiting the number of people, if these people come from different households. However, limiting the number of contacts (e.g. to 8 not including children) is better than no control.
- Limiting the number of households in a bubble is likely to be simpler than limiting the number of people in a household-based bubble, for example 4 households rather than household bubbles of up to 12 people.
- Allowing people to form different bubbles over the course of the festive period would be worse than limiting them to a single bubble.

Extra-household contacts

If households are allowed to mix more, then schools and workplaces should be closed for the duration of the increased mixing plus a period afterwards so that the increased transmission is not propagated through those networks (medium confidence)

- Messaging and regulation for healthcare and social-care staff should be given special consideration.
- Settings in which extra-bubble or extra-number contacts are likely (e.g. pubs on New Year’s Eve) pose a particular risk.

Time Duration

Duration of the period is critical. The period of “new networks” should be shorter than one generation time so that the transmission occurs in events rather than outbreaks (high confidence)

- For example, if people infected on 23 December become infectious before 31 December (allowing two generations of infection), this would be substantially worse than a larger number of first-generation transmissions within the same households.
- Limiting the period of extra-mixing to 7 or 8 days may limit increase to one doubling of prevalence.

Environmental setting

Setting for gatherings is important (medium confidence).

- Families should be encouraged to gather in places where the smallest number of people have to share bedrooms, and there is a larger number of bathrooms.
- Division of labour for cleaning bathrooms etc potentially important, e.g. more vulnerable people not left with a house to clean.
- See EMG papers for more on households, ventilation etc.

Messaging

Simplicity is key to messaging (high confidence – see SPI-B papers)

- Extending the bubbles to a larger number of households but obtaining better compliance for faithfulness would be potentially better than having smaller bubbles and lower compliance.
- Messaging that any household member displaying Covid symptoms should result in isolation of the household is important (and will save lives).

Testing

If large volumes of lateral flow tests are available for people without symptoms, targeting them at younger age groups (who are also less likely to develop symptoms and therefore seek PCR tests) is likely to be disproportionately beneficial.

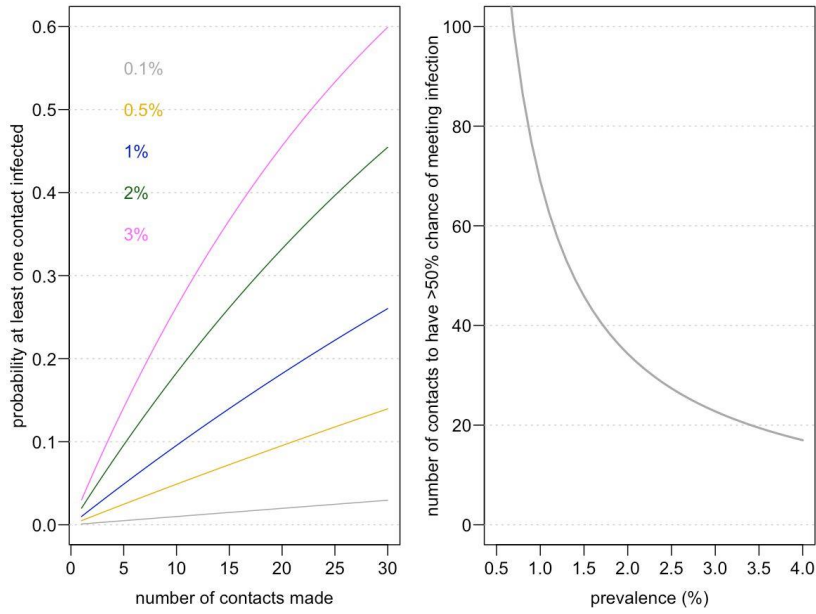


Figure 1: Probability that at least one contact out of a given number of randomly made contacts will be infected with SARS-CoV-2, for different levels of local prevalence (i.e. 0.1–3%), and number of contacts that would need to meet to have at least a 50% chance of meeting at least one infected person under different levels of prevalence.