Message

**From**: Vallance, Patrick (GO-Science) [P.Vallance1@go-science.gov.uk]
**Sent**: 28/07/2020 06:14:06
**To**: Ferguson, Neil M [I&S]; John Edmunds [I&S]; McLean, Angela SCS (CSA-Personal) [Angela.McLean113@mod.gov.uk]; Graham Medley [I&S]
**CC**: Government Chief Scientific Adviser (GO-Science) [GCSA@go-science.gov.uk]; Government Chief Scientific Adviser (GO-Science) [GCSA@go-science.gov.uk]
**Subject**: RE: Age effects

Thanks. I think PM now very clear that numbers are increasing and action needed now rather than a 2-3 week wait

Patrick

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**From:** Ferguson, Neil M <[I&S]>
**Sent:** 27 July 2020 21:55
**To:** John Edmunds <[I&S]>; Vallance, Patrick (GO-Science) <P.Vallance1@go-science.gov.uk>; McLean, Angela SCS (CSA-Personal) <Angela.McLean113@mod.gov.uk>; Graham Medley <[I&S]>
**Cc:** Government Chief Scientific Adviser (GO-Science) <GCSA@go-science.gov.uk>
**Subject:** RE: Age effects

Yes, I noticed the case numbers creep up. Not unexpected, though I worry that it's not widely appreciated that with a generation time which could be as long as 7 days (cf Ben Cowling's science paper), it likely takes 2-3 weeks to see any effect of contact changes in Pillar 2 testing data. I am increasingly worried about secondary schools reopening in 5 weeks.

It would be interesting to see the relative (multiplicative) increase in contacts by age. But it does appear that >65s have increased contacts less than other age groups.

Neil

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**From:** John Edmunds <[I&S]>
**Sent:** 27 July 2020 20:52
**To:** Vallance, Patrick (GO-Science) <P.Vallance1@go-science.gov.uk>; Ferguson, Neil M <[I&S]>; McLean, Angela SCS (CSA-Personal) <Angela.McLean113@mod.gov.uk>; Graham Medley <[I&S]>
**Cc:** Government Chief Scientific Adviser (GO-Science) <GCSA@go-science.gov.uk>
**Subject:** Re: Age effects

As promised, here are the CoMix data. These are mean contacts, either in total, or just concentrating on non-household members. To take out the effect of a few people who report large numbers of contacts, this is a trimmed mean (contacts over 100 per day are truncated at 100). There is a clear increase in contacts over time, but this increase has been smallest in the over 70s – confirming your hint from the Pillar 2 data, Neil.

By the way, in other news: IT DOES LOOK LIKE CASES ARE NOW GOING UP.

John

**From:** "Vallance, Patrick (GO-Science)" <P.Vallance1@go-science.gov.uk>
**Date:** Sunday, 26 July 2020 at 11:27
**To:** Neil Ferguson <I&S>, "McLean, Angela SCS (CSA-Personal)" <Angela.McLean113@mod.gov.uk>, Graham Medley <I&S>, John Edmunds <I&S>
**Cc:** "Government Chief Scientific Adviser (GO-Science)" <GCSA@go-science.gov.uk>
**Subject:** RE: Age effects

Very interesting and I will be interested to see the fuller document.

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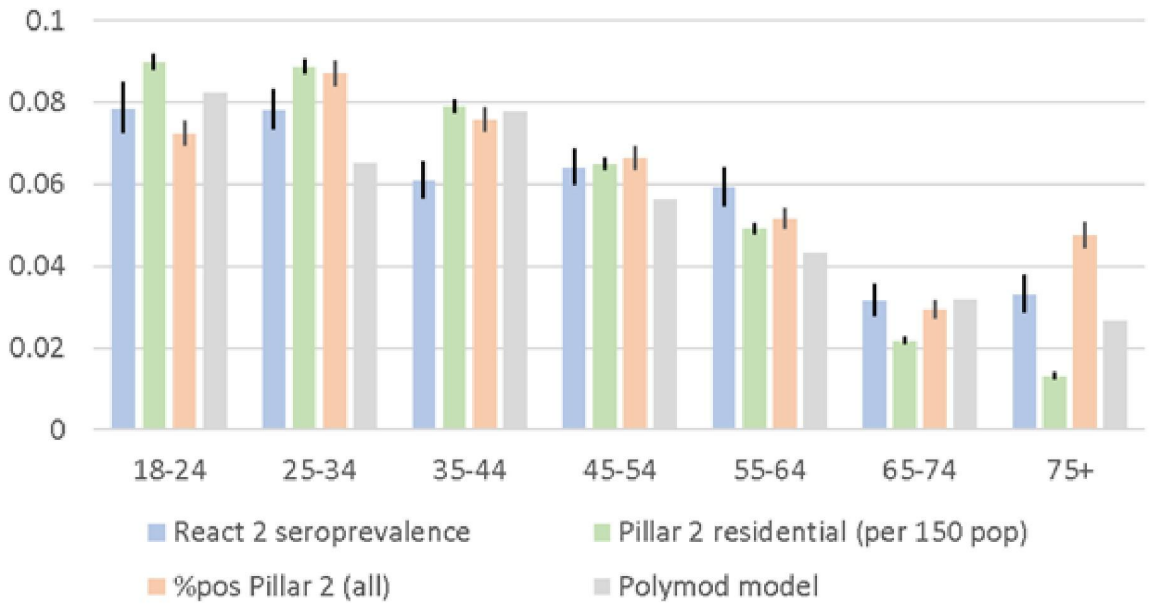
**From:** Ferguson, Neil M <I&S>
**Sent:** 25 July 2020 18:25
**To:** McLean, Angela SCS (CSA-Personal) <Angela.McLean113@mod.gov.uk>; Graham Medley <I&S>; John Edmunds <I&S>; Vallance, Patrick (GO-Science) <P.Vallance1@go-science.gov.uk>
**Subject:** Age effects

I've been comparing the pillar 2 testing data with the results of the React 2 serological study:




The second column is the incidence per 150 people (chosen for the scale to match the other series) of pillar 2 testing in June and July for residential dwellings (including multiple occupancy houses but excluding care homes and other institutions). The third column is the % of pillar 2 tests positive in June and July (not able to stratify this by setting, so it includes care homes). The 4th column is the seroprevalence predicted by our age structured compartmental model, which uses Polymod contact survey data (not showing uncertainty, which is large).

Four points:

1. There is no indication that the proportion of infections which are symptomatic varies markedly with age, except perhaps in the 75+ age band, given how similar the seroprevalence is to the symptomatic testing results.
2. React 2 seroprevalence is well-predicted by the model, which implies that lockdown reduced contacts across all age groups by about the same factor (consistent with CoMix results).
3. There is hint from Pillar 2 data that the over 75s (and maybe the >65s) in residential dwellings may now be continuing to socially distance more than other age groups – comparing green with blue. However, this may be

an artefact. Those in the 75+ age group may be more likely to seek healthcare via GPs or hospitals and end up being tested via pillar 1.

4. The higher %pos in the 75+ age group likely reflects ongoing higher infection levels in care homes – and the level of testing in those settings.

The first of these conclusions is slightly surprising to me. The third merits more investigation – though we would likely need the data on negative test results to be broken out by setting in the same way the positives are.

I'll put this into a quick document for the next SPI-M meeting.

Best

Neil