#### Message

From: Rubin, James I&S

Sent: 13/03/2020 20:28:09

To: David Halpern [david.halpern@bi.team]; Chris.Whitty@dhsc.gov.uk
CC: Vallance, Patrick (GO-Science) [P.Vallance1@go-science.gov.uk]

Subject: RE: Important - academic article that may support Chris Whitty quarantine fatigue point

### Thanks David

You might also be interested in rates of public worry during swine flu, based on DH polling. High(ish) worry during first wave, then a habituation during the second wave.

### https://www.journalslibrary.nihr.ac.uk/hta/hta14340-03/#/abstract

But the problem is that by then it was seen as a mild illness. We might get a similar habituation with Covid. But the number of deaths reported will be much higher than swine flu so it is not necessarily a good parallel.

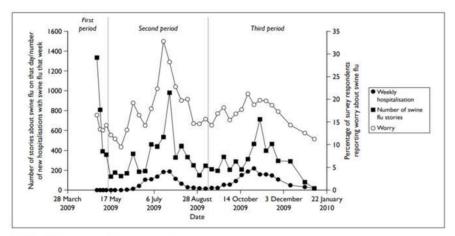


FIGURE 3 Changes over time for hospitalisations, media reporting and worry

From: David Halpern <david.halpern@bi.team>

Sent: 13 March 2020 19:00 To: Chris.Whitty@dhsc.gov.uk

Cc: Vallance, Patrick (GO-Science) < P. Vallance1@go-science.gov.uk >; Rubin, James Name Redacted

Subject: Important - academic article that may support Chris Whitty quarantine fatigue point

Chris – paper I mentioned. Also interesting wrt second peak (though from different historical period).

david

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2762764/

# Behavioural responses to influenza pandemics

## What do we know?

### 1918 influenza pandemic

Regarding the effectiveness of Non Pharmaceutical Interventions, one of the difficulties was public compliance. Compliance was seen to wane with time (when the preliminary wave of fear declined), for

environmental reasons (keeping people indoors on hot nights) [20], for reasons of psychological stress due to isolation [21] or quite simply once they were no longer compulsory. Some governments did not reimpose social distancing measures during the second wave of the epidemic because of the major disruption they had caused [22].

Regarding the effectiveness of NPIs, the most systematic study identified by the literature search examined 43 cities across the United States with markedly different incidence and mortality rates[12] [13]. Overall, those cities which implemented the largest range of NPIs (as listed above), the earliest, and the longest experienced the least mortality and were able to spread out epidemic peaks. Similarly, a model using historical data from 17 American cities found that those which introduced NPIs the soonest effectively slowed down the progression of the epidemic and reduced cumulative death rates by c. 50%; however, cities implementing NPIs during the first wave were at greater risk of mortality during the second [14].

Public behaviour is likely to be similar in some respects (waning compliance with prevention measures as fear declines), but it is difficult to determine the respective effects on the population of the on-going "war effort" (in 1918) and a heightened perception of personal health and exposure to risk (today).

Conclusion Two, population adherence to public health measures and messages might well be high

during the initial	phase of an epi	demic perceived	as dangerous, bu	ut then decrease	with time.
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