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**Sent:** 13/10/2020 14:07:04  
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**Subject:** RE: Three flavours

Thanks Jonathan

The three options are very roughly sketched out, but broadly in order to balance harms across the board it is far more efficient, epidemiologically speaking, to act sooner rather than later. The efficacy of a time-limited stopper like the fire break is lowered the higher the background prevalence, which leads to diminishing returns.

Unfortunately, this is diametrically opposed to the seemingly logical preference of doing things a little bit at a time, which will assuredly slow the growth, but will leave us with an increasingly untenable burden of disease within the population.

I would absolutely agree that such an action would need to be time limited, but the current interventions are not sustainable without behaviour change, and they in themselves represent a reduction to around  $R_t=1.3$  – a brilliant reduction from  $R_0=3$ , but not enough to prevent the inexorable rise associated with a positive exponential curve.

The options offered are, in part, driven by the underlying association with the R number. The greatest health and healthcare benefit comes from driving the R number down as far as possible. The greatest economic benefit comes from having as much open as possible (simplistic extremes, I will admit).

Therefore the balance of harms comes with having R at approximately 1, in a sustainable fashion. Since R cannot be held at 1 in real life, then we seek to reduce prevalence enough that an R of around 1.1 from the end of the firebreak would be within the tolerances of the healthcare system, and would then seek to prioritise partial opening of as many sectors as possible, based on the data we have gleaned over the past six months, and advised by your team, the mental wellbeing specialists, community and health experts and colleagues in NHS and Public Health who can tell us what the system will bear if we are to maintain control

Realistically, I think that any decision other than trying to balance the harms would be untenable for long term survival of a nation, but I was asked to present 3 rough options and sketch out what interventions might be associated with each. This needs 3 months of careful development, which we do not have. The initial modelling for SAGE gave the most effective firebreak starting on 4<sup>th</sup> October.

What I can say is that, if the 2-3 weeks is expensive, it is far cheaper than going to meltdown and needing to do it for 3 months. Cost is relative!