Twitter Thread by Ewan Birney



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I am not full sure people appreciate the impact of B117 strain on the course of the pandemic. TL;DR B117 is "a pandemic inside a pandemic" and demands both monitoring and preparation for when it arrives in a location. Vaccination is even more of a priority due to B117.

Context: I am an expert on human genetics and computational biology. I know experts in viral evolution, testing, infectious epidemiology, clinical trials. I have COIs in that I am long established consultant to @nanopore and I am on the Ox/AZ vaccine trial.

B117 clearly transmits faster. This has been clear in a UK context now for over a month, with particularly insightful backtracking of growth of B117 from low levels through October/November; it is true in Denmark; it is true in Ireland.

(Shout out the fast responding science of @CovidGenomicsUK, of the analysis of @jcbarret and @arambaut, of clever genomics-epi models of @MoritzGerstung and @harald_voeh and on it testing / spidey sense of @The_Soup_Dragon)

(In Denmark their excellent genomic surveillance, similar to UK's allows Denmark to know about the growth of B117 from low level in the context of other strains - props to @MadsAlbertsen85 and colleagues; In Ireland it is becoming one of the dominant variants)

There are pretty firm signs of growth of B117 in the USA from @alexbolze - this is interesting in that S-gene target failure is not a good enough proxy (yet) for B117 growth - Mass. has appreciable S-gene target failure but it is not the B117 variant. It is growing in Cal and FL.

B117 is likely to grow everywhere; almost certainly where the other variants were held at around R~1, and possibly other places. It's final growth rate in different settings will be somewhat different, but across UK, DK+IE, doubling every week is a crude estimate in 2020 settings

Doubling every week means *8 fold* in a month and *64 fold* in two months. As @AdamJKucharski says, this is a pandemic inside a pandemic. It *will* rapidly move through populations.

The lack of aggregate growth now in cases in a particular country or region either means (a) you haven't got B117 yet (be happy) or (b) it is present but growing from low levels (as it did in the UK in September/October). (b) is both realistic and the very high risk situation.

A reminder that this virus causes a nasty disease (COVID) which often leads to death. This means that when the virus moves through the population the healthcare service has extraordinary patient pressure, far, far beyond the capabilities for it to match.

What to do? This is complex and ultimately has to work inside a country's and region's response, and most of it is obvious. I am not a pro at this but I do have broad scientific expertise and keep touch with experts across fields. These are just my views, informed by this network

1. No stone should be left unturned on improving vaccination rates. Vaccination in a risk stratification manner will reduce - potentially quite radically - the health care capacity issues.

1. (cont). It is clear from the vaccination rates in Israel, Bahrain, UK, US and Denmark that one can vaccinate at a reasonable rate in countries - Israel being a stand out performer - but all these countries doing reasonably well.

2. One should gather S-gene target failure tests over the 69-70 deletion, and sequence a subset of these (randomly drawn ideally) to be able to plot growth of B117 in a country. Ideally one randomly sequences a subsets of positives regardless of test (as UK+DK have been doing).

3. If B117 levels are low one should use S-gene target failure tests to prioritise TTI levels around S-gene target failures (the false positives for it not being B117 is probably fine to tolerate)

4. As B117 grows one will have to move to more blanket lockdown measures. Across the pandemic the mistake is often to have to see solid evidence of growth; I would urge not making this mistake and "go early, go hard"

Ultimately 2, 3 and 4 are about slowing the growth of B117 - ie, tactics for a strategic aim. The strategic aim is 1 - vaccination. Nothing - nothing - should slow down safe progressive vaccination in any setting.

Finally as ever this is not a competition between nations; despite the sometimes intense inward looking discussions inside countries this is about humans vs virus; we need to help ourselves be safe; our family; our neighbours; our global humanity. Cheesy but nevertheless true.