



# COVID-19

## UK Political Analysis

By Tim Hames, Senior Adviser | 19<sup>th</sup> February 2021



### Policy Paradox. Mass vaccination makes mass testing more essential.

This has been a slightly strange week in this stage of the coronavirus crisis sitting as it has between the achievement of issuing the initial 15 million plus vaccinations by the time of the self-imposed February 15th deadline and the publication of the “roadmap” (or “the beginnings of a roadmap”) which the Prime Minister has pledged will occur on Monday. There has been a distinct effort to lower expectations about the level of detail that this document will entail with the emphasis placed on being driven by the “data” not “dates”. Anyone expecting life to change dramatically soon is destined to be rather disappointed.

What is becoming clear is that mass testing will have to increase in intensity and ideally in its ease of use to supplement the vaccination effort. This might seem, at one sense, to be counterintuitive. If there are fewer people about who are likely to fall seriously ill as a consequence of acquiring the virus then, one might have thought, the need for testing at an even higher volume would diminish. In fact, this not the case. The mass vaccination of the UK population is a very considerable event and one which will pay rich dividends. Yet by itself it is not the sole means by which, over the medium-term, our society and the UK economy can make its way towards something akin to the “new normal”. There will be significant cracks in the post-vaccination landscape that testing is essential to fill as well

as substantial sectors of the economy which involve activities where the risk of the virus reasserting itself is so sizeable that a return to the old normal will not be permitted.

## EXECUTIVE SUMMARY

- The stated medium-term aim of the UK Government is not to eliminate the virus (an impractical aspiration) but to “manage it”, much like society withstands the death toll from influenza (around 7,000 deaths in a typical year). With the virus having a death rate more than five times that of influenza, it is not appreciated how demanding an ambition this will be in practice. It is a numbing challenge.
- While vaccination will vastly reduce the number of people who are highly vulnerable to the virus it will not shrink that total to zero. The combination of individual decisions to decline a vaccination and the fact that the vaccine will prove to be ineffective in a minority of instances will mean that next winter the number of people who could catch the virus and die could still be significant.
- It is also unclear at this stage as to the extent to which vaccination not only provides personal protection but reduces the risk of transmission to others. While early results are encouraging, there will be some transmission effect.
- Furthermore, there is clearly the possibility of mutant strains emerging that are more resistant to existing vaccines and while vaccines can and will be adapted to deal with this, this involves a time-lag during which virus cases are likely to rise.
- Testing will have to play a part in the phased reopening of schools because children are not currently due to be vaccinated and thus they are a possible “back door” by which the virus could ultimately reach vulnerable adults.
- There are some sectors of social and economic life – large indoor social events, enclosed leisure activities and international travel – where even after very large scale vaccination has occurred, there will still be a larger virus risk than the norm.
- All of the above means that testing will be a substantial part of the equation not only while the vaccination drive is happening but also after it has occurred.
- The least disruptive means of incorporating regular testing in to the “new normal” will be if tests can be developed around a simple saliva sample that do not have some of the imperfections linked with the lateral flow device method.

Much as it did with its early backing of vaccines, the UK Government is likely to increase its already strong support for those now backing innovation in testing.

For completely understandable reasons, there is enormous interest in which activities in the social and economic sphere will be resumed and on what timetable. Speculation in the media has been rampant. Yet while the short-term is obviously important, those in business and elsewhere need to consider what measures will be needed in the medium-term (especially the winter months) and therefore what a true “new normal” might be.

## **Influenza and COVID-19.**

Ministers and officials have been explicit that the absolute elimination of COVID-19 in the manner by which Smallpox was removed as a threat to humanity is not a realistic exercise for some time to come, if ever. The objective instead is to reach a situation where the virus can be “managed” so that it is a limited menace to human life and liberty. Multiple references have been made to UK influenza deaths as a point of comparison.

This is a more challenging medium-term blueprint than it might seem. During the first wave of the virus, the death rate for COVID-19 was some ten times higher than that of influenza. Superior treatment has reduced that disparity but it is still at least five times more likely to trigger a hospital admission and ultimately a death than influenza.

In the typical year, influenza results in about 7,000 deaths in the UK, usually in winter (either directly or because what starts as influenza turns into severe pneumonia). This alone puts strain on the NHS every year. In a really bad year (usually due to an unusual strain emerging or extreme cold) it can reach three times that number. The impact on the NHS is then huge. In 2000, when influenza deaths reached 20,000 people, the effect across the wider NHS was such that then Prime Minister Tony Blair felt compelled to announce that the UK would seek to raise its spending on health to that of the European average (much to the ire of Gordon Brown, his Chancellor, who had been bounced).

In order for COVID-19 to be managed to similar levels, therefore, by next winter either there have to be further improvements in treatments which reduce death rates to that of influenza (which is possible over time but unlikely overnight) or the number of cases

among those most likely to die from it have to be reduced to levels well below that of influenza to compensate for the probability of a significant continued higher death rate. That implies a long-term drive to suppress the virus particularly during winter months. Even then, the NHS would be looking at a situation where in the average year it is dealing with twice the numbers of death of influenza and COVID-19 combined than it was with influenza alone (unless the number of influenza deaths can be driven down very sharply). This is a considerable policy dilemma that will be there even after the lockdown is lifted.

Another way of looking at the scale of the reduction in COVID-19 deaths needed is this. If COVID were to follow the pattern of influenza, with 75% of deaths between November 1 and February 28 and 25% of deaths in the remaining eight months, then this would mean an average of 44 deaths daily in the winter and of 7 deaths daily for the rest of the year. The probable daily average of deaths from November 1 2020 to February 28 2021 (when it arrives) is likely to be about 640 and that's with most of the UK in explicit lockdown for three of the four months concerned and with abnormal restrictions in December too. So, to emulate influenza and achieve a tolerable, if tragic, number of 7,000 deaths next year means achieving a 93% reduction in the average daily death rate without a lockdown. It is little wonder that Professor Chris Whitty has mused that some restrictions may still be needed at this time next year (not that his candour and critique on this one is popular).

## **The Vaccination effect.**

Matters are made immensely better by the early discovery and deployment of vaccines. This does not, though, mean that vaccination alone is enough to address the whole issue. There are three main reasons for this and they all have implications for future testing.

The first is that while the vaccination roll-out is extremely impressive it cannot be absolute. Some people will refuse the offer and others will discover that they are in the minority for whom it does not offer sufficient protection (every year there are some people who have had the influenza injection but nonetheless still die of the illness).

Some numbers illustrate this. Taking the 15 million people in the top four groups for vaccination, if we assume that 95% of them availed themselves of the opportunity and that the vaccines proved 95% effective (both top-of-the-range estimates) this would still

leave 1,462,500 people potentially exposed to the virus after the vaccination drive. If the vaccines were “only” 80% effective this would amount to 3,600,000 people. Moving on to the next 17 million people in priority groups five to nine, again assuming 95% take-up, then at a 95% effectiveness rate, there would be 1,657,500 potentially unprotected people and at 80% effectiveness that increases to 4,080,000 possible virus victims. Herd immunity might be of some assistance here, but it could not be relied upon to deliver.

These are not insignificant numbers. There is a positive and a negative feature of them to take into consideration as well. First is that the take-up rate for the COVID-19 vaccine even if it does not hold at 95% is much higher than the 70%-75% rate for influenza in key groups. Secondly, it has to be presumed that those who have the vaccine but turn out not to have enough protection from it are likely to have unusually weak immune systems so that if they were to contract the virus they would be at disproportionate risk from it. This would create an upward pressure if the virus asserts itself during every winter.

The second factor, beyond the raw numbers, is the matter of transmission. To what extent does the vaccine not merely offer personal protection but prevent the person who has been vaccinated from sending the virus on to an unvaccinated person accidentally?

The early indications here are quite encouraging. Vaccination does appear to cut the transmission effect and there is tentative data to suggest that where transmission will occur it will be in a weaker form than would otherwise have been expected. This is not, however, a 100% impact. It is likely to be at a high level but not as high as the protection rate. The chance of a vaccinated person infecting an unvaccinated individual is there.

The third and probably the most dangerous element to consider is the arrival of rogue mutant versions of the virus which are significantly more resistant to the vaccine and also (in all probability) increase the chances of virus transmission as well. The features witnessed in strains such as the South African variation means this is not the stuff of horror movies or science fiction. If mutations of this form were to occur then the number of people who think that they are protected but turn out not to be would inevitably rise. Scientists are confident that they could reconstitute the vaccine quite quickly but there would plainly be a time-lag to allow for manufacturing and another vaccination roll-out.

How can society ensure that it does not have to lock itself down again in such a period? An endless cycle of shutting down in advance of a winter surge is not an enticing notion. Vaccination can and will lead the charge against the virus but it is not a pure silver bullet.

## **Mass testing is here for some time yet.**

The answer to that question is that mass vaccination will have to be supplemented by mass testing and on a very regular basis (especially during the winter season).

Testing becomes, therefore, more important, not less, as we move forward.

First, because it is crucial to understanding how the virus develops in the future. Along with the long-established medical exercises conducted by the likes of the ONS and Imperial College London, it is the best means of maintaining intelligence on the virus and, for all the reasons outlined above, it will need to continue to be monitored closely. It can also provide an element of early warning about new hostile strains of the virus.

Second, it is likely to play an important role in the (probably phased) reopening of schools and potentially on a longer-term basis. Resuming primary school education is a social imperative but it will have to be done exceptionally carefully if it is not to lead to some increase in the reproduction number. If it starts on March 8th that will be at a moment when the vast majority of the first four priority groups will have received their initial injection and have had three weeks for there to be the desired effect on their immune systems. That will not be true for priority groups five through nine. More social interaction between children could push case numbers up again before the full force of the vaccination drive means that hospital admissions and deaths finally fall very sharply.

This is not simply a matter of the here and now in terms of testing and education. None of the vaccines being deployed in the UK were trialled on children. That process is only about to start. Even if the policy decision were made now that every child in the UK will be vaccinated, a mass roll-out here would not occur before late 2021 at the earliest. Until that moment was reached, children, whether in a school setting or a social one, will be the unvaccinated section of a generally speaking vaccinated society. They are hence the potential “back door” by which the virus eventually reaches those who will, alas, remain atypically exposed to it either because they are not vaccinated or the vaccine has not

worked for them. How to handle this risk will not end when schools are fully functioning. Exactly what level of continued testing occurs here will be determined by the data.

Third, there are aspects to lifting the lockdown which, even with mass vaccination, look very difficult to do with anything close to absolute safety without testing. On the social front, these include any kind of sizeable gathering that is conducted indoors. In terms of the economy, it involves everything from the lifts in large buildings to a range of indoor entertainment and sporting occasions to aspects of the hospitality sector such as night clubs where ministers and officials would be dubious that they could really be considered COVID-19 secure if social distancing and facemasks were not to be backed up by testing.

Finally, it is hard to see how international travel can easily be restored to its previous level if there is not testing before and after a journey, and possibly during a trip as well. Just as vaccination alone within a country cannot ensure absolute safety, vaccination passports or a similar device cannot guarantee against some international transmissions. Evidence of new and more difficult strains on the scene would increase caution further.

On the face of it, this would appear to be very disruptive indeed in the “new normal”. A person may find themselves tested at work, on entering a crowded bar and for holidays. Moving out of lockdown might not lift the spirits by anything like the level anticipated.

It might not be quite so unappealing. For a start, regular intrusive testing would have a strong seasonal quality to it. Our understanding of the virus is also improving rapidly to the point where we will be able to identify what further mutations are likely and build that into future vaccination campaigns, reducing the danger of a spike in caseloads.

There is also, crucially, the prospect of significant developments in testing technologies. The most reliable tests at the moment are the PCR types but they need to be sent away to be analysed which is time-consuming. The main rapid tests are the lateral flow device version which have virtue but which untrained people can find awkward to use correctly. They are well worth deploying but their characteristics put a limit on their effectiveness.

There are, nonetheless, a really very impressive range of new tests now in development. Many of them are based on a simple swipe of saliva and they offer the prospect of very accurate results in a very short period of time. They are not expensive. Much as it proved

to be in the case of vaccines, where it invested early and intensely in order to stimulate the accelerated development of science, the UK Government is now an active champion (and by far the biggest prospective customer) of these technologies. It has also, as again it did for vaccines, put a premium on domestic manufacturing capability at vast scale.

Mass vaccination and mass testing will now need to function in tandem with each other. The route to the “new normal” may turn out to be 75% vaccination and 25% saliva test.

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