By Tim Hames, Senior Adviser | 26th June 2020

Calculated Risk. Can a second spike in COVID-19 be contained?

Lockdown is loosening in the UK, as it has been in many countries across Europe. England, which was hit first by the coronavirus crisis, has moved the furthest. July 4th this year will be celebrated by more than just Americans. Yet the mood is cautious, even wary. The tone of Boris Johnson's statement in the House of Commons on Tuesday was certainly not one of celebration. Any move that enhances mobility involves risk, which is made harder by the reality that it is virtually impossible to measure the R number in anything close to instant time. Not only is some form of second spike likely, but it is very probable. The core issues are the size of any increase in infection rates, where these are most likely to occur, what sort of people are most likely to catch the virus, how swiftly those who had contact with them are traced and whether outbreaks be contained.

EXECUTIVE SUMMARY

- The working assumption has to be that the R number will exceed one in at least some localities in England and will probably do so by the end of July.

- This is very likely because the infection rate is still much lower at this stage than had been expected earlier in the crisis, there will be a significant level of misdiagnosis, international experience shows the danger of new outbursts, reduced social distancing will have an impact.
- There are, though, reasons to believe that the probable hotspots of any increased infection rates can be identified and that those who are most likely to be part of a new set of cases will be younger and healthier than the norm during the initial wave of the virus. This will limit the damage.
- Much will depend on the effectiveness of the testing and tracing system, which has had to be implemented in a highly improvised manner in the UK due to the initial failure to find a means for simple at-home antibody testing at scale and then the evident difficulties that have emerged in making a bespoke app for the NHS the essence of the tracking system.
- The underlying strategy is to seek to delay any serious increase in the infection rate until the winter when a vaccine may enter the equation. If it does not, the NHS would be placed under severe strain if it has to deal with both the annual influenza surge and a second spike simultaneously.

Why a second spike in the UK of some form is very likely.

There are a host of factors that, combined, make it hard to believe that there will not be some form of second spike seen in the UK, even if mild compared with the initial one. This is widely accepted by all concerned. The open letter published in the British Medical Journal on Wednesday and signed by the Presidents of the Royal Colleges of Surgeons, Nursing, Physicians and GPs which warned of the need to prepare for a second wave is best seen as an act of positioning in light of the enhanced tension between ministers, officials and outside experts, which was explored in this FTI Analysis last week. Even the Prime Minister is allowing himself some wiggle room. In his House of Commons address

he declared he did not think there was “a risk of a second peak of infections that might overwhelm the NHS”. This is not a form of words that excludes a second spike at all.

The first of these key factors is that the infection rate in the UK is much lower than that which was anticipated three months ago. In March one well-reported study from the Department of Zoology at Oxford University floated the possibility (in fairness it was one of a number of options) that, even then, some 38% of British residents had the virus already and this figure would rapidly rise towards 70% by the moment we have now reached. The evidence based on selective antibody testing (employed much as an opinion pollster can draw conclusions about mass sentiment from very small samples) is that the infection rate is not much higher than 7%. This means that there is a very large number of people in the country who have not had the virus but clearly could contract it. The UK is not unique in this regard, but the infection rate is surprisingly low allowing for what as a raw sum is a number of deaths exceeded only by the United States and Brazil.

The second factor is that there are reasons to believe that there is a high level of misdiagnosis in the public at large. Official surveys indicate that while the actual infection rate is a little over 7%, the number of individuals who think that they have had the virus and recovered from it without hospitalisation or formal antigen test could be double that. There is also a significant section of people who, because they were asymptomatic, have had the virus but do not appreciate this. They are, though, not a public health problem as a consequence of misdiagnosis. As the economy and society open up it is those who mistakenly believe that it is safe for them to interact with others in a fashion which they have avoided in the previous stages of lockdown who constitute a menace.

The third aspect lies in the demographics of England in particular, which makes the risk of increased transmission more intense than any other European country bar Belgium.

The fourth element is that the international experience of countries that either had the virus earlier than the UK, implemented suppression strategies that were even more

stringent than the UK, or appeared to have considerable success with an approach based on an exceptionally large amount of testing, shows how challenging it is to remove the virus as a threat completely. China has witnessed a fresh burst of cases in Beijing. South Korea has had to contend with a further outbreak based on nightclubs in Seoul. Even Germany, probably the most effective place in Europe in countering the virus in its opening manifestation, has had to respond to a very large outbreak found in a meatpacking facility in the Gutersloh district of North Rhine-Westphalia. The extent to which such incidents can be controlled by highly localised lockdown efforts is unknown.

The fifth component is that all the mitigation initiatives that the Prime Minister has set out cannot entirely counter the simple mathematics that a two metre distance is more secure in public health terms than one metre plus, nor the practical reality that it will be very hard to police even this requirement inside of establishments such as pubs and bars.

The sixth aspect is that the testing and tracing approach that circumstances have obliged ministers and officials to adopt is far from ideal and plainly not a watertight one. It requires individuals initially to recognise correctly that they might have the symptoms of the virus (which as previously noted involves considerable room for human error), then (if they test positive) accurately recall with whom they have been in contact recently and then for that set of people not only to say that they will self-isolate but actually to do it, even if it is economically or personally inconvenient for them. An app would have been far better, but devising one that met the high technical specifications that are required and which would be downloaded by the sizeable percentage of the population needed (about 70% of the 70% who possess a smartphone in the UK) has proved very awkward.

The final factor for consideration is the probable restoration of international travel in July. The Government has been in deep and detailed discussions with its counterparts in the likes of France, Greece, Italy, Portugal and Spain about the creation of “air bridges” which would allow for there to be at least a partial summer holiday season and an enhanced level of business travel as well. Unless the UK sees a sharp reversal in what has

now been a very steady fall in the total number of daily new cases and the daily death toll then it should be expected that flights will resume and do so on the basis of normal seating. This cannot but involve an element of risk. Attempts to limit this by, for example, heat testing passengers as they arrive at and depart airports is far from an exact science. Imported cases have been the main cause of difficulty for parts of China, Hong Kong and Singapore. It would take exceptional fortune for that not to be true in the UK.

The interrelationship between all of the above means that there will be upward pressure on the reproduction number. It is virtually impossible to avoid. Society cannot, however, continue in lockdown forever. There are ways in which the damage might be limited.

The measures that might keep any second spike in the virus at an acceptable level.

The Chief Scientific Officer and Chief Medical Officer for England would not have signed off on the list of measures that the Prime Minister has outlined simply to please him. The division between the condition of the economy and the state of public health is a more complicated and sophisticated one than set out in much of the media. Medical experts have sound reason to be concerned about the very steep fall in mainstream hospital visits and the mental health of millions of people if lockdown continued unabated.

There is a series of reasons why ministers, officials and experts alike believe that it is possible to contain any second spike so that it does not involve more than local (perhaps extremely local) lockdowns rather than anything resembling a full national lockdown (an event which everyone involved accepts that it would be harder to maintain compliance than proved during the original lockdown).

What is the rationale which affords Whitehall a degree of confidence on a second spike?

The first and the most basic is the time of year. There is a huge difference in the infection rates between activities conducted inside and outdoors. The estimates vary, but there is thought to be at least a twenty-fold distinction and some have put it as high as 200-fold. The British summer is, admittedly, not the most predictable of climatic undertakings but it should be easier to move activities outside, especially if councils are encouraged to allow for temporary road closures in urban areas to make al fresco dining more available. It also appears to be true that the virus dislikes exposure to direct sunlight. Whether this stays valid as it mutates is far from certain but if there were ever a time in the calendar when one might taken a calculated risk in liberalising a lockdown, it is July and August.

The second factor is that those who model for these matters have a sense of where in England there may be the highest and the lowest chance of the virus staging a comeback. Evidence from Italy is that regions which were hurt the worst in the first wave (such as Lombardy) are least exposed to a second spike, while by contrast parts of the country that largely escaped COVID-19 in March and April (much of the heel of Italy fared well) are at more risk of being hit at the second time of asking. This makes eminent sense. The most vulnerable people in the places that suffered the most in the early stages of the virus have, to put it bluntly, already become infected and in many cases have died. So, in thinking ahead about where to deploy resources and where to be most sensitive that there might be the need for a pre-emptive strike in terms of a localised lockdown, then the North West of England, South West of England and the East of England are more likely to be the focus of thought than London, the West Midlands or Greater Manchester.

The third element is that it is also possible to anticipate the sort of people who would be most likely to acquire the virus if there were to be a second spike. As a generalisation, it is the relatively young and the comparatively healthy who are most likely to take up the chance to eat and drink out, engage in public entertainment and move around more.

While it would obviously be preferable if absolutely no more people caught the virus, if it has to be a section of the population at all then the young and the healthy are the best

placed to endure the virus without being seriously unwell, needing to be admitted to hospital (let alone placed on a ventilator) or be in real danger of death due to the virus. An hypothetical upswing in the R number in this demographic would manifestly lead to a larger number of infections, but the overall impact on society would be restricted. The only serious risk would be if they were then to pass on their affliction to those who were much older than themselves or had a history of medical trouble that endangered them.

This is, nonetheless, unlikely. That is in part due to the fourth aspect at work here: the extraordinary limitations that ministers are insisting upon to limit contact numbers. The "social bubbles" that have been permitted so far, and which come into effect shortly, are really tight; amongst the most restrictive imposed anywhere in Europe. Nor are they likely to be transformed in scope at any point in the near future. What will come into being on July 4th is the result of a trade-off. The Government is being liberal about what people in England can do, while equally being conservative about who they can do it with. This is a double-edged sword for the hospitality sector, which lobbied vociferously to have the two metre rule replaced by the one metre plus rule for indoor socialisation. More people can venture out, but only with a small number of household associates most of the time. Business lunches with people from outside that circle will not happen often. This tough stance on contact numbers will restrain the extent of any outbreak.

As, fifthly, will an enduring stance of minimising the contact that the most vulnerable have with the outside world. The rules here have only been extended marginally. Almost two million people are in a state akin to house arrest, with the chance of a short spell of time outside the only additional opportunity to experience any form of personal liberty. One of the reasons why the death rate was high in the first few weeks of the epidemic hitting is that it had had the chance to circulate in the community before people realised that it was even there, and mini-epidemics were triggered inside hospitals and in care homes. Ministers will not allow there to be any chance of this situation repeating itself. Shielding of some form that is clearly different from the rest of society is here to stay, bar the arrival of a vaccine that would be deployed on the vulnerable first.

Furthermore, as so much more is known about the virus now than was true four months go, the scientific thinking and modelling about precisely who is potentially vulnerable is much more thorough and valuable than at the start of the crisis. A team led by Oxford University published a paper on Monday which ushers in a new development in the field of risk prediction modelling that should allow GPs to assess exactly how exposed their patients would be to the virus should they contract it. This will “use routinely collected anonymized electronic health records of eight million adults in the UK, accessed through the University of Oxford’s QResearch database and linked datasets, to identify factors that can be used to predict those at highest risk of infection and serious illness from COVID-19. These include age, ethnicity, deprivation, smoking status, body mass index, pre-existing medical conditions and current medication.” This is important new science.

It reinforces the penultimate consideration. The treatment of those who fall seriously ill with the virus is improving rapidly. The most prominent example of this is the now-proven positive effect of Dexamethasone, a very inexpensive and widely-available drug which has proved more effective in reducing the number of fatalities due to the virus than any other product. There will almost certainly be more such drugs that emerge from across the international stage over the coming months (not perhaps some of those that have been endorsed by the US President). This will make for increased confidence that any uptick in the R number does not see death rates rise in anything close to an exponential manner. It is hardly cause for complacency, but it does mean that the UK is capable of a much more effective response in the event that infection cases increase.

Finally, there is the ‘dog that did not bark’ in the Prime Minister’s statement in the House of Commons and subsequent press conference thereafter. There were many (often quite incremental) moves to make economic and social life more appealing but virtually nothing at all which would encourage any upsurge in the use of public transportation by bus, train and particularly the London Underground system. That was and is entirely deliberate. Enclosed transit remains seen as the most dangerous aspect and if it were to

be liberalised would be the single most important step which might trigger a second spike. This would compel either a localised lockdown or for some of the measures that are due to come into force on July 4th to be suspended quickly afterwards. Soho and Covent Garden might soon be open once more (albeit in a different form than before) but the Prime Minister and his team would much prefer – indeed will insist – that you walk, run, cycle, even drive to get there in order to enjoy what its numerous pubs, wine bars and array of freshly restored restaurants have to offer their long-lost customers.

So, can a second spike be contained?

Ministers have short- and medium-term objectives here. The short-term aim is to make substantial progress towards reopening the economy and society without also risking a second spike that would require, at a minimum, something like a regional lockdown in order to suppress it. This is the prime ambition between now and the end of September.

This has a very reasonable chance of success. An atypically hot and dry summer would help matters, but that is well beyond the command of Downing Street. The weakest link in the chain is the very much ad hoc testing and tracing system that has now had to be adopted and which is not that which had been anticipated three months ago. It will be hard to avoid some local flare-ups that force the reintroduction of some restrictions.

The place where the risk is probably greatest is the South West of England. This is partly because it had a relatively low level of infections in the first wave, but also because it will receive an influx of domestic tourists this summer which, unusually in the UK market for such travel, will include large numbers of younger people and also older people. This carries the danger that an outbreak of new infections could leap from the first category into the second and present local NHS facilities with a sudden, very unwelcome, crisis. A temporary closure of bars and restaurants in, for instance Newquay would be awkward but ultimately manageable. Shutting down the whole of Cornwall and Devon would be in a different league, and lead to a bitter blame game as to who had been responsible for it.

The more worrying period lies afterwards. In October, decisions might have to be made about how to ready the country for a winter in which the authorities may have to cope with both the annual influenza outbreak (which in a really bad year, such as 1999/2000, can alone push the NHS to the brink of collapse) and a second wave of the virus with much of the public hard pressed to assess which of the two conditions they had. This is an immensely unappealing scenario and might be avoidable only by the otherwise really drastic measure of mandatory vaccination of the entire population against influenza so that the NHS could be sure that it was only fighting a war on one front, that of COVID-19.

Matters might not come to that. About two hours before the PM made his statement in Parliament on Tuesday, it was revealed that Oxford University is moving on to the next stage of human trials of the COVID-19 vaccine that it is developing with AstraZeneca. These will take place soon in Brazil and South Africa. With all due respect to No 10, this might prove to be the most important news not only of this week, but this entire saga.

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