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## New variant of SARS-CoV-2 in UK causes surge of COVID-19



For most of November, 2020, England was in lockdown to force down the incidence of COVID-19 cases that had steadily increased in the late summer and autumn. Other countries in the UK (Wales, Scotland, and Northern Ireland) had also been reimposing and subsequently lifting restrictions, since each of the four nations is in charge of its own COVID-19 control plans.

For a while, the strategy in England appeared to have worked, with many areas that previously had high case incidence seeing rates drop sharply in November, including northwest England and Yorkshire, areas which had previously seen some of the highest incidence rates in the UK. However, it soon became apparent that the English lockdown had not had the same effect in every region. In Kent, a large county in the southeast, cases actually continued to increase during the lockdown, despite having the same restrictions as other regions. When, on Dec 2, 2020, England lifted its lockdown and moved back into a three-level tiered restrictions system, cases continued to increase sharply in Kent and then rapidly in Greater London and other parts of the southeast. And despite the approval of two vaccines in recent weeks, the UK now faces a race against time to vaccinate as many vulnerable and elderly people as possible.

The reason: a new variant of SARS-CoV-2, which various modelling exercises have estimated to be up to 70% more transmissible than the previously circulating form of the virus. In September, 2020, this variant represented just one in four new diagnoses of COVID-19, whereas by mid-December, this had increased to almost two thirds of new cases in London. UK Prime Minister, Boris Johnson, decided with his scientific advisors that he had no credible alternative other than to impose even stricter restrictions on these parts of England, creating a new

tier 4, which meant all non-essential shops and gyms closed, and people were asked to stay at home wherever possible (hospitality venues already had to close in tier 3).

However, until late December, 2020, the proportion of cases caused by the new variant were much lower in other parts of the country, with the northwest region that includes Liverpool and Manchester recording only 1 in 20 new cases of COVID-19 that were due to the new variant. As a result, many parts of England continued in the lower tier of restrictions, until on Dec 30, 2020, Johnson, in response to surging numbers of new diagnoses including an all-time high of 53 000 on Dec 29, 2020, decided to move all parts of England into tier 3 or 4. This effectively meant that no restaurants, bars, or other hospitality venues would be open on New Year's Eve. However, the latest data (early January, 2021) shows that cases due to the new variant are increasing in all areas of the country, although the south and southeast continue to be the worst affected.

Commentators have questioned the logic of this move, and called instead for an England-wide lockdown equivalent to tier 4 restrictions. Scotland, Wales, and Northern Ireland are already in such nationwide lockdowns. "It is good that the majority of the country is in tier 4 as there is evidence we need at least this level of restriction to prevent rapid spread of the new variant", explains Andrew Hayward, Professor of Infectious Disease Epidemiology and Inclusion Health Research at University College London, London, UK. Hayward, who is a member of the UK Government's Scientific Advisory Group for Emergencies (SAGE), adds: "The areas that are not currently in tier 4 can expect rapid increases in new variant cases which will likely lead to them needing to move into tier 4.

Doing that now, instead of later, would prevent unnecessary hospitalisations and deaths and may decrease the length of time they need to be in tier 4."

At the time that this article went to press, the UK Government had been determined that school children would all be returning to school, albeit in a staggered fashion, immediately after the Christmas and New Year holidays. However, this plan is now in doubt, with the government suggesting only primary school children and secondary school children who are in important exam years (essentially 16 and 18 year olds) will return to the classroom immediately. Then, on New Year's Day, 2021, the Government announced a sudden change in strategy—all primary schools in London were told not to reopen as planned on Jan 4. There were calls (including from teachers' unions) to delay reopening of primary schools in all of England for 2 weeks, but in a hastily arranged television interview on the morning of Sunday Jan 3, Johnson said that only primary schools in the areas worst affected by the new variant would not reopen. He told the BBC that there is "no doubt in my mind that schools are safe" but did not rule out further closures. The leader of the opposition Labour Party, Kier Starmer, said in response that the virus was out of control and further school closures were "inevitable".

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For more on the homeless situation during the first wave see [Articles Lancet Respir Med 2020; 8: 1181](#) and [Spotlight Lancet Respir Med 2020; 8: 447](#)

Starmer is among those calling for an immediate nationwide lockdown. Hayward explains that the decision to close schools or not could be the key factor in whether or not cases continue to increase. He said: "There is a high likelihood tier 4 will be insufficient to reduce the R number to below 1. Cases will continue to increase, albeit more slowly. This is based on the observation that the new strain increased in Kent and the southeast during lockdown, which is a more severe restriction than the current tier 4. Schools and universities being open may make the difference between being able to reduce R below 1 or not." Following the latest announcements from the Prime Minister, Hayward adds that: "Even though schools have been provided with detailed guidance, and financial and practical support, it will be extremely challenging to implement mass testing of all pupils within the expected timeframes along with serial testing of classroom and other contacts of positive cases. The uptake and impact of school mass testing programmes is highly uncertain, as is the extent to which the new strain will increase transmission in schools and from school children to the wider community."

According to research published on Dec 29, 2020, by the UK Health Agency Public Health England, the new variant appears to be no worse than the previous dominant strain of SARS-CoV-2 in terms of the risk of hospital admission, severity of illness, or mortality. The UK is confronting this new variant during the same month that two vaccines against the virus have been approved; the Pfizer-BioNTech and the Oxford-AstraZeneca vaccines. The Oxford vaccine in particular has raised hopes that the UK could regain control and turn the tide on the COVID-19 pandemic by as early as April 2021, since its storage

requirements are a lot less complex than the deep cold required for the transport and storage of the Pfizer vaccine. This means that it will be far easier for vital vaccine supplies to reach, and be stored at, venues such as care homes for the elderly. Vaccinations with the new Oxford vaccine were due to begin across the UK on Jan 4, while vaccinations with the Pfizer-BioNTech vaccine continue. In another key policy shift, the UK's medical experts said it was crucial to inoculate as many vulnerable people as possible with the first dose, since this would offer the most protection, rather than giving people the regular two-dose schedule of either vaccine. The second dose, they explained, can be given in the subsequent weeks or months after mortality and admissions have hopefully stabilised.

At a media briefing on Dec 30, 2020, PM Johnson said: "The public must redouble its efforts to control the virus at this critical moment" before adding he was confident the country's situation will be "very much better" by April 5, 2021 (Easter weekend). "All of these measures in the end are designed to save lives and protect the NHS. For that very reason, I must ask you [the public] to follow the rules where you live tomorrow night and see in the new year safely at home."

However, the new variant has piled additional pressure on to the speed at which vaccination must be achieved. Hayward is worried that, just as had been possible in the first wave, very vulnerable people, such as the homeless, could be ruthlessly exposed due to plunging winter temperatures and the failure of the UK government to so far provide local authorities with the resources to house homeless people in single room accommodation, mainly hotels, which are mostly standing empty due to the temporary death of the tourism industry.

Back in March, 2020, the government helped the appropriate agencies and organisations get everybody off the streets and into such accommodation. "Many homeless people have this time had to stay on the street because of the dangers of opening communal night shelters and alternative provision not being available. This new coronavirus variant especially could cause havoc and a huge surge of cases in people least equipped to face them", says Hayward. The charity *Crisis at Christmas* has housed large numbers temporarily in single room accommodation over the Christmas period, but they will need to return to the streets in early January. Hayward warns that: "If there are severe cold weather spells after this it is likely communal shelters will need to open to prevent people freezing. Due to the government's failure so far to repeat their efforts of earlier this year, homeless people are currently facing a stark choice between the dangers of cold or the dangers of COVID-19."

The UK remains one of the most badly affected countries. As of Dec 30, 2020, it had recorded more than 2 million cases of infection and more than 70 000 deaths. Driven by the new variant's increased infectiousness, the UK has reported more than 50 000 cases a day (a new record) in the last few days of December and the first few days of the new year. Almost 1000 deaths were reported on Dec 30, 2020, alone, and there are fears that the pandemic may get very much worse in the country before it gets better. However, the hope is that deaths and hospitalisations will plummet as the number of elderly and vulnerable people receiving the vaccine sharply increases in the coming weeks.

Tony Kirby