Statement: Technical Advisory Cell (25 November 2020)

Situation

The most recent daily surveillance report (25 November 2020) shows Blaenau Gwent, to be over 415 cases per 100k, which is growing closer to the pre-firebreak peak. The Firebreak had the intended impact of a short sharp early intervention to push back the epidemic by three weeks. The benefits of this period of negative growth has now largely been lost. Rates of transmission are again increasing with three health Boards areas (Aneurin, Cwm Taf Morganwwg and Swansea Bay) in the very high category (200+ cases per 100K); Cardiff and Vale, Hywel Da, Powys Betsi would be classed as high (50+ cases per 100K). Whilst some areas, notably more rural lower population are low to medium (Gwynedd, Anglesey, Conwy), Wales as a whole is high (186 cases per 100,000K, 12.6% positivity). Significant increases in under 25s are observed in all but three LAs, which in time should transfer to increases in older members of society. The most recent estimate of Rt (draft) from COMIX mixing data is that Rt is now 1.4 which would suggest we are entering into a period of significant growth of the epidemic.

Table 1: Estimate of R_0 by country, comparing CoMix with POLYMOD over time. Values of R_0 for two week periods, excluding the most recent estimate with 95% intervals.

Country	2020-10-07 to 2020-10-20	2020-10-15 to 2020-10-28	2020-10-22 to 2020-11-04	2020-10-29 to 2020-11-10	2020-11-04 to 2020-11-18	2020-11-11 to 2020-11-18
England	1.1 (0.7 1.6)	1.0 (0.6 1.4)	1.0 (0.6 1.4)	1.0 (0.6 1.4)	1.0 (0.6 1.4)	1.0 (0.6 1.4)
Northern Ireland	0.8 (0.5 1.1)	0.7 (0.4 1.1)	0.9 (0.5 1.2)	0.9 (0.5 1.3)	0.7 (0.4 1.0)	0.5 (0.3 0.7)
Scotland	0.8 (0.5 1.1)	1.0 (0.6 1.4)	1.3 (0.8 1.9)	1.3 (0.8 1.9)	1.2 (0.7 1.8)	1.4 (0.8 2.0)
Wales	1.4 (0.8 2.0)	1.0 (0.6 1.4)	0.8 (0.5 1.1)	0.8 (0.5 1.2)	0.9 (0.6 1.3)	1.4 (0.8 2.0)

Excess deaths are currently as high as May with the rate in Wales higher than in England and tracking above our reasonable worst case.

Christmas

Christmas celebrations will likely lead to increased intergenerational mixing and the formation of new routes of transmission from pre-Christmas social mixing to extended household mixing at Christmas. This is highly likely to provide increased opportunities for transmission of the disease. Increases of older adults with the infection is likely to lead to higher deaths and hospitalisations after Christmas.

Whilst there are new technologies that will enable more rapid testing, these are not a silver bullet. Invariably new lateral flow devices will help reduce the lag in test to result and may enable greater freedoms and flexibility of testing; however, they may lack comparable

sensitivity to RT-PCR. Social distancing and quarantining remains highly effective at reducing the risk of infecting others if observed correctly.

The central premise of non-pharmaceutical interventions is to reduce mixing as this in turn reduces the risk of spread and the large outbreaks. As rates of infection in the community rise before the Christmas period it is likely that more people will need to self-isolate or quarantine over Christmas. Pre-isolating (e.g. not mixing outside of the household) for one generation time (7-8 days) would likely be an effective way of lowering your risk of infecting others. If people become symptomatic during this period they should not see others and seek a PCR test immediately.

Pre-isolation may be a helpful consideration for families with children before visiting older relatives. Similarly in occupations where there is a higher odds ratio of infection (e.g. warehouse and factory workers, health and social care workers – pre-isolation before mixing with older adults may reduce the risk of transmission. However, the best way to protect older family members is not to expose them to potential infection, no matter how well intended the reason for contact. It is likely that once a vaccine has been distributed the current restrictions will not be required and more normal extended family relationships can realised. It will be important to equip people with some sensible advice about how to visit family members as safely as possible (e.g. reduced length of stay, good hand hygiene, good ventilation). However evidence suggests that transmission in households happens quickly and that pre- and early symptomatic individuals are high contagious.

Policy modelling

With regard to policy modelling. Analysis that we have undertaken and from comparison of interventions across the UK with SAGE we can see that: it is better to intervene early than late, short and sharp interventions work, compliance wanes over time, firebreaks and harder restrictions (e.g. tier 3+) can reduce levels of transmission in the community. Rules must be simple, understandable and achievable – with an agreed beginning and end.

SAGE agree that it is better to enter into the Christmas period with a low level of Community transmission as opposed to high. As we have seen from our hospitals, care homes, and prisons – high community prevalence leads to outbreaks in these settings, outbreaks spread quickly. The same logic can be applied to residential settings – if an infectious individual enters a multiple occupancy home is it likely that more than one other person will become infected.

A new Reasonable Worst Case scenario has been produced with the previous Reasonable Worst Case now the Central Case.

Hospitality

Increasing scientific and observational evidence highlight the role of hospitality (notably wet pubs) in disease transmission. There is a higher odds ratio of infection in hospitality workers, growing evidence of exposures in these settings and negative behaviours associated with alcohol and mixing such that rules are gamed (e.g. rule of 4 exploited, pub crawls to overcome maximum stay).

Schools and education

Whilst schools do not appear to be disproportionately driving community transmission, cases and small outbreaks are associated with higher levels of infection in the community, and as such cases and contacts associated with schools are increasing. It is to be expected that numbers of school students and school staff in isolation will continue to grow as cases in the community rise.

The available evidence indicates that schools being open is associated with higher rates of infection in the population, although the mechanism for this remains unclear (potentially including many factors such as reopening of workplaces, parents returning to work, shops and hospitality, social mixing outside schools). It is also the case that during the pandemic, closing schools has been one of the NPIs most often deployed at a late stage, i.e. when transmission was already at a high level. Movement data from the first and second week of the autumn firebreak in Wales does suggest schools facilitate wider social mixing.

Ordinarily closing schools should be the last intervention to be considered. However agreement for the formation of extended Christmas bubbles increases the risk of transmission within extended households during this period. The decision to partially close schools in the second week of the autumn firebreak took into account earlier SAGE advice from September suggesting secondary school closures could affect R up to 0.35, but this was a low confidence figure and no lower limit was given. Earlier this month, SAGE endorsed a paper which stated "*As the prevalence of infection in children aged 12-16 increased between September and October, ONS analysis suggests that children aged 12-16 played a significantly higher role in introducing infection into households (medium confidence). The difference is less marked for younger children (medium confidence).*"[1] A period of pre-isolation for families with children as a result of school closures could reduce the level of social mixing ahead of this period if school attendance and wider social mixing associated with schools being open was not replaced by other social mixing activities.

[1] https://www.gov.uk/government/publications/tfc-children-and-transmission-4-november-2020

Options for reducing the significant educational and wider socio-economic harms resulting from school closures have been set out elsewhere in advice to Ministers and considered previously, such as remote learning for some or all school pupils, opening a limited number of 'hub' schools for children of essential workers and vulnerable children, or shortening school holiday periods over the summer to allow for more learning. The deliverability and effectiveness of any mitigating measures should be considered.

For decisions on whether any school closures should take place beyond the Christmas period, it will be important to consider further evidence as this becomes available, given the significant wider harms caused by school closures.

If learning transitioned to a blended period for the final week, consideration would need to be given to displacement activities that could see more mixing (e.g. through leisure or shopping). If agreed, the week should be used for isolation and reducing social contacts with a clear 'stay at home' message.

Behaviours and Risk Communication

Whilst we would recommend continuing to pursue the agenda of shared responsibility for longer term behaviour change it is clear that some members of society, for a multitude of reasons, are not adhering to aspects of the guidelines in place. This adherence is required for individuals to protect themselves and others.

Evidence to date suggests many people continue to adhere to the guidelines in Wales, with exceptions largely being thought to be associated with lack of understanding of guidelines, lack of skills (e.g. ability to say no) and lack of access to support (e.g. financial, practical and emotional). Confidence in Welsh Government remains high, an important consideration given it has been found to be a key predictor of adherence. However, survey data also suggest a significant degree of mixing in the home with those outside the extended household and misunderstanding of the risks of transmission associated with such mixing (e.g. that you are more likely to be exposed to the virus from strangers than family/friends). Objective mobility data also indicate returns to pre-firebreak levels of travel.

While a little more speculative, current circumstances may exacerbate the risk of transmission in the community. For example:

- Changing behaviours following the relaxing of restrictions post-firebreak (largely anecdotal but survey will be available shortly to examine this);
- Greater mixing in the pre-Christmas period is likely, particularly in hospitality settings and non-essential retail;

- Possible complacency with the welcome news on the forthcoming availability of vaccines, with people relaxing (although a counter-argument is possible, where people continue to be cautious as they can now see an end in sight).

While the trajectory of the pandemic has changed over time, in part due to the various interventions put in place, many of the evidence-informed behavioural considerations remain the same as in the spring (and outlined in the recent TAC paper). These include:

- The importance of public communication around risk that is both simple to understand and accompanied by a clear rationale. This would be particularly pertinent were there to be a deviation from the post-firebreak national approach (e.g. to localities in different tiers as in England and Scotland). That said, perceived consistency across the UK would likely be viewed positively, as has been agreed for the Christmas period.
- Financial support in place should be continued (e.g. £500 self-isolation payments) and other forms of support encouraged (e.g. family, friends and volunteers providing practical support such as shopping).
- Use of appropriate communication channels reflecting demographic and cultural differences and interventions co-produced wherever possible.
- Recognising enforcement should not be a focus of any activity without having first attempted to engage, explain and encourage.

The importance of Christmas specific considerations also need to be factored in, with some well received SAGE/SPI-B papers that can be drawn on around minimising risk and behavioural implications.

Socioeconomic harms have been considered separately with papers presented to Cabinet.