

Wales Technical Advisory Cell: COVID 19 Brief – As of 23/03/2020 (THIS IS NOT YET SAGE ADVICE)

Advice

1. Even with recently agreed control measures in place, **TAC considers the risk for the epidemic to exceed NHS capacity in the coming weeks to be high.**
2. Current models show that London will be overwhelmed in 7-10 days and Wales to be 7 days behind London.
3. **TAC agrees** with SAGE assessment: that there is significant uncertainty that current measures are sufficient to bring the outbreak within the capacity of the NHS.
4. **TAC recommends** an immediate 'lockdown and release' approach is considered as the next range of measures to be introduced:
 - A period of 'lockdown' with the objective of bringing the R number as low as possible in order to suppress the transmission of the virus; followed by
 - A period of 'release' where the most stringent controls can be relaxed and other social distancing measures 'pulsed' on and off over a period of time, maintaining R below 1. Release will require careful choreography with the testing strategy.
5. **TAC recommends** that the lockdown strategy will need to be iterative, based on demand.
6. Due to the lag time in observable effects of these control measures, TAC does not consider that there is an opportunity to measure the effect in other European countries before a decision is made.

Situation Report

- Current modelling undertaken through the SPI-M group (23/3) estimates the R 2.7 (with estimates within 95% credibility of infectiousness between 2.2 – 4.5)
- The doubling time is considered to be 3-4 days (closer to 3).
- Based on current projections, ICU capacity in Wales will be breached in 14-17 days. This figure does not include the effect of mitigations introduced by the First Minister on Friday.

‘Lockdown and Release’ Summary

- A number of countries have moved to suppress the spread of the virus by implementing lockdown measures. These countries include China, Italy, Spain and France, although the extent of the lockdown measures, and the rate at which they have been introduced and enforced has varied.
- The objective of lockdown is to bring the transmission rate (R_0) down to as close to zero as possible, and at least below 1.
- By bringing R_0 down as low as possible, it buys time to manage NHS capacity and to scale up testing regime.
- Pre-print literature suggests that the Hubei lockdown had the effect of reducing R_0 from approx. 3.8 to 0.32 in approximately 28 days.
- The Hubei lockdown measures have been the most severe measure introduced to date. Less severe lockdown measures may have the same effect as the Hubei lockdown, but could take longer to bring the epidemic under control.

- The extent to which the lockdown measures are implemented and enforced must be balanced against social and economic acceptability and 'indirect' harm that can potentially arise from lockdown measures.
- Once R_0 is as low as possible, the 'Release' phase would provide the opportunity to ease some of the more stringent control measures. This release phase would provide the opportunity to toggle certain control measures 'on' and 'off' as required to maintain R_0 below 1 and prevent a resurgence of the virus to epidemic levels.
- There is no definitive data currently available on the number of measures that would need to be in place during this 'release' phase or the relative comparative effectiveness of the control measures. Intelligence from a number of surveillance sources will be used to inform the triggering the commencement of the "release" phase.
- Significant scaling up of testing regimes will be critical to understanding the progression of the virus during this release phase, along with greater understanding of compliance with the control measures.

Annex 1 – Detail of Lockdown and Release

‘lockdown’ phase

- The ultimate aim of the lockdown period is to reduce R_0 to as close to zero is possible, suppressing the transmission of the virus and buying time to scale up testing regime and reduce impact on NHS capacity.
- The practical requirements of the lockdown period is to reduce individual contacts through social distancing and reduce contagiousness through handwashing, disinfection, large-scale testing and contact tracing.
- R_0 will not be zero if the lockdown is focused on household isolation rather than individual isolation, but should have the effect of bringing it below 1.
- Evidence of the impact of the Hubei lockdown demonstrates the effect of lockdown measures on reducing R_0 . These lockdown measures included limitations to the number of members of each household leaving the house, curfews and detention of citizens for not following the rules.
- Evidence from pre-print papers suggest that these measures contributed to the effect of reducing R from 3.8 to 0.32 in approximately 28 days.
- Lockdown measures in France, Spain and Italy have also been extensive, but the level of enforcement and compliance have not been as stringent as those introduced in Hubei.
- The Lockdown measures in European countries have not yet been in place for long enough to determine the effect. 23/3 paper from Public Health England has shown a slight reduction in the growth rate in Italy.
- South Korea was also able to bring the virus transmission under control without mandated social distancing, but relied on aggressive testing and contact tracing regime backed up with enforced quarantine and isolation of symptomatic individuals. The UK is not currently in a position to scale up the

level of testing and contact tracing required, and does not have the time before NHS capacity is breached to do so without further control measures for social distancing being brought into effect.

- The effectiveness of the measures are reliant on compliance with the measures. There is limited data available at present to accurately understand compliance with the current control measures.
- Introduction of lockdown control measures can buy time in order to significantly scale up a testing strategy. Wales is involved in the UK wide attempt to bring mass testing (100,000 per day) into force within the next 3 weeks.

Lockdown considerations

- The introduction of Lockdown control measures above and beyond those already in place will need to balance the urgent need to reduce the R_0 number to as close to zero as possible, with the indirect harm and economic harm that can arise from the lockdown measures themselves.
- The impacts of a lockdown are likely to be most significant for the most vulnerable in society, including vulnerable children and victims of domestic abuse.
- A rapid review conducted by The Lancet on the psychological harm of quarantine reports that “Most reviewed studies reported negative psychological effects including post-traumatic stress symptoms, confusion, and anger. Stressors included longer quarantine duration, infection fears, frustration, boredom, inadequate supplies, inadequate information, financial loss, and stigma. Some researchers have suggested long-lasting effects.”
- The Key messages for managing the negative psychological effects of quarantine from the Lancet paper include:
 - Information is key; people who are quarantined need to understand the situation

- Effective and rapid communication is essential
 - Supplies (both general and medical) need to be provided
 - The quarantine period should be short and the duration should not be changed unless in extreme circumstances
 - Most of the adverse effects come from the imposition of a restriction of liberty; voluntary quarantine is associated with less distress and fewer long-term complications
 - Public health officials should emphasise the altruistic choice of self-isolating
- The introduction of lockdown control measures will require a review of the current 'key workers' guidance, to ensure that the effect of control measures have as high compliance rates as possible.

'Release' Phase

- Once the suppression of the virus transmission is under control, it will be possible to move to the 'release' phase that represents a scaling back of the control measures in place in order to moderate the R_0 number near to (but not above) 1.
- The objective of the 'release' phase is to reduce some of the more restrictive control measures and allowing people to move more freely whilst balancing the need to keep the R_0 number below 1.
- The most important component of the 'release' phase is the significant scale up in testing and contact tracing, enabling a greater tracking and isolation of symptomatic individuals.
- The release will require careful choreography with a testing strategy that is scaled and finessed to both cope with demand and stratify need.

