

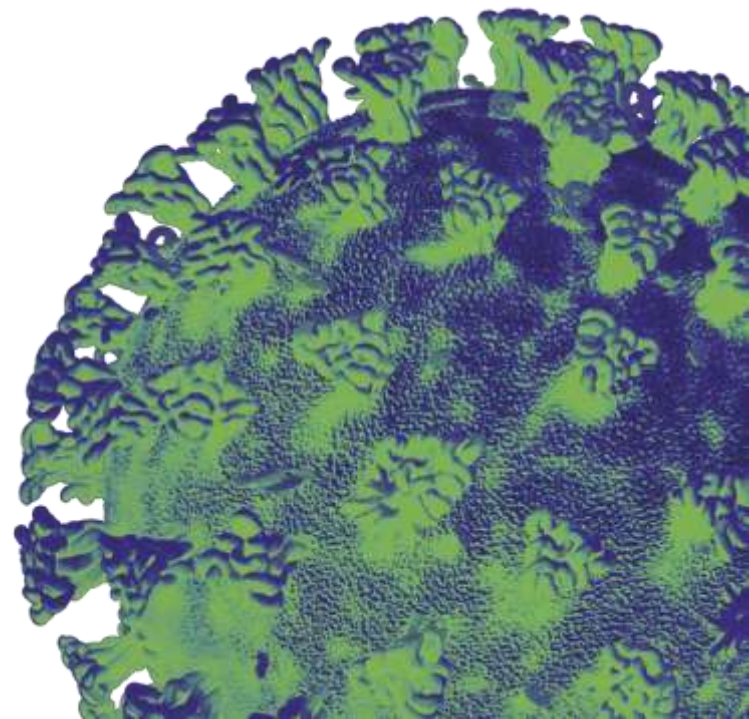
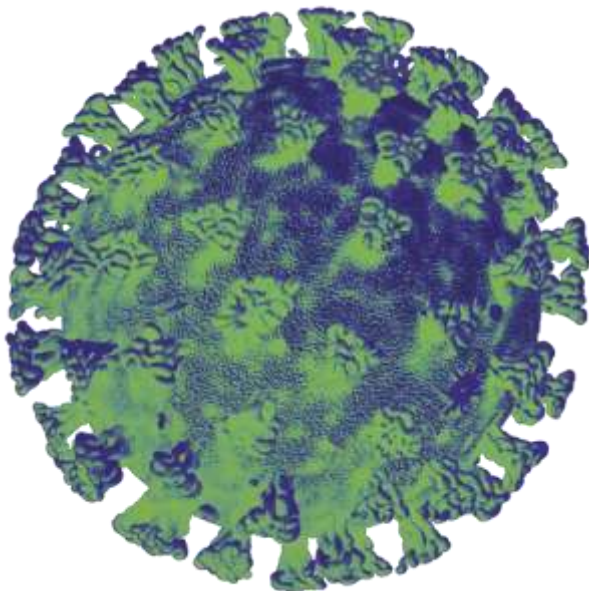
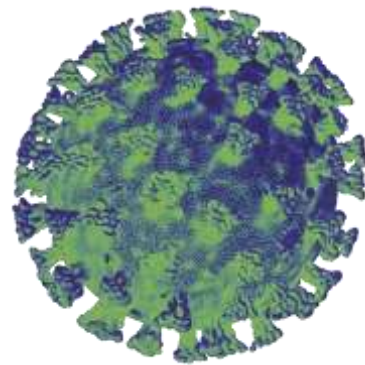


Llywodraeth Cymru
Welsh Government

Technical Advisory Cell

Summary of advice

19 May 2020



Technical Advisory Cell: Summary of advice

19 May 2020

Key Points

- The most recent estimate of the Reproduction number (R_t) is between 0.6 and 1.0 for COVID-19 in Wales; however different groups and methods have been used so this cannot be directly compared with the previous weeks estimate.
- There are some data to show that around 2-3% of people living in Wales have had coronavirus and developed antibodies. This is based on a small sample and we need more people to offer samples through the Welsh Blood Service and wider NHS in Wales in order to get a better picture.
- There is evidence to show that as many as 35% of people who get COVID-19 don't notice any symptoms at all. They will still be infectious, and this means that handwashing and social distancing will continue to be very important to break chains of infection.
- As long as people stay 2m apart, being outdoors in the sunshine carries a very low risk of becoming infected. Evidence shows that the virus lives for only a few minutes in direct sunlight, as opposed to many hours on surfaces indoors.
- Children seem to have had COVID-19 as much as adults, but they generally suffer fewer symptoms. They can be infectious, but we still do not know what size of role they play in community transmission.

Estimate of prevalence and incidence of COVID-19 in UK

- The Office for National Statistics is undertaking a COVID-19 Infection Study to find out how many people have COVID-19 infection and how many are likely to have had the infection, even if they haven't realised it at the time.
- The study only refers to the number of coronavirus (COVID-19) infections within the community population; community in this instance refers to private households, it excludes those in hospitals, care homes or other institutional settings.
- The study is currently only being conducted in England but may be extended to Wales in future.
- Latest data from the ONS Infection study estimates that an average of 137,000 people in England had COVID-19 during the first two weeks of May. (95% confidence interval: 85,000 to 208,000).

Presence of SARS-CoV-2 antibodies

- Recent Public Health England data show increased presence of antibodies for SARS-CoV-2 (seropositivity) over time in London, with likely number of people

with antibodies between 13-17.4% (medium confidence). Seropositivity is higher in London than in other parts of the country (high confidence).

- Data for presence of antibodies for SARS-CoV-2 in children suggest it is roughly equivalent to that for adults. Data for infections from ONS also show a broadly similar infection rate for adults and children.
- Samples from Welsh Blood Service have been shared with Public Health England to be included in their analysis. Assessment of 1006 adult samples has given an estimate of likely number of people with antibodies of 2.6% (95% CI: 0.3% - 5%) (low confidence).

Current Estimate of R_t

- There are six estimates of R_t for Wales that have been produced for SPI-M. All but one show R_t in Wales is below one. They use a range of methods and a range of data (confirmed cases, hospital admissions, and deaths).
- The models are combined and brought into a range that is agreed to represent the reasonable range of R_t . This week it is agreed that $0.6 < R_t < 1.0$ in Wales.
- Although this number is higher than last week, it's not accurate to compare them directly as there are now more models, a different weighting and updated data being used to run the models. We need to do this from time to time to recalibrate and make sure we're using the best data about the virus and the populations of Wales and the UK.

Cases of COVID-19 infection with few or no symptoms

- Cases of infection where a person shows no symptoms is termed 'asymptomatic'. Those cases of infection that show very few symptoms is termed 'paucisymptomatic'
- Understanding of the proportion of SARS-CoV-2 infections that have no or very few symptoms, and the relative infectiousness of cases with no or very few symptoms versus symptomatic infections, is important for modelling purposes and screening/return to work policies.
- Cases of SARS-CoV-2 infection with no or very few symptoms do occur (high confidence)
- The proportion of infections that have no or very few symptoms may vary by age, with an increasing proportion of infections being symptomatic with increasing age (moderate confidence), however this may decline again in the oldest age groups.
- Estimates of the proportion of infections that have no or very few symptoms vary very widely, between 4% and 50%. Some of the highest estimates are from nursing home studies, and information on the completeness of follow up data are not always available. In elderly nursing home residents, symptoms may be difficult to ascertain.

- Current data suggest that the proportion of infections that have no or very few symptoms is likely to be in the range of 10-35% (moderate confidence).

Social distancing (indoor and outdoor contacts)

- Significant changes should not be made to social distancing measures unless a robust contact tracing system is in place.
- Joining of small households, or 'bubbling' (e.g. one person + one person or two people + one person) for specific care purposes, where both households have a low number of contacts has been modelled. Bubbling with small household would make a return to exponential growth of the epidemic more likely than with no bubbling, but not by much.
- There is strong caution concerning the introduction of social bubbling – particularly in the short term, particularly when in conjunction with release of other measures. We would advise against making too many changes at once.
- Whilst lockdown reduces harm from COVID-19, it also creates or contributes to other harms such as loneliness, domestic abuse, stress and economic hardship. Any loosening of lockdown to reduce these indirect harms should be carefully considered alongside the increased risk of SARS-CoV-2 transmission.
- Permitting **outdoor** contact with members of other households, while continuing to maintain a 2m distance, would have no more than a very small impact on overall transmission rates. This could probably be safely allowed before contact tracing is in place.

Adherence to current measures

- Most people in Wales continue to follow the social distancing guidelines.
- From the survey data available it shows that many are complying with social distancing measures, it is estimated to be around 70% and some information (such as ONS survey data) suggests it could be higher.
- There are signs that adherence may be starting to decrease slightly from the mobility data (data available up to 15 May). This could be partly due to re-opening of some shops and other businesses. However, the overall picture appears to be consistent with previous weeks.

Test, Track and Protect measures

- An assessment of international measures has concluded that there is no standard template for an effective Test, Trace and Protect (TTP) scheme. Countries with successful schemes have low case numbers and don't focus on capacity; speed of testing and tracing is more important.
- Schemes perceived to be most successful require tests results within 24 hours and contact tracing to be complete within 24-36 hours. Comparators report 75-90% of contacts need tracing for TTP to be effective.

- A number of countries have 'circuit breakers' (or similar functions) to reintroduce stricter social distancing measures when infection rates spike, although the criteria for these 'circuit breakers' differ between countries.
- An effective TTP system will be necessary (but not sufficient on its own) to allow further adjustments to distancing measures without pushing R_t above 1.
- Tracing systems should be based on positive test results rather than symptoms alone, and the process from case identification to testing, contact tracing and isolation needs to be fast. Isolation of contacts within 48 hours of identification of an index case is desirable.
- TAC has provided modelling estimates for Wales to support the TTP system. This estimate is based on contact tracing following a positive test result, rather than on report of symptom (consistent with SAGE advice).
- TTP in Wales may require resources to trace contacts for between 11,000 to 95,000 COVID-19 positive cases per month (incidence). This is estimated to be up to 90,000 contacts if $R=0.8$, or all the way up to 380,000 contacts if $R=1$. These numbers assume that some level of social distancing would be maintained and people keep to these measures at the same rate as now (IPSOS MORI data on social gatherings of more than two, data relating to 8-11 May).

Understanding transmission routes to inform risk assessment and mitigation strategies

- People are at risk from transmitting and contracting SARS-CoV-2 through surfaces, through the air or water and through physical contact. Everyone needs to be able to make pragmatic assessments of the risk they will have, of contracting and transmitting, in different situations.

This structured and pragmatic approach to risk assessment and risk mitigation should be considered nationally and locally by employers, alongside health and safety representatives, in every workplace.

- Ideally this approach should be quantitative, but in the absence of good data a framework based upon the factors that influence exposure should be used to evaluate risk in a structured way.
- The hierarchy of risk controls that establishes the risk reduction measures that have the greatest impact is an important approach that should be followed. <https://www.hse.gov.uk/construction/lwit/assets/downloads/hierarchy-ri-sk-controls.pdf>
- Risk assessment should be based on the exposure during different activities such as jobs, over a workday, rather than by location, organisation or sector.
- Data collected should be built into any risk reduction intervention using 'mitigate, monitor, modify' approach.
- National surveillance and research programmes should be established to better understand the role of the workplace in Covid-19 transmission.

- It is important that vulnerable groups, equality and accessibility are considered throughout the risk assessment process.
- Risk assessment should be completed by those people responsible for managing risk within an organisation to an agreed and documented approach.

Summary of disinfection technologies for microbial control

- There is good evidence that germicidal ultra-violet technology (GUV) that uses UV-C light (200-280nm wavelength) and fumigation approaches, particularly Hydrogen Peroxide Vapour (HPV), are likely to be viable decontamination approaches against SARS-CoV-2 for unoccupied rooms.
- Both GUV and HPV decontamination require a sufficient duration of exposure to be effective. As such they are more likely to be effective as part of a terminal cleaning process rather than daily disinfection.
- Local air cleaning devices, including filter devices and UV-C devices – which may be found in combination - are unlikely to have significant benefit unless the airflow rate through the device is sufficient. There may be some poorly ventilated spaces where these may be useful.
- Enhancing natural light in buildings (e.g. opening blinds) is a no cost precautionary measure where good light ingress already exists, but it is unlikely to have more than a marginal benefit.

Transmission and Control of SARS-CoV-2 on Public Transport

- Minimising short-range person-to-person transmission using strategies including physical distancing remains a key mitigation measure.

Environmental mitigation measures to minimise transmission during transport operation should focus on high frequency cleaning of touch sites as the highest priority. Enhancing ventilation should also be considered where ventilation rates are low.
- It is likely that surfaces within public transport will be contaminated, so hygiene measures to enable greater frequency of hand washing/sanitizing are likely to be beneficial.
- Use of GUV may be beneficial as a decontamination approach at the end of a day.
- HPV fumigation may also be effective but it is unlikely to be viable as a daily cleaning approach.

Research

- There are currently 1587 Welsh patients recruited to COVID-19 urgent public health studies, an increase of 93 in last 7 days. (11 total UPH studies now open in Wales - eight that include patient recruitment and three that are data/sample collection)
- Weekly increases in recruitment numbers are likely to slow in the coming weeks as the total number of COVID hospital cases decrease.

SARS-CoV-2 Genetic Variation

- As SARS-CoV-2 continues to circulate in humans we might expect it to accumulate genetic change, and some variants might be selected for that confer advantage.
- Understanding the significance of the genetic changes in SARS-CoV-2 viruses as they arise is important and can have implications in a number of areas, including: diagnostics; vaccine development; virus transmission; treatments; and any contact tracing using genomic epidemiology.

NHS Performance

Hospital data updated Monday 18 May

- Total occupancy:
 - Of the 4312 occupied beds in NHS Wales, 8% are confirmed Covid-19 patients and a further 6% are suspected pending confirmation.
- L3 ICU occupancy:
 - Total in Wales is at 145 patients (40% of total capacity).
 - Of these 145, 32% are confirmed Covid-19 cases, 9% are suspected cases and 59% are non-Covid patients. Thus the proportions of COV+ and SUS patients have both fallen and the proportion of non-COV patients increased compared to the last report (12 May 2020).
- 7-Day averages:
 - All metrics show either improvement (COV+/SUS Hospital Admissions, COV+/SUS Hospital Discharges, COV+/SUS ICU L2 Occupancy, PHW Cases and PHW Deaths) or static (COV+/SUS ICU L3 Admissions) in period 11 May – 18 May relative to 4 May – 10 May.
 - 7-day rolling average for daily COV+/SUS Hospital Admissions peaked at 149 on 7 April and has subsequently shown a sustained downwards trend and is currently at 106.