

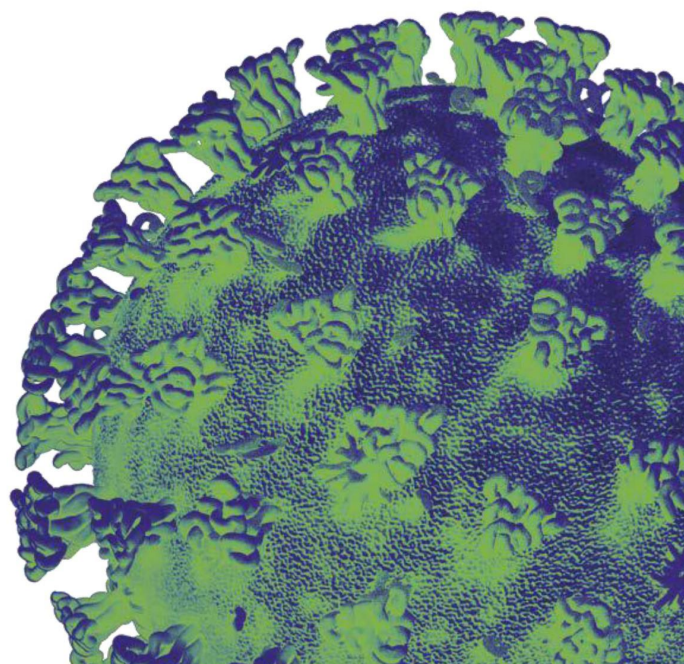
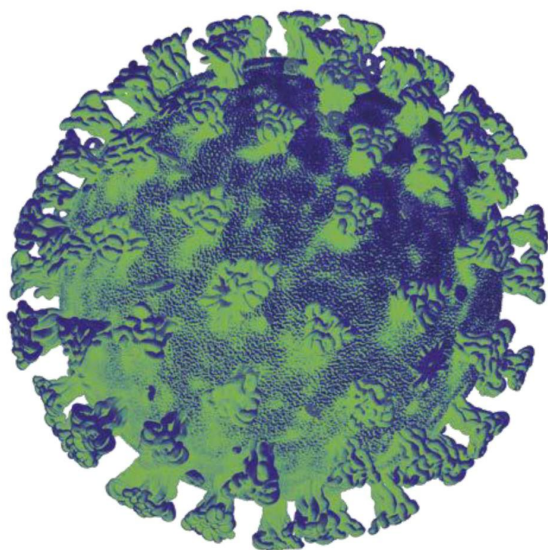
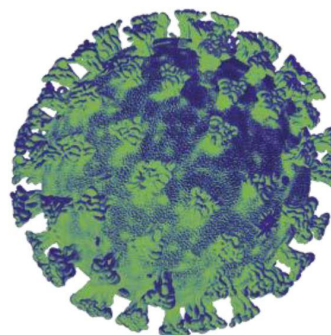


Llywodraeth Cymru
Welsh Government

Technical Advisory Group

Consensus statement on the impact of
single vs double testing of patients prior
to discharge from Hospital into a Care
Home

02 September 2020



Welsh Government Technical Advisory Group: Consensus statement on the impact of single vs double testing of patients prior to discharge from Hospital into a Care Home

Background

Currently in Wales, testing of Hospital in-patients is required before discharge into a Care Home setting.

A negative result is required prior to discharge.

The issue of continued low-level positivity in patients previously infected with SARS-CoV-2, and the potential poor correlation with infectivity has been addressed in a previous T-TAG paper.

The question of whether 2 negative results should be required prior to discharge has been raised, as this policy has been adopted by other countries (e.g. Scotland). It is presumed that the proposed reason for 'double' testing is to increase the sensitivity of the testing process and reduce the risk of false negative results leading to potential exposure of vulnerable residents.

The likelihood of false negative results can be calculated from the sensitivity of the test and the prevalence of disease in the population tested. The estimated sensitivity and specificity of the current testing platforms in Wales is 85% and 99.1% respectively. False negative and positive number estimates for different disease prevalences are given in the below table.

Specificity (%)	Sensitivity (%)	Prevalence (%)	PPV	Positive Results/1,000 tests			Negative Results/1,000 tests		
				Total positive	True positives	False positives	Total negative	True negatives	False negatives
99.1	85	0.01	0.05	9	0	9	991	991	0
99.1	85	0.05	0.05	9	0	9	991	991	0
99.1	85	0.1	0.09	10	1	9	990	990	0
99.1	85	0.5	0.32	13	4	9	987	986	1
99.1	85	1	0.49	17	9	9	983	981	2
99.1	85	5	0.83	51	43	9	949	941	8
99.1	85	10	0.91	93	85	8	907	892	15

As can be seen, if the prevalence of disease is 0.05% (current ONS estimate for the general population, there would not be any false negative tests if 1,000 people were tested. The current prevalence of disease in the asymptomatic population of hospital in-patients awaiting discharge to a Care Home is unknown, but is likely to be extremely low.

(The number of hospital onset cases of COVID-19 ('definite', 'probable', and 'indeterminate') for the week ending 9th August was 14, out of total beds of ~9,000, which would give a prevalence of 0.15% overall. The prevalence in asymptomatic patients is likely to be lower than this).

If the prevalence was 0.1% (reasonable estimate based on data), there would be no false negative tests if 1,000 people were tested.

If the prevalence was 1% there would be an estimated 2 false negative results if 1,000 patients were tested.

Regarding double tests, the prevalence in a population of in-patients who have already had a negative test within the previous 48 hours would be extremely low, and probably less than 0.01%. In this situation, there would not be expected to be any false negative results, even if 10,000 patients were tested.

In this context it should also be noted that, provided that it is correctly implemented, the existing policy that patients discharged from hospital to a Care Home should self-isolate for 14 days also acts to mitigate the impact of the discharge of a false-negative patient into a Care Home setting.

Conclusions

- The likelihood of false negative results is very low, when the prevalence of COVID-19 is low.
- Performing double tests reduces the likelihood of false negative results to almost zero.
- The consideration of a policy of double tests would need to balance the benefits of reduction of risk of false negative results, against the associated harms at both individual and population levels. The latter will include delays in discharge from hospital to care homes, itself associated with consequent harms at both the individual (e.g. increased risk of hospital acquired infections, negative impacts on care packages, emotional and mental well-being, loss of care home place etc.) and system (e.g. negative impacts on patient flow) levels.
- If a policy of double testing is pursued, consideration should be given to whether it should involve:
 - 2 swabs taken at the same time, and tested on different platforms with different targets
 - 2 swabs taken 12 hours apart
 - 2 swabs taken 24 hours apart
 - A second swab only taken following an initial negative result.