

Serology testing strategy - for discussion at SAGE

1. PHE recently approved two tests assessed as accurate and reliable¹ high-throughput laboratory-based serology tests for SARS-CoV-2. A number of other tests are currently being evaluated. We do not yet have sensitivity, specificity, or positive or negative predictive values under realistic operational conditions and current point prevalence.
2. Serology tests can be used to determine previous infection with SARS-CoV-2. It is possible it also gives information on the development of subsequent immune response.
3. There will be considerable demand for these tests and we set out an initial prioritisation for serology testing in four areas:
 - i. Serology and repeated PCR swab testing for healthcare workers (HCW). Studying infection incidence on this high-risk group with higher levels of exposure will enable us to understand whether, and to what degree, an antibody response predicts ongoing infection and clinical disease risk.
 - ii. Serology and repeat PCR swab testing for social care workers and residents. Rationale as for HCW. We have seen high rates of transmission in these settings and also need to understand factors associated with transmission and determine incidence of PCR-detected and clinical diseases in working age and older adults by seropositivity (which may be different).
 - iii. National sero-surveys in adults and children. Studies are already underway and allow an understanding of how the infection has spread across the country.
 - iv. Serology in teachers and pupils to understand transmission in children. Studies in specific populations e.g. prisons, the homeless
4. Additional priorities, to be considered after the first four, will include the two categories below
 - i. Serology testing for all consenting health and social care workers. This will help map nosocomial spread in these high-risk settings.
 - ii. To guide clinical practice in cases where a clinician sees a clinical need.
5. There is no strong evidence yet to suggest that those who have had the virus are immune, and what that immunity means in terms of subsequent infection, infectiousness and severity of clinical disease.

¹ 1. specificity 100%, overall sensitivity 92.7%¹; 2. specificity 100%, overall sensitivity 83.9%¹. Sensitivity increased when testing occurred >21 days from symptom onset.