What can we say about how behaviour may change following testing? Initial response from SPI-B [22 April 2020]

1. SPI-B have been asked to provide initial comments on what we can say about how behaviour may change following antibody testing for COVID-19.

2. We have provided two notes previously [1 April and 13 April], highlighting possible risks associated with testing that should be pre-empted and mitigated.

3. There is some evidence from polling data that people who believe they have had COVID-19 are less adherent to some social distancing measures and hand hygiene advice. However, there are important limitations to these data, including the possibility of self-misdiagnosis.

4. Two studies are in progress focused on developing the best way of describing antibody testing and the best way of communicating results to minimise misunderstanding and to promote engagement in behaviours that minimise transmission. The results of the first study – conducted in collaboration between SPI-B and the Behavioural Insights Team – are expected on 23 April. The second study is being undertaken by the NIHR Policy Research Unit in Behavioural Science with results expected in early May.

There are a range of risks that should be pre-empted and mitigated

5. We have previously provided a note to SAGE about possible risks associated with testing dated 1 April 2020, with some points in it subsequently developed in a second note dated 13 April 2020.

6. We cannot estimate the likelihood of the potential negative behavioural consequences of testing that are set out in those notes. But we recommend that those developing policy and guidance consider ways to prevent these risks from occurring or mitigate any harm that may arise. This will allow the benefits of testing to be realized more fully.

7. Some of these risks are exacerbated by the fact that even a good test will wrongly identify some people as having had COVID-19 when they have not and some people as not having had COVID-19 when they have. As an example of the magnitude of these effects, see Appendix One.

8. For those who test antibody positive, risks include failing to recognize and respond to future symptoms of COVID-19, reduced adherence to transmission-reducing behaviours and volunteering for tasks that increase exposure to COVID-19 at work.

9. For those who test antibody negative, risks include excessive avoidance of social contact and avoidance of return to work or specific activities at work.

10. Discrimination by employers based on test results, and system gaming by those seeking to obtain or provide a test result are also possible.

11. These risks are largely based on expert opinion. However, we note a small literature in the context of a major public health incident (partly reviewed in [1]) that has observed:

a. US postal workers not adhering to prophylactic antibiotics during the 2001 anthrax attacks because they misunderstood a test - which showed they had a low risk - result to mean they were at no risk [2,3];

b. A strong desire among some residents of Goiania, Brazil for a test certificate demonstrating that they had not been contaminated in a radiological incident, because of fears of discrimination [4,5];

c. False reassurance, confusion, suspicion and anger relating to untimely or unclear feedback of test results among those potentially exposed to anthrax or polonium 210 [6,7,8];

d. Decisions not to accept testing among those caught up in the Litvinenko affair because a perceived low likelihood of exposure [8];

e. Historical accounts of attempts to avoid combat in World War One by actively seeking infection [9], and discrimination by employers in the US based on yellow fever status [10]. We are also aware that some commentators report having heard "rumblings" of coronavirus versions of chickenpox parties, but have yet to see evidence of this in practice [11].

There is some evidence that people who think they have had COVID-19 are less adherent to social distancing and self-isolation.

12. The Department of Health and Cabinet Office are running regular on-line polling through market research companies.

13. As part of an NIHR-funded research project, a joint team from King's College London, University College London and Public Health England are adding value to these data by conducted more detailed analyses.

14. A recent set of analyses examined whether behaviour among those who believe they have already had COVID-19 differs to behaviour among those who do not believe this [12].

15. There are limitations to this approach, in particular the use of self-report data and the danger of using self-diagnosis as a proxy for a test result. It was notable that those who believe they have already had COVID-19 are less likely than other people to correctly identify the symptoms of COVID-19, suggesting that some are self-misdiagnosing.

16. Nonetheless, the polling data suggest that those who believe they have had COVID-19 are also less likely to adhere to certain social distancing measures (meeting friends/family and going out to the shops for non-essential items) and are less likely to intend to adhere to self-isolation measures if someone in their household develops symptoms. They are also less likely to wash their hands upon returning home. This is in line with point 8 in this note.

Ongoing research on how to refer to "immunity passports"

17. The terminology used to refer to testing could set false expectations. Various terms have been used such as Immunity Passports and Immunity Certificates and Antibody Tests.

18. At the suggestion of SPI-B, the Behavioural Insights Team has been commissioned to run an on-line experiment to test whether the terminology used influences people's understanding of the meaning of the test results.

19. 6,000 participants have been randomized to receive one of eight short descriptions of a test. These are identical except that the title refers to an antibody test, antibody certificate, antibody passport, immunity test, immunity certificate or immunity passport, and results refer to either presence of antibodies, high level of antibodies, or a low risk catching coronavirus in the future.

20. Participants are asked to consider that they receive a 'positive' test result using the relevant terminology. They are then asked whether they believe it is likely that they could get COVID-19 in the future and whether they would reduce handwashing or social distancing. Participants are also asked if they would take the test, if offered it.

21. Results are expected on 23 April 2020.

Ongoing research on how to communicate test results

22. Following discussions at SAGE, the NIHR Policy Research Unit in Behavioural Science has been commissioned to conduct rapid research on how best to communicate test results. The lead researcher is Professor Falko Sniehotta (falko.sniehotta@newcastle.ac.uk) who is happy to provide feedback direct to the relevant policy teams / guidance cells.

23. The work includes online focus groups to provide a policy brief on: how the public understand Covid-19 antibody tests; their motivation to comply with testing; and the possible consequences of testing on social distancing, hygiene measures and return to work.

24. The work also includes an online experiment to test the impact of the following on likely social distancing, hygiene measures and return to work:
    a. What the test result is (positive vs negative);
    b. How the uncertainty in the result is explained;
    c. How the implications of the result on a person's level of future risk are explained;
    d. How the importance of social distancing measures are explained in the test results;
    e. Whether communication focuses on the common good vs. individual benefits.

References

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Appendix one: An example of misclassification rates for a test with 98% sensitivity and specificity, in a population with 5% prevalence.