Scottish Government Scientific Strategic Advisory Group on Testing
Tuesday 16th November 2021

Note of meeting

Attendees

1. David Crossman – Chair
2. Rebekah Carton
3. Jeanna Sandilands
4. Donald Inch
5. Niamh O'Connor
6. Matt Holden
7. Emma Hoffman
8. Felicity Hollands
9. Roderick Duncan
10. Christine McLaughlin
11. David Thompson
12. Mel Giarchi
13. David Yirrell
14. Caroline Pretty
15. Andrew Millar
16. David Stirling
17. David Taggart
18. David Yirrell
19. Duncan McCormick
20. Mark Woolhouse
21. James Wason
22. Jim McMenamin
23. John Nicholson
24. Iona Frost
25. Iona Currie
26. Ingolfur Johannessen
27. Evangelia Nakou
28. John Nicholson
29. Michael Lockhart
30. Sarah Chalmers
31. Sarah Heritage Vivers
32. Stephanie Thomas
33. Steven Carter
34. Kate Templeton
35. Thomas Evans
36. Josie Murray
37. Alan Deuchars – Secretariat

Chair welcomed attendees and introduced the topic for discussion.

Can Large Scale PCR Testing be Scaled Back?

1) Current use of PCR Testing
Niamh O'Connor

Niamh introduced the broad subject for debate and gave an account of current questions being asked within policy. This included assessing the value of PCR testing in reducing spread of the virus while it is endemic; the trade -offs to switch to LFD for non–clinical care testing. Value was a consideration, and there were potential immunity risks to reduced transmission of an endemic virus.

Mark Woolhouse commented that any change to testing strategy needed to encompass planning for uncertainty and needed to be clear on the unknowns.

2) Where can LFD replace PCR?
Jim McMenamin/PHS

David Yirrell gave an overview of current scientific advice around the reliability of LFD testing, as compared with PCR.

In general, Antigen tests are less sensitive than PCR. The sensitivity of LFD varies by manufacturer, in the region 50-80%. They are approximately 75% as sensitive as PCR, and the sensitivity relates strongly to viral load. Infectiousness increases with load and symptoms; and is linked to the ability to culture virus.

Specificity is high, 1/1000 false positive rate.

A graph showed the ability of the LFD to detect the virus during the course of the disease, compared with PCR. This showed that more frequent testing with LFD could theoretically mitigate the reduced sensitivity.

Recent data shows LFTs can detect Covid-19 in 65-89% of PCR samples, however this increases to 90% for samples with CT less than 25, and 95% where virus can be cultured.

Some broad advice was derived –
LFDs have a role in reducing spread if used frequently, widely, and sampled effectively. Positives should be confirmed, as despite high specificity, when doing mass scale testing the ~1% false positive rate is significant. LFT effectiveness increases where the general population has a degree of immunity.

Risks were noted – LFT will miss pre-symptomatic shedding and low viral loads, and he regarded this form of testing as not appropriate for protecting vulnerable groups.

3) PCR Testing & Knowledge of the Disease
Mel Giarchi / Iona Currie

Mel Giarchi presented to slides (available on Objective Connect) which considered the removal of wide scale PCR testing, and the impact this would have on our knowledge of the disease.

She noted that there were other sources of intelligence, eg. surveillance, ONS, hospitalisations, deaths (based on death certificate), NHS data (occupancy, calls), wastewater monitoring. These could back fill some aspecst of pcr-derived intelligence.

However, data which are derived specifically from PCR testing would be affected, in particular case rates per 1000; and local projected rates. She noted the impact on low level geographic data. Most modelling of R is based on either Pillar 2 testing or case data.

Mel noted the potential impact on behaviours of the removal of wide scale PCR testing. It was queried whether ONS data could be used to model spread, but this is not possible as it covers household spread only, and would not show localised outbreaks via nosocomial transmission, or in localised instances such as prisons.

4) Utility of Wastewater Monitoring: Can it replace Large Scale PCR Testing? *Andrew Millar*

Andrew Millar presented on the utility of wastewater monitoring, its accuracy and sensitivity, and where this can provide utility in the absence of large scale PCR testing. Full slides are on Objective Connect. Highlighted that the current programme has cost only £2.5m and provides coverage of 77% of Scotland. WWT can detect one case in 1000, possibly 1 case in 10000. Slight delay in the upswing in cases (by a few days) but very helpful and faithful to the down turn in cases as an unbiased sample.

This included a report on the current status, cost and sampling capacity. The consistent relationship between wastewater and case data was noted, with wastewater data slightly delayed compared with cases.

Mel noted that Scotland is unique amongst UK nations in using wastewater to model R. R estimates are generally similar to those produced via case models, occasionally slightly higher. Andrew commented on how wastewater could reduce the need for individual testing under different scenarios.

Wastewater also has potential utility to help monitor the spread of variants. England has been using sequencing to detect variants, extent of utility not clear. Before Christmas, Scottish wastewater samples will begin to be sequenced using the English method

5) Discussion

Chair summarised presentations and asked members to consider if PCR testing disappears at scale, can we replace this with LFT and Wastewater?

Thomas Evans noted the efficacy of new treatments, one from MSD. and one from Pfizer, for high risk patients, is currently being examined. Entry level of treatment at the moment is a PCR test. LFT could be used and might speed diagnosis and treatment

Opinion offered that it was possible for GPs to use LFT as a discriminator in the context of other symptoms and considerations.

Members discussed utility of case data, and that it was important to divorce cases from outcomes. It was noted that LFTs may perform better with Delta given the higher viral loads.

Consensus that there was a crucial question on timing – at what point is it possible to sacrifice the benefits that wider PCR testing brings for the cost and logistical advantages of moving to LFT. There was agreement that there is a case to be made for transitioning to LFT, question is when.

Group discussed implications for transmission – there is an estimated 20% effect of test and protect on transmission rates – how much does this drop with more reliance on LFT. Noted that isolation requirements are not in legislation in Scotland, in contrast to England and Wales.

Noted we have data on LFT behaviours, but only for reported (mainly positive) results. Noted that there are new mobile app solutions for recording LFT test results.

Director of T&P summarised that policy thinking had moving to territory that there is an acceptance that T&P doesn't need to stay the same. Critical questions are how far can changes go, and what is the evidence base.

Chair summarised that this discussion was start of thinking, that we need to identify our 'need to knows'. There is perhaps a deficit in behavioural analysis, and work could be considered for commission. There may be some data available in terms of behavioural responses to positive LFT which warrants examination.

5) AOB

Due to a change in secretariat, the current Outlook meeting invites will be replaced this week.