

Covid-19 Testing Methods Bulletin No 4 – 7 May 2020

Dear Colleague

We are very grateful to you for your significant contribution in meeting last week's testing goal, delivering over 100,000 tests nationwide in a day. This scale up is all down to your hard work and dedication.

We have updated the Testing Methods platform, to continue championing and sharing out novel ideas. We have set up two new challenge topics, focusing in further areas where there is potential to support labs. One challenge covers alternatives to swabs for sampling, and the other covers end-to-end efficiency and speed of testing. Do visit the platform and join the conversation on these, especially to help us understand where we can best support you.

Our next engagement webinar is this Tuesday, 12 May, at 10.00-11.30, and we want to think about current solutions available in more detail and discuss practical steps for implementation. We also want to think through the ambition for testing and scale up, and scenarios we might find ourselves in over the coming months.

While we kick-off these two new challenges, we do not have newer solutions to share this week. We do encourage you to continue working through how you will implement relevant solutions from the 15 shared in the previous bulletins. A recap of these is below.

Sue Hill

Chief Scientific Officer, NHS England

Jo Martin

President, Royal College of Pathologists

On behalf of the moderators' group.

Progress so far:

We want to hear from your labs on progress being made to implement novel solutions

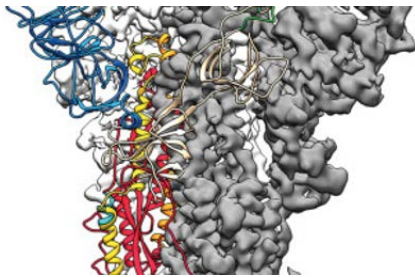
RNA extraction capacities are currently challenged even with automated platforms.

New methods of extracting viral RNA or enabling viral detection without an extraction step would help remove this bottleneck, as long as they are "ready to go" and can be integrated into existing or optimised PCR testing chains.

- We heard from 20 labs in England, covering a spread of 13 of the 29 pathology networks, and a range across London, the South, North, Midlands and East.
- 9 of these labs had implemented one or more of the RNA extraction methods we have shared from the platform, with a further two explicitly planning to use a method.
- Two-thirds of labs have tried or are due to try methods set out in previous bulletins. A further 24 per cent of labs are currently unsure of their next steps or considering options.
- Some labs have noted that the methods have allowed them to better manage consumables shortages and reduce turnaround time or increase throughput, though we recognise labs are facing different circumstances and levels of constraint.

As we put out further solutions and continue to engage the labs community, we will want to hear about others' progress. We will be adding a section to Tuesday's webinar to hear from labs.

RECAP: The 15 solutions we shared across bulletins 1-3



Solutions for RNA extraction methods:

1. [RNA extraction free and heat treatment free COVID-19 PCR direct from swab method](#)
2. [NWLP extraction free protocol - Using SPS and Non-proprietary buffer with the AusDiagnostics SARS CoV-2 assay](#)
3. [Beads based method for RNA extraction](#)
4. [Fast and scalable extraction protocol from AusDx](#)
5. [Heat inactivation, no extraction needed](#)
6. [RNA Extraction-Free COVID 19 Assay by Quantitative Sanger Sequencing](#)
7. [Open-source Bomb.Bio RNA extraction](#)
8. [Hebrew University Technique](#)
9. [One tube COVID kit that does it all in less than 1 hour \(POC\) or 2 hours \(96 plate\)](#)
10. [EX-TRACT RNA solution method for use with the Bosphore 2019-nCoV v1 and v2 PCR kits](#)

Low volume blood collection and sample elution for serology testing:

11. [Using the same blood collection system as Thriva](#)

Dry swabs for use in virus detection:

12. [Dry swabs into lysis buffer](#)
13. [Public Health Wales: Detection of 2 SARS-CoV2 using the ABI 7500 Fast](#)
14. [Using Guthrie Cards for DNA and RNA PCT tests](#)

Transport media that inactivate the virus

15. [Create an inactivating buffer collection kit in-house](#)

Q&A from the testing engagement webinar

In each bulletin we will work through key questions you have asked us at engagement events

Q: Is there the opportunity to use pooled PCR testing of swabs to increase throughput? Does anyone have experience or has found problems with that?

A: This is a thoughtful idea and one we'd like to explore. One of the new challenge sections on the Testing Methods platform covers [end to end efficiency in testing](#). Within this we have already seen discussion on pooled PCR testing, for instance [here](#). It will be wonderful to keep this conversation going and fully explore how this testing approach might work.

Q: Will the validation of Desktop PCR solutions include non-invasive sample types such as throat gargle/self-collected salivary specimen?

A: Similarly, the new challenge we have opened up on [alternatives to swab sampling](#) is a great place to discuss this further. We are open to ideas on testing saliva, stool, urine and other samples, and we welcome discussion on practicalities for running tests using these samples.

Q: Is it possible to advise who managed a review of the submissions made from organisations offering re-agents?

A: All commercial offers for reagents, consumables and test kits go through an official triage process run [here](#) on gov.uk. All organisations fill in initial details for the reagents they are offering. These then go to the DHSC Testing Supply programme, specifically to tests and consumables review teams for approval. Where reagents meet the specifications set by the review teams, suppliers are contacted for next steps.