

Covid-19 Testing Methods Bulletin No 2 – 24 April 2020

Dear Colleague

We are delighted at the continued support from the scientific and diagnostic community, as we reach over 200 submissions on the [crowdsourcing platform](#) launched to solve pressing challenges in COVID-19 testing. We have also now added a fifth challenge, asking for examples of small volume blood collection for rapid serology testing.

We are sharing further solutions which we believe, firstly, have potential for rapid uptake and, secondly, can address the current challenges in testing at scale. We continue to ask for your help in understanding how these approaches work in practice. Do please consider these approaches where they fit your local context, and continue to test and validate these so we can begin to take your feedback.

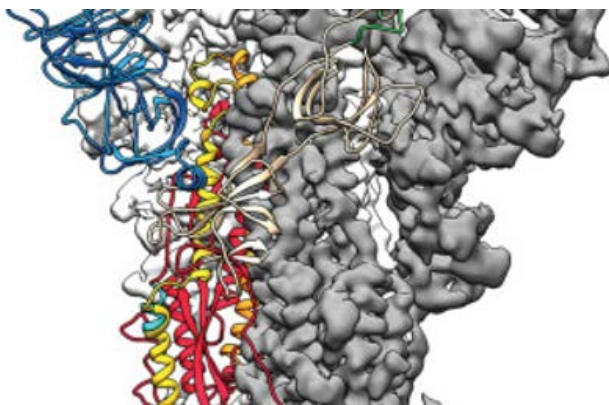
Sue Hill

Chief Scientific Officer, NHS England
On behalf of the moderators' group.

Jo Martin

President, Royal College of Pathologists

NEW SOLUTIONS: Solutions for RNA extraction methods



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.

1. [RNA Extraction-Free COVID 19 Assay by Quantitative Sanger Sequencing](#)
2. [Open-source Bomb.Bio RNA extraction](#)
3. [Hebrew University Technique](#)
4. [One tube COVID kit that does it all in less than 1 hour \(POC\) or 2 hours \(96 plate\)](#)
5. [EX-Tract RNA solution method for use with the Bosphore 2019-nCoV v1 and v2 PCR kits](#)

NEW SOLUTIONS: Transport media that inactivate the virus



In order to increase laboratory throughput we are looking at ways to minimise processes including the need to handle test samples in Category 2+/3 facilities. We are looking for transport media solutions that inactivate the virus reliably or do not add significant steps to the laboratory process or impact on viral detection.

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

NEW SOLUTIONS: Dry swabs for use in virus detection



A key element of speeding up the end to end testing process is the availability of swabs that can be used easily and reliably to detect the virus in a range of different swabbing applications and age groups including for use in home testing and which can be used with multiple extraction platforms.

7. [Dry swabs into lysis buffer](#)
8. [Public Health Wales: Detection of 2 SARS-CoV2 using the ABI 7500 Fast](#)

RECAP: Previous solutions for RNA extraction

In our [first bulletin](#) we published five RNA extraction solutions which we believe have potential, covering a mix of alternative extraction approaches and extraction-free approaches