RAPTOR-C19 Plain English Summary of Results

RAPTOR-C19 was set up in 2020 to assess new tests that could be used by GPs and medical staff in GP surgeries and testing centres in the community that might be useful to identify people with COVID-19. This was important to help stop the spread of COVID and to help doctors make decisions about treatment. While tests that could be carried out in labs were available early in 2020 there was a need to find tests that gave reliable and quick results but did not need to be sent to a lab. These types of tests are often called 'point of care' tests and are used directly by doctors and other health care professionals.

RAPTOR-19 recruited 2262 participants between October 2020 and March 2024. Participants were both adults and children who went to their GP practice in England or a testing centre in Wales, because they thought they might have COVID.

Participants had two or more swabs taken and some basic information collected, including what their symptoms were and how long they had felt ill. One swab was sent to the laboratory and one or more were used in point of care tests. Results from the lab and point of care tests were compared to check the accuracy of the point of care tests. Four point of care tests were evaluated in the study. These were

1) Roche-branded SD Biosensor Standard™ Q SARS-CoV-2 Rapid Antigen Test
2) BD Veritor™ System for Rapid Detection of SARS-CoV-2
3) LumiraDx SARS-CoV-2 and Flu A/B assay
4) Roche-branded SD Biosensor SARS-CoV-2 & Flu A/B Rapid Antigen Test.

Both LumiraDx SARS-CoV-2 and Flu A/B assay and Roche-branded SD Biosensor SARS-CoV-2 & Flu A/B Rapid Antigen Test also tested for Flu. COVID and Flu have very similar symptoms and knowing if an infection is COVID or Flu is useful to guide treatment now that Social Distancing has ended and more types of viruses are circulating again.

The study found that the Roche-branded SD Biosensor Standard™ Q SARS-CoV-2 Rapid Antigen Test identified 84% of people (84 out of 100) who had COVID.

The BD Veritor™ System for Rapid Detection correctly identified COVID in 76.5% of people (76 out of 100).

LumiraDx SARS-CoV-2 and Flu A/B assay detected 80.8% cases ofCOVID (80 out of 100) and 61.5% cases of Flu A (61 out of 100). There were not enough cases of Flu B in the study to be able to assess if the test was accurate for Flu B.

Roche-branded SD Biosensor SARS-CoV-2 & Flu A/B Rapid Antigen Test detected 70.4% cases of COVID (70 out of 100), 29.1% cases of Flu A (29 out of 100) and 22.2% cases of Flu B (22 out of 100). However, the study did not recruit as many participants as hoped for this test who tested positive on their lab test for either COVID or Flu so our estimates of accuracy for this test are less certain than for the other tests evaluated in RAPTOR where large numbers of patients with COVID and Flu were recruited.

The results for RAPTOR-C19 show that point of care tests may be useful for confirming that patients do have COVID but are not reliable enough to rule out that they do not have COVID. They are less reliable for Flu but may be useful when there are very high levels of Flu circulating.

RAPTOR-C19 was organised by the University of Oxford and funded by the University of Oxford, UK Research & Innovation, National Institute for Health and Care Research and Asthma + Lung UK. The

Roche-branded SD Biosensor Standard™ Q SARS-CoV-2 Rapid Antigen Test was purchased through grant funding, whereas all other point of care tests, associated consumables and training were provided free of charge to the University of Oxford by the named manufacturers and suppliers. Lumira Dx Limited and Roche Diagnostics International Ltd also provided an additional grant to support the study. No funders had any role in designing RAPTOR-C19 or analysing the results.