Australian Government
National Health and Medical Research Council

NHMRC

National COVID-19 Health and Research Advisory Committee*

Date of advice: 20 August 2021

Advice 25: Rapid review of the evidence on rapid antigen testing

Focus

The advice seeks to summarise the evidence on the utility of point of care (POC) rapid antigen tests / rapid antigen detection (RAT/RAD) in managing ongoing community transmission of SARS-CoV-2. A number of international examples illustrate the use of RAT/RAD to manage the SARS-CoV-2 pandemic and identify key considerations for implementation, delivered through either POC or an at-home test.

Subsequent advice will be provided by NCHRAC on the suitability of RAT/RAD in various occupational, educational and healthcare settings, as well as noting circumstances where a false negative RAT/RAD may pose a significant risk.

Note

This report is point in time and may need further updating as more evidence is available.

This report was developed with the assistance of a working group of the National COVID-19 Health and Research Advisory Committee (NCHRAC), chaired by Professor Bart Currie, with Professor Michael Good, Drs Katie Allen and Mike Freelander and Mr Daniel Zhou.

Key points:

- RAT/RAD offers fast, low cost testing that is accessible and can be used for wide-scale screening to detect and isolate individuals with COVID-19 and commence timely contact tracing.
- RAT/RAD has been used overseas as an effective screening tool for COVID-19 under various circumstances, however it is uncertain how the overseas results will be impacted by the emergence of new SARS-CoV-2 strains, such as the Delta variant.
- When determining which settings may be appropriate to use RAT for screening, consideration needs to be given to the prevalence of COVID-19 in the community and also in the specific settings targeted for RAT screening, noting the sensitivity and specificity issues with using RAT.

* NHMRC is providing secretariat and project support for the Committee, which was established to provide advice to the Commonwealth Chief Medical Officer on Australia's health response to the COVID-19 pandemic. The Committee is not established under the NHMRC Act and does not advise the NHMRC CEO.

- At present, RAT/RAD testing in Australia should be restricted to asymptomatic individuals, while noting that some overseas studies used RAT/RAD for both asymptomatic and symptomatic individuals.
- **Australia could consider immediate implementation of RAT/RAD**, in essence the surveillance in selected populations, but only for asymptomatic people in:
    - various urban and remote workplace settings
    - residential facilities such as aged-care homes
    - hospitals and primary care settings in communities with ongoing COVID-19 transmission above defined levels
    - school and other educational settings in communities with ongoing COVID-19 transmission above defined levels
    - specific home quarantine circumstances.
- **Australia could move towards RAT/RAD for symptomatic people in circumstances that will mitigate delayed diagnosis**, resulting in delayed case isolation and contract tracing. Such circumstances include where results from RT-PCR are delayed due to stretched laboratory capacity or location; for example testing of symptomatic people:
    - in residential settings, such as aged care, to allow rapid commencement of SARS-CoV-2 infection protocols for the facility
    - in rural and remote settings where access to timely RT-PCR is inadequate.
- Any positive RAT/RAD requires an individual to isolate and notification to the local Public Health Unit to facilitate confirmatory testing with RT-PCR testing, from a repeat sample, and ongoing public health responses, including contact tracing.
- The **use of self-administered at-home RAT/RAD test kits should be progressed with caution** to assess the benefits and potential detriment and obstacles for expanding RAT/RAD for detection and management of COVID-19.

Approach to the review

A PubMed search was undertaken for systematic reviews and meta-analyses, published in 2021, that examined the effectiveness and accuracy of POC RAT/RAD to detect COVID-19. The key words [(SARS-CoV-2) OR (COVID-19), antigen, test, molecular, diagnostics] were used and revealed 30 articles of which 16 were used for the synthesised narrative on rapid antigen testing.

International reports and scientific briefs that evaluated the utility of POC and at-home RAT/RAD to detect COVID-19 in different settings and levels of community transmission were reviewed to identify decision nodes for implementation. Examples were also sought on the implementation of POC and at-home RAT for the detection of HIV and other sexually transmitted infections (STI) to guide future implementation.

Out of scope:

- evaluation of specificity and sensitivity of POC RAT/RAD products approved by the TGA
- examination of COVID-19 antibody testing
- detailed examination of the efficacy of rapid molecular testing

- use of RAT and impact on laboratory capacity
- economic impact of RAT/RAD.

Summary of evidence

There are three major testing methodologies for diagnosing the SARS-CoV-2 virus; nucleic acid tests (PCR-based), antigen tests and antibody tests. Gene sequencing of products from nucleic acid tests is used to evaluate virus strains and inform epidemiology locally, regionally, nationally and internationally.[1-4]

In Australia and around the world, laboratory real-time reverse transcription polymerase chain reaction (RT-PCR) tests are considered the gold standard for diagnosis of SARS-CoV-2.[4,5] RT-PCR requires analysis with specialist laboratory equipment, with results generally taking less than two days depending on lab capacity, but results can be delayed for up to a week or longer when large case numbers are occurring and for samples collected from locations far from the testing laboratory, such as for rural and remote communities.[2,6]

To enhance our public health response in containing transmission it is desirable to have access to rapid testing that enables identification of cases that require isolation and concomitant timely commencement of contact tracing. Faster and decentralised regular testing for COVID-19 in the workplace, educational and healthcare settings is highly desirable as it reduces the risk of outbreaks in these semi-closed settings. There is a growing number of commercial assays in the market and in development.[7] To date, the TGA have approved 50 Point of Care (POC) SARS-CoV-2 tests for use in Australia, including 23 antigen tests, which are the focus of this advice.

Various POC and at-home molecular diagnosis tests are also available internationally and have received Emergency Use Authorization (EUA) by the USA Food and Drug Administration.[8-10] Molecular POC tests have so far shown high levels of accuracy, with one review into POC molecular tests showing sensitivity ranging from 94-100% and specificity ranging from 95.7-100%.[4,6,11,12] A detailed review of molecular testing is out of scope for this advice; however, may be considered for future investigation.

Serologic/antibody tests are not used as a diagnostic test for current infections but can be used to detect recent or past infection and enable a diagnosis of an “historical, not active case”.[3,4] Information on the three main SARS-CoV-2 diagnostic assays is provided in the Background and comparison of molecular, antibody and antigen tests is outlined in Table 2.

Effectiveness and accuracy of RAT/RAD

Most SARS-CoV-2 antigen tests utilise lateral flow technology to detect target proteins. These assays are cost effective, transportable and do not require readers/scanners; however, they are less sensitive than PCR molecular tests.[3]

The ability of tests to detect SARS-CoV-2 infections vary across the course of the disease. Figure 1 shows a graphic approximating the levels of various testing analytes in the days before and after symptom onset. Antigen testing is most effective when there is peak viral load, i.e. during the first week following symptom onset.[3,11]

There are a number of antigen rapid diagnostic tests available on the market that display heterogeneity in their sensitivity and specificity. As such, the World Health Organization (WHO) does not recommend RAT/RAD to be used in place of PCR molecular tests as a diagnostic tool, particularly in areas of low prevalence of disease. The WHO has recommended a minimum performance requirement of 80% sensitivity and 97% specificity.[12,13] In addition to test sensitivity and specificity, it has been argued that the frequency of testing and speed of reporting have high epidemiological value.[14]

Preliminary evidence suggests RAT are most reliable in the early stages of infection where viral loads are higher, i.e. 1-3 days before symptom onset and early symptomatic phases of the illness (within the first 5-7 days of illness) compared to tail end of infection.[13,15] Patients 5-7 days after symptom onset are more likely to have false negative results. More evidence is required on the efficacy of use in asymptomatic individuals.[11]

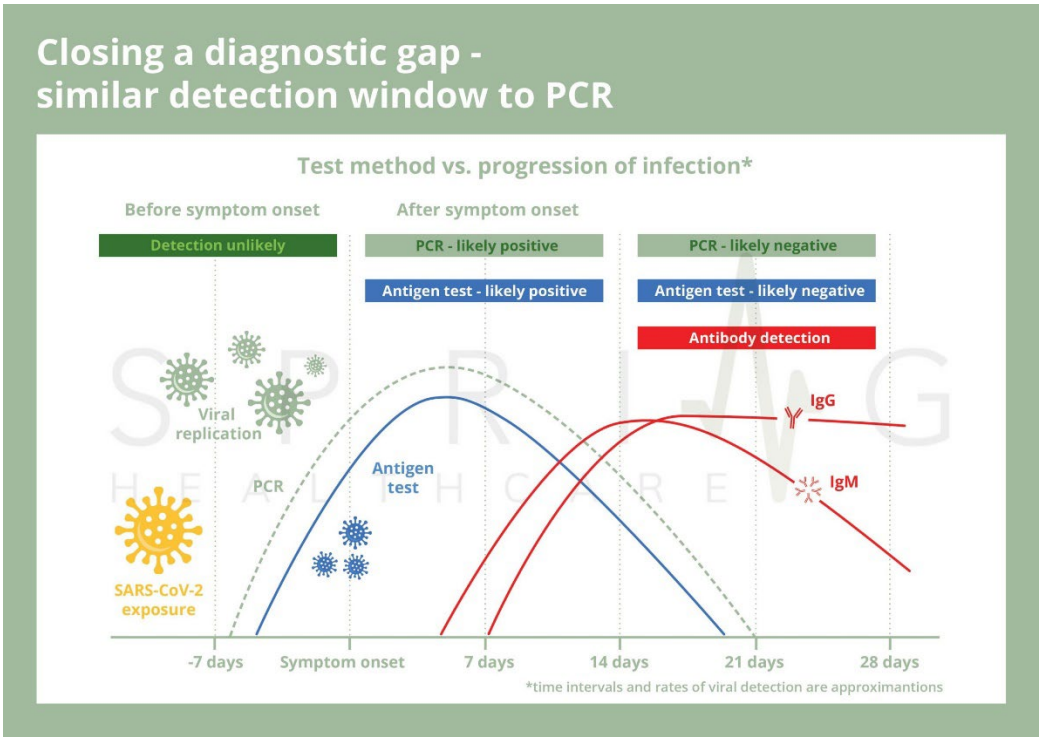

Figure 1: Test method versus progression of infection. Copyright 2020 Spring Healthcare. https://springhealthcare.org/sars-cov-2-antigen-rapid-test-swab/[3]

A meta-analysis published by the Cochrane Library investigated one RAT/RAD test (SD Biosensor STANDARD Q) that has been approved for restricted use in Australia by the TGA.[10,11] The results of testing for scenarios of both symptomatic and asymptomatic people are summarised in Table 1 below.[16]

Table 1: Summary results for SD Biosensor STANDARD Q RAT[16]

	SCENARIO 1: PEOPLE WITH SYMPTOMS If 1000 people had the antigen test and 50 (5%) had COVID-19, the results would be:	**SCENARIO 2: PEOPLE WITH NO SYMPTOMS** If 10,000 people had the antigen test and 50 (0.5%) had COVID-19, the results would be:
CORRECT POSITIVE *(positive test result when the person **does** have COVID-19)*	44 out of 1000 people	35 out of 10,000 people
FALSE POSITIVE *(positive test result when the person **does not** have COVID-19)*	9 out of 1000 people (17% of the 53 total positive results)	90 out of 10,000 people (72% of the 125 total positive results)
CORRECT NEGATIVE *(negative test result when the person **does not** have COVID-19)*	941 out of 1000 people	9,860 out of 10,000 people
FALSE NEGATIVE *(negative test result when the person **does** have COVID-19)*	***6 out of 1000 people*** (0.6% of the 947 total negative results)	***15 out of 10,000 people*** (0.2% of the 9,875 total negative results)

A key opportunity for low cost antigen testing is the possibility of ruling out infection in the asymptomatic population, but with the key risk being a false negative result allowing an infectious person to be active in the community. As outlined in Table 1, the risk of misdiagnosing true positive cases for people with no symptoms is low and negative RAT test results can be used with some confidence confirm an asymptomatic person is not infected (nor infectious) in areas of low prevalence.[3,12,16] The threshold for what constitutes low prevalence depends on the number of false negative outcomes that is acceptable to health authorities.

In the WHO interim guidance, published 11 September 2020, it is recognised that despite the lower sensitivity of RAT compared to RT-PCR tests, antigen tests offer the ability to diagnose people with high viral loads. This rapid turnaround of results provides clinical utility in implementing measures such as isolation and contact tracing to limit further transmission of disease. RAT also provides a rapid and inexpensive test when the availability and resourcing for RT-PCR testing is limited.[11,13]

Indicators for the use of RAT/RAD

Authors of the Cochrane review into SARS-CoV-2 POC tests suggest that antigen tests are sufficiently accurate to replace RT-PCR for people who are symptomatic.[11] However this is not a current recommendation in Australia, where there are lower levels of transmission and far lower absolute numbers of infections than in the UK and USA. In Australia currently, each case of COVID-19 requires accurate confirmation by RT-PCR and subsequent virus genotyping to inform epidemiology. Recommendations currently in Australia are that

RAT/RAD be only used in asymptomatic individuals, with all symptomatic individuals having RT-PCR testing. Should cases escalate in Australia to rates seen overseas, then a pragmatic necessity may become use of RAT/RAD in symptomatic individuals to enable a rapid diagnosis without the delays that can occur with RT-PCR. Under these circumstances it will be even more crucial to reinforce that any symptomatic individual is to self-isolate irrespective of a negative RAT/RAD test, until results of confirmatory RT-PCR are available.

The risks and consequences of both false positive and false negative RAT results must be carefully weighed up when considering the use of RAT/RAD for screening and surveillance in healthcare, social and workplace settings.

Settings where RAT/RAD has been considered, including a mix of symptomatic and asymptomatic scenarios include:

- Circumstances where urgent decisions need to be made about patient care[11]
- Rapid commencement of SARS-CoV-2 infection protocols for symptomatic patients in residential settings, such as aged care[12]
- Fast identification of positive cases in symptomatic individuals to reduce the burden on laboratory testing and allow rapid commencement of contact tracing (as a positive antigen result for a symptomatic individual may not require a confirmatory RT-PCR re-test, although this is not current Australian policy)[15]
- Identification of outbreaks[11]
- Screening asymptomatic individuals for attendance at work, school and other gatherings[17,18]
- Remote or isolated communities where access to RT-PCR is challenging[19]
- Testing individuals for are homeless and/or highly mobile.[19]

The recent outbreak in NSW saw the requirement for certain individuals to undergo regular surveillance RT-PCR testing, putting strain on laboratory capacity and increasing testing wait times.[20] RAT/RAD offers an alternative option for workplace surveillance testing. The US Centers for Disease Control and Prevention (CDC) has published a tool for Antigen Testing for Screening in Non-Healthcare Workplaces.[18] This tool encourages workplaces to consider the community indicators (the total number of new cases of COVID-19 per 100,000 people and the percentage of positive molecular COVID-19 tests) when deciding how often to screen employees. Vaccination status can also be considered when interpreting a negative antigen test result and deciding if follow-up nucleic acid amplification test (NAAT) molecular test is required.[15]

The rate of false positive results for RAT is such that it is recommended in Australia that RAT positive results be confirmed with follow-up NAAT testing for both symptomatic and non-symptomatic individuals.[12] The CDC have published Interim Guidance for Antigen Testing for SARS-CoV-2, including flowcharts for antigen testing protocols for both residential (such as aged care) and community settings, see Figure 2.[15] These protocols reflect the higher prevalence in the US and do not reflect current TGA requirements for confirmatory RT-PCR testing of positive RAT results even in symptomatic individuals.[21]

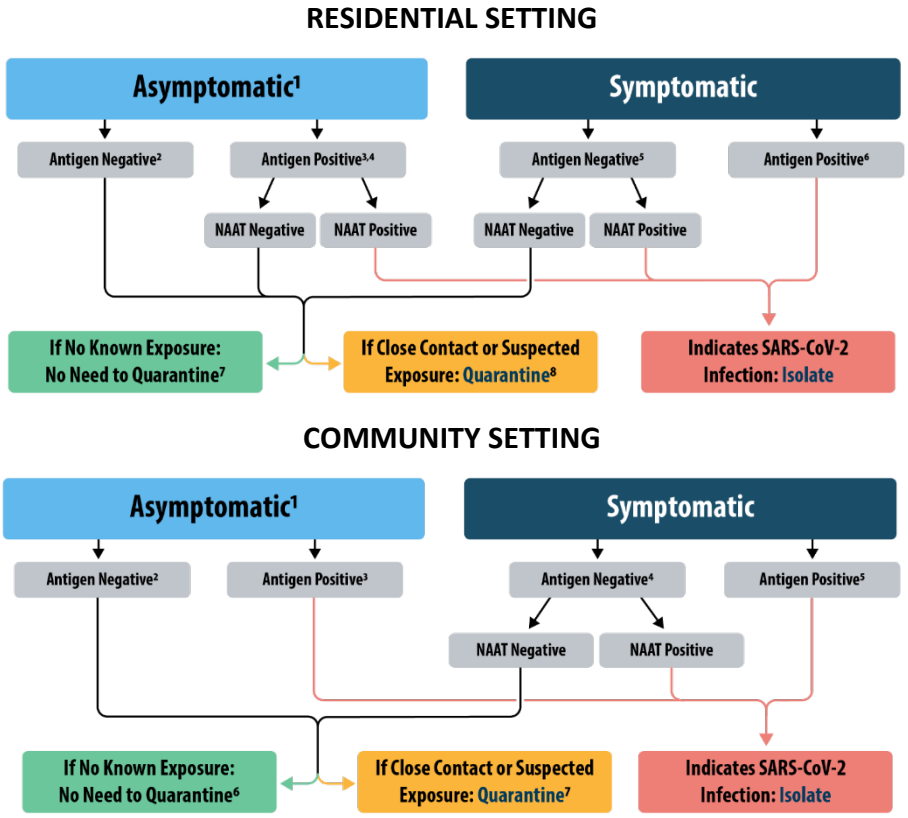

Figure 2: Antigen test algorithm developed by the CDC for both residential and community settings[15]
Note: The CDC protocol does not suggest confirmatory re-testing of positive antigen results, which is not consistent with current protocols in Australia[21]

International perspectives

Antigen testing is increasingly being included in the public health response internationally. Case studies for RAT use in the United Kingdom, Canada, Alaska, New Zealand, Netherlands, India and Slovakia are included in Appendix 1. Key messages from RAT use overseas include:

- The Dutch have adopted RAT for use in some public health service test sites in those with mild to moderate symptoms without the need for retesting with RT-PCR.
- Slovakia's population-wide rapid antigen testing, combined with additional contact restrictions, resulted in a decrease in prevalence of 70%.
- The Canadian Government is supporting some workplaces by providing free RATs for screening programs.
- Pop-up community RAT screening sites have been trialled in Canada.
- POC rapid antigen testing in remote communities in Alaska is used to mitigate delayed results occurring with RT-PCR; and has been suggested as linked to decreases in transmission by enabling more rapid isolation and contact tracing.[22]
- The NHS UK recommends regular, i.e. twice a week, at-home testing for COVID-19 for individuals who do not display symptoms, or have been vaccinated, to reduce community transmission.

- A combination RT-PCR and RAT is offered to home care facility managers to screen staff and patients. RAT has been identified as a useful tool for monitoring and managing outbreaks.
- RAT has been trialled to screen close contacts of COVID-19 cases in schools, as an alternative to isolation; with good results that enable staff and students to continue to attend school.

- New Zealand has not embraced RAT at this time; This reflects the low prevalence of SARS-CoV-2 in the community and sufficient laboratory capacity for RT-PCR.

POC versus at-home testing

At-home SARS-CoV-2 tests are in use overseas and are likely to play an increasing role in the diagnosis of COVID-19 in the future.[3] At-home testing offers advantages in that they are convenient, suitable for longitudinal screening/surveillance and relatively low cost.[3]

The TGA have not authorised the use of at-home testing, citing the need for qualified health professionals, the risk of people with positive results wishing to conceal their infection, and the possibility of inadequate sampling.[21] Some of these inherent drawbacks are somewhat mitigated with the use of automatic reports to health authorities and telehealth proctors.[3]

Further discussion on the benefits of home testing and the implications for the broader public health response will be explored by NCHRAC in the coming weeks.

Background

The three main testing methodologies (antigen, molecular and antibody) are summarised in Table 2. These tests are available in various laboratory, POC and at-home formats.

Table 2: Comparison of the three diagnostic SARS-CoV-2 tests

	ANTIGEN TESTS	**MOLECULAR TESTS**	**SEROLOGIC ASSAYS**
Alternative names/test types	Viral test, rapid test[1]	Diagnostic test, molecular test, NAAT, RT-PCR test, LAMP test[1]	Serological test, serology, blood test[1]
Intended use	Detection of current infection[2]	Detection of current infection[2]	Detection of current or past infection[2]
Analyte detected / persistence of analyte after recovery	Viral antigens[2]	Viral RNA[2]	Immunoglobulins[9]
Specimen type	Nasal swab, nasopharyngeal swab, saliva[1-3]	Nasal swab (shallow or deep), throat plus nasal swab, saliva[1-3]	Blood serum or plamsa[1,2]
Result time	**POC:** 15-30 minutes **At-home:** 15-30 minutes[1,2]	**Lab:** 1-3 days **POC:** 1 hr – same day **At-home:** <1 hr[1,2]	**Lab:** 1-3 days **POC:** Same day **At-home:** [1,2]

Regulatory approvals	**POC:** TGA approved 23 tests.[10] **At-home:** Not approved by the TGA.	**POC:** TGA approved 6 tests.[10] **At-home:** Not approved by the TGA (EUA in the USA[8]).	**POC:** TGA approved 21 tests.[10] **At-home:** Not approved by the TGA.

Other considerations

- Resourcing and availability of rapid tests
- Credentials of testers
- Economic evaluation of implementing RAT/RAD
- Impact of strains on RAT/RAD specificity and sensitivity.

Attachments

Appendix 1: International Examples of Rapid Antigen Testing

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Appendix 1: International examples of rapid antigen testing

The Netherlands

The Dutch Ministry of Health recommends RT-PCR testing in those with severe symptoms, at risk medical groups, people working in high risk settings such as hospitals, and asymptomatic or presymptomatic close contacts.

The Dutch have adopted rapid antigen tests for use in some public health service test sites in those with mild to moderate symptoms without the need for retesting with RT-PCR.[1] In addition, rapid antigen tests are used for close contacts, even when they have not developed symptoms.[1] Close contacts regardless of symptoms are encouraged to get tested as soon as possible after known exposure to avoid delays in identifying people who are positive for SARS-CoV-2 and isolate.[2] Rapid antigen tests are, however, still not used in high risk situations, such as testing of vulnerable people in care facilities, severely ill patients, or healthcare workers.

The identified advantages of rapid antigen testing compared with RT-PCR testing include simplified logistics and reduced dependence on equipment (which in turn allow for testing in the community by qualified professionals and for self-testing) and reduced delays.[1]

The Dutch acknowledge that the use of rapid antigen tests instead of RT-PCR testing may result in a number of missed infections, due to false negatives. This may be partially addressed by the requirement to self-quarantine and repeat testing when symptoms develop after a negative result, either by rapid antigen test or RT-PCR.

To control the spread of the virus, testing symptomatic children is recommended. Children without symptoms should also be tested if the teacher or another child in their classroom has tested positive for COVID-19. Children aged 4 to 12 who have symptoms must isolate and get tested. Children who have had coronavirus and who have symptoms reappear within 8 weeks, do not have to be tested again and may still go to school if they are symptomatic anytime within eight weeks of having had the virus.[3]

Self-test rapid antigen tests can be obtained from a shop, chemist or pharmacy and intended for people without symptoms to identify infections that would otherwise go undetected. A positive result from a self-test must be confirmed with a professional PCR test or antigen test by the Public Health Service.

Slovakia

Slovakia ran mass rapid antigen testing pilot campaign in 2020, targeting the whole population.[4] The intervention allowed citizens to get tested, with the added incentive of allowing anyone participating to not need to quarantine.[5] The pilot reached 65% of the respective Slovakia's population (10 to 65 year olds and older adults in employment; ~5.3 million tests conducted in total) in four weeks,[Error! Bookmark not defined.] while the prevalence was still high (infection growth rate of 4.4% in areas with the highest rate of infection). Nasopharyngeal swabs for the rapid antigen testing were taken by clinical staff. A total of

50,466 participants tested positive. The testing was used as an additional tool to target the whole population to identify asymptomatic SARS-CoV-2-infected individuals. Slovakia's population-wide rapid antigen testing, combined with a period of additional contact restrictions resulted in an estimated decrease in prevalence compared with a scenario of unmitigated growth of 70% (67 to 73%).

Slovakia's execution of a large-scale mass testing campaign presented with several challenges.**Error! Bookmark not defined.** The mobilisation of medical personnel to conduct the nasopharyngeal swabs proved to be a major obstacle. In addition, logistics of mobilising army personnel and testing and personal protective equipment (PPE) material proved challenging. Some of the challenges could be overcome by using other rapid antigen tests with similarly high sensitivity but that are also licensed for use with nasal swabs. Nasal swabs can be self-administered and reduce demand on trained personnel and transmission risk. Swabs can be less invasive and suited better for children and mass testing at schools.

The government used this method as a way to reduce acceleration in the virus spread as an alternative to a strict 3-week lockdown.[6]

United Kingdom

The National Health Service (NHS) UK recommends that RT-PCR testing occur for those presenting with COVID-19 symptoms, isolation is required until the test results are available. For other individuals who do not display symptoms or have been vaccinated, regular, i.e. twice a week (every 3 to 4 days) RAT for COVID-19 is recommended. This is proposed to help stop the spread of infection – isolation is only recommended is a positive result is received.[7]

Test packs can be ordered online and delivered or collected from designated locations or specified sites will conduct the test. People attending or working at schools, colleges and nurseries are able to access RAT. On receipt of a positive RAT or difficulty reading the result, a RT-PCR test is recommended to confirm the result. Only symptomatic patients are required to stay home until the second test result is received.

The NHS also outlines various scenarios where people may be requested to participate in a combination RT-PCR and RAT of such as:

- Part of surge testing, used to prevent new outbreaks spreading.
- Care home managers can arrange for the weekly RT-PCR and twice-weekly RAT testing of staff and residents. More frequent RAT occurs in the event of an outbreak to monitor staff and residents.

The University of Oxford is conducting a study involving more than 200,000 students and 20,000 staff that compares the isolation of close contacts of COVID-19 cases for 10 days and undergo PCR testing compared to close contacts of positive cases partake in RAT every day at school.[8,9] A negative means attendance at school is permitted. The study found daily testing of students and staff who were close contacts was just as effective as isolation in controlling spread of infection. Of those contacts required to isolate, 98% did not develop COVID-19. The use of daily RAT deemed less intrusive on students than isolating and also meant nominating close contacts (who would then be required to self-isolate) was not

required. In regards to the issue of false negatives, it was considered that the RAT had the capacity to identify those who were most infectious and would be required to isolate.

Canada

In Canada, interim guidance has been published on the use of RAT, and is being proposed in three broad categories:[10]

1. Use in symptomatic individuals (molecular confirmation of positive tests may be discontinued given the high specificity in symptomatic individuals)[11]
2. Repeat serial testing of asymptomatic individuals as an addition to other infection prevention and control measures
3. Deployment to provide testing to specific populations (suitable for use in situations where time-to-result is a primary concern or remove/isolated communities)

The Canadian Government are working to increase the use of RAT as a screening tool in workplaces. Some organisations and not-for-profits are eligible for free rapid tests for workplace screening.[12,13] To assist with communication with workers, an infographic has been published to help participating employees understand RAT and why they should participate.[12] Several workplace screening success stories have been published in industries such as banking, retail, food supply, medical services and construction. Firm guidance has not been provided regarding the number of times to test employees per week; however, twice weekly testing has been reported.[14]

In addition to use in workplaces, RAT has been used for asymptomatic community screening. A “pop-up” model has been used in Nova Scotia, where testing events were held in locations such as community centres, food service establishments and entertainment facilities.[10]

Alaska (USA)

The introduction of POC RAT/RAD testing in remote communities in Alaska was followed by a more than threefold reduction in daily SARS-CoV-2 case rates during approximately one month, before the introduction of COVID-19 vaccination.[15] These findings indicate that POC RAT/RAD can be a valuable tool in reducing turnaround times in rural communities where there is reduced access to laboratory-based PCR test. The fast turnaround of results facilitates a reduction in transmission by enabling rapid isolation of infected persons and contact tracing.

POC RAT/RAD testing was performed on symptomatic persons or a person identified as a close contact of a person with confirmed COVID-19. The practice of using antigen tests for symptomatic persons and those considered to be at high risk because of exposure and reserving NAAT for those at lower risk might be useful in settings in which resources are limited for NAAT tests or turnaround times are too long to implement effective isolation.

Of note, one of the unanticipated challenges of using RAT/RAD was that persons frequently mistook a negative antigen test result as an indication that they no longer needed to isolate until serial repeat testing was completed.

New Zealand

New Zealand (NZ) uses oro- or nasopharyngeal samples and PCR to test for SARS-CoV-2 infection in its population. It is deemed by the NZ government to be the most reliable test, particularly if it is taken during the first week of the illness.[16] Given the low level of community transmission, RAT has not been approved for use, however for travellers entering New Zealand will accept antigen tests that have been processed by a laboratory recognised in the country of origin as authorised or accredited to conduct tests.[17]

PCR saliva testing for border workers at quarantine facilities (and workers in the aviation and maritime industry) was introduced on 11 August 2021 through an amendment to the *COVID-19 Public Health Response (Required Testing) Order* 2020.[18] This gives border workers the choice to provide saliva as a sample for surveillance PCR testing for COVID-19 rather than undertake (nasopharyngeal) swab testing cycle.

Testing parameters for saliva tests are increased in frequency from the weekly or fortnightly PCR test (dependant on level of occupational exposure) to a series of tests (minimum of 2) within a 7-day period after attending an affected area, or handling affected items. Individuals presenting with COVID-19 symptoms or a positive saliva test are required to have a nasopharyngeal swab test. Vaccinated workers still need to be tested as they can be infected with COVID-19.

This approach provides flexible testing arrangement for shift workers who may not be able to be tested during working hours. Samples can be collected from the workplace and results are sent to a Smart app which serves as a means of demonstrating compliance with testing routines.

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