CS7.047/Edition: 4

SARS-CoV-2, Influenza and Other Respiratory Virus Testing

Testing Indications – SARS-CoV-2
The public health response to SARS-CoV-2 is continuously evolving. Testing of even mildly symptomatic people may be used to enable a rapid public health response, particularly in high risk settings such as hospitals and residential aged care facilities.

For current testing recommendations in the ACT, please refer to http://www.COVID19.act.gov.au.

Testing Indications – influenza and other respiratory viruses
As most other viral respiratory illnesses are self-limiting and managed symptomatically, routine laboratory testing is often not necessary.

Laboratory testing may however be considered appropriate in the following circumstances:

1. People with influenza-like illness with severe disease (eg hospitalised)
2. People at risk of severe disease (eg chronic illness, immunosuppression, pregnant)
3. Healthcare workers
4. Cases or outbreaks in high risk settings (eg residential aged care facilities)
5. Returned travellers where there may be a risk of emergence of a new influenza strain or respiratory pathogen (eg MERs-CoV).

Note: In individuals with risks for severe influenza, treatment with oseltamivir should not be delayed pending results of testing.

For further details, please refer to:
http://www.health.gov.au/internet/main/publishing.nsf/Content/cdna-song-influenza.htm

Specimen Collection – nucleic acid amplification test (NAAT)
Ensure that appropriate personal protective equipment is used during collection.

Preferred Specimen for SARS-CoV-2 and other respiratory viruses

- **Combined throat and bilateral deep nasal swab** (Figure 1) – use the same swab to sample the throat and bilateral deep nasal (Figure 2). Place the swab directly into the viral transport medium (VTM) collection tube. Break the swab stick mid shaft and leave in the collection tube. Ensure the lid is secured to avoid leakage.

Other Acceptable Specimens

- Combined throat and nasopharyngeal swab (only suitable with use of small, flexible nasopharyngeal swabs)
- Nasopharyngeal aspirates – generally avoided due to risk of generating aerosols
- Lower respiratory tract specimens – sputum, tracheal aspirates, bronchial washes – these specimens are recommended in circumstances where the upper respiratory tract specimen is SARS-CoV-2 not detected but there remains a high clinical likelihood of infection.

For further details, please refer to:
https://www.health.gov.au/sites/default/files/documents/2020/09/phln-guidance-on-laboratory-testing-for-sars-cov-2-the-virus-that-causes-covid-19.pdf

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Specimen Collection – antibody tests
Antibody testing is NOT recommended for acute diagnosis of respiratory viruses due to superior sensitivity of NAATs and delay in antibody production (eg 10-14 days post symptom onset), and should only be considered for retrospective diagnosis where the NAAT is negative (eg post influenza pericarditis). The correlation between SARS-CoV-2 antibody detection and immunity to subsequent infection is not yet known and may vary depending on the type of antibody test used.

When indicated, blood collected into a serum tube is the preferred specimen.

Laboratory Testing – nucleic acid amplification tests (NAATs)

ACT Pathology uses a range of NAATs for the detection of SARS-CoV-2 and/or influenza A & B and other respiratory viruses (RSV, adenovirus, human metapneumovirus, parainfluenza 1-4 viruses, enterovirus/rhinovirus) as well as *Mycoplasma pneumoniae* and *Bordetella pertussis*.

SARS-CoV-2 testing is performed 24/7. Outpatient results are available within 24 hours of collection (typically by 6am the day following collection) and are provided directly by SMS to the patient when a valid mobile phone number is available on the request form. Results for hospital patients and residential care facility residents are available within 8 hours of receipt within the laboratory.

Testing for other respiratory viruses is performed once or twice daily.

More urgent testing for critical SARS-CoV-2, influenza A and B and RSV results can be discussed with the on-call Clinical Microbiologist.

Laboratory Testing – antibody testing
Specimens for antibody testing are currently referred when there is a clear clinical indication for testing. Testing to determine SARS-CoV-2 immunity is not yet recommended due to the uncertain correlation between antibody detection and any short and/or long-term immunity.

Laboratory Testing – rapid or point of care SARS-CoV-2 antigen detection testing
Rapid or point of care antigen tests are less sensitive than NAATs, have not yet been evaluated in asymptomatic people and typically require collection of a nasopharyngeal swab. Whilst a positive result can provide a rapid diagnosis, a negative result should not be used to exclude infection when there is a high clinical suspicion of infection and/or in high risk settings (eg hospitals).

Antibody and antigen detection tests are not currently available at ACT Pathology, however, will be reviewed as further information about the performance and utility of these types of tests becomes available.

For further information, including urgent SARS-CoV-2 testing, please contact the on-call Clinical Microbiologist at ACT Pathology via the Canberra Hospital switchboard on
5124 2000.

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Figure 1: Examples of Swab and Collection Tubes
Note: Other swab types may also be suitable –if in doubt, check with the laboratory

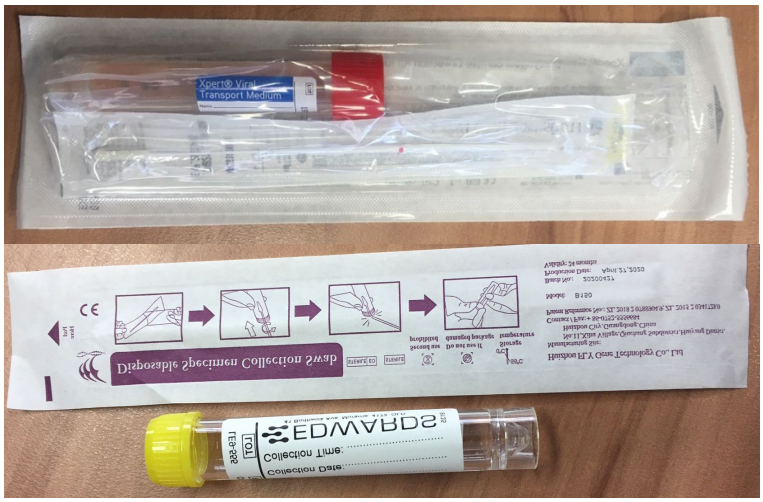
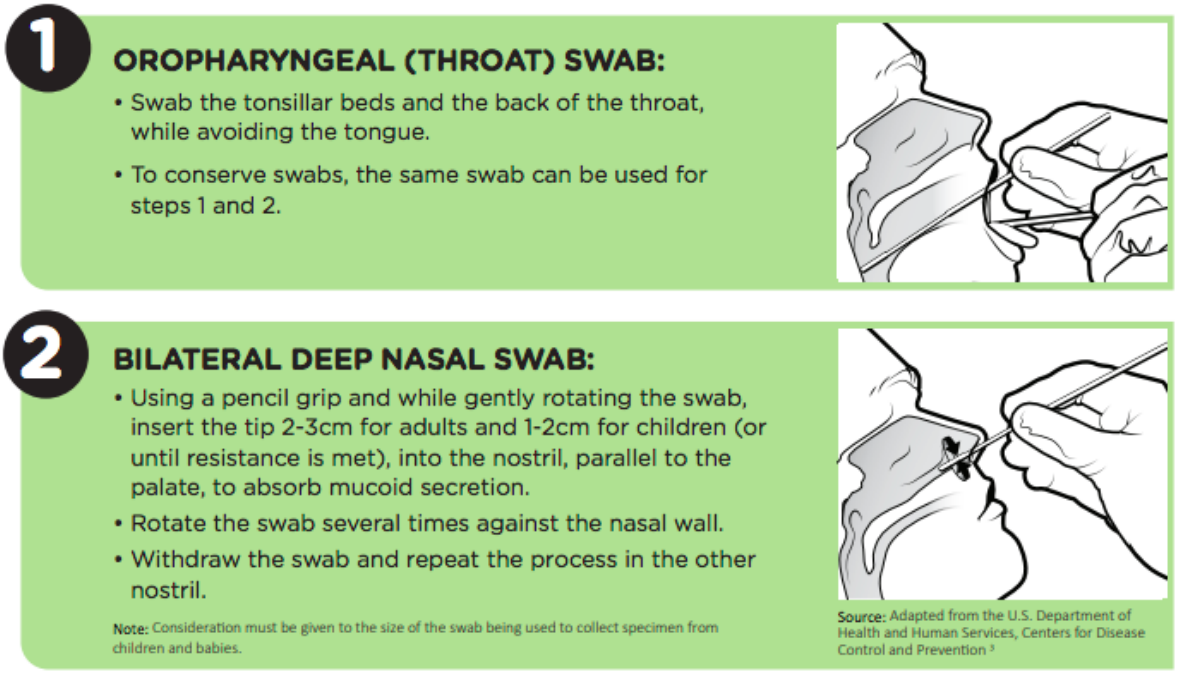


Figure 2: Specimen Collection Procedure – combined throat and bilateral deep nasal swab
(Source: https://www.health.gov.au/sites/default/files/documents/2020/06/phln-guidance-covid-19-swab-collection-upper-respiratory-specimen.pdf)



Note: PHLN recommend using a combined deep nasal and oropharynx swab, to optimise the chances of virus detection while minimising discomfort for the individual being tested. However, this does not preclude the use of nasopharyngeal swab where the medical practitioner deems appropriate.

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