Spirometry Infection Control Recommendations for Primary Care

Spirometry is the most frequently performed pulmonary function test in general practice.

Spirometry in an infected person, carries a high risk of transmitting viral and/or bacterial infections, even if the patient is asymptomatic. Testing generates aerosols that can spread infectious particles in the air, for up to 8 metres. The respiratory plume of exhaled particles may contain virus that remains airborne for more than 30 minutes, lasting up to several hours and surfaces may retain viruses for several days. https://www1.health.gov.au/internet/main/publishing.nsf/Content/cdna-song-novel-coronavirus.htm

Taking into consideration The Thoracic Society of Australia and New Zealand (TSANZ) and Australia and New Zealand Society of Respiratory Science (ANZSRS), updated recommendations regarding the performance of lung function testing across Australia and New Zealand, National Asthma Council Australia (NAC) advises the following recommendations for performing point-of-care spirometry in primary care settings, under the current circumstances of large numbers of COVID-19 cases and high levels of community transmission.

Strategies employed may vary depending on local transmission and practice environment.

Also refer to your local State or Territory Health Department COVID-19 guidelines (websites below).

Before proceeding to lung function testing:

- Ensure that lung function testing is indicated at this time for your patient.
- Prior to lung function testing, ask your patient COVID-19 screening questions:
  - Any new respiratory symptoms such as fever, runny nose, sore throat, cough, loss of smell/taste (refer any symptomatic people for a COVID-19 test)
  - Epidemiological evidence of COVID-19 such as recent overseas travel, travel to an area with significant community transmission, or contact with a suspected or confirmed COVID-19 case.
- Do not perform spirometry testing in COVID-19 positive patients or suspected COVID-19 positive patient.

Recommendations if lung function testing is performed:

- Inline viral/bacterial filters reduce but do not eliminate aerosols and must be used with all spirometry devices
- Contact your spirometer distributor / representative to enquire about availability of an inline filter for your specific spirometer device - do not proceed to testing if an inline filter is not available for your device
- Ensure the patient is afebrile prior to commencing lung function testing
- Ensure lung function testing is performed in a well-ventilated single room, minimising furniture and other equipment - open the windows or have 12 air exchanges per hour. It is preferable that the room is exhausted to the outside. In the absence of adequate ventilation, strategies such as leaving rooms unoccupied between tests or use of HEPA filtration systems to supplement room ventilation are strongly encouraged
- Maintain social distancing practices in the health service with minimal waiting time inside the practice, where practical
- Minimise the number of people present in the testing room, where practical this should only be the subject and the health care worker
- Whenever possible maintain social distancing of 1.5m between patient and health care worker whilst testing
- Always request the patient to observe cough etiquette and respiratory hygiene
- As a minimum during testing, health care workers should wear N95/P2 respirators and eye wear (face shield or goggles). Fit testing of respirators is mandatory. (Respirator head straps ensure a tighter fit than face masks with ear loops)

- Also refer to the PPE requirements (such as disposable gowns and gloves) as recommended by your local health authority guidelines
- Where possible, request the patient to bring their own short acting bronchodilator inhaler and spacer for use during testing. The pMDI's are for single patient use and should not be reprocessed for multiple use.
- In between patients, clean and disinfect all surfaces in contact with the patient (including scales, stadiometer, desk and chairs and testing equipment). Clean first if visibly contaminated before applying a suitable disinfectant solution 0.4% quaternary ammonium, either as an impregnated wipe or a disposable cloth and leave wet. (https://www.tga.gov.au/disinfectants-use-against-covid-19-artg-legal-supply-australia) Dry using disposable paper towels or a disposable cloth.
- The number of spirometry tests performed should always be minimised. Strategies such as triaging referrals to those essential for clinical decision making may be useful

Hand hygiene remains a vitally important component of infection control:

5 moments of hand hygiene (with soap and water, or alcohol-based hand rub, if hands aren't visibly soiled) https://www.hha.org.au/hand-hygiene/5-moments-for-hand-hygiene

- before touching a patient
- before any procedure is performed
- after exposure to respiratory secretions
- after touching a patient
- after touching a patient's surroundings or belongings

Federal, State and Territory Health Departments:

Australian Department of Health	www.health.gov.au
Victoria	www.dhhs.vic.gov.au/infection-prevention-control-resources-covid-19
New South Wales	www.health.nsw.gov.au/Infectious/controlguideline/Pages/default.aspx
Queensland	www.health.qld.gov.au/clinical-practice/guidelines-procedures/novel-coronavirus-qld-clinicians
Western Australia	https://ww2.health.wa.gov.au/Articles/A_E/Coronavirus/COVID19-information-for-health-professionals
Northern Territory	www.library.health.nt.gov.au/COVID-19
South Australia	www.sahealth.sa.gov.au/infectionprevention
Tasmania	www.health.tas.gov.au/publichealth
Australian Capital Territory	www.covid19.act.gov.au/business-and-work/infection-control-training-and-resources

References:

Thoracic Society of Australia and New Zealand (TSANZ) and Australia and New Zealand Society of Respiratory Science (ANZSRS) https://www.thoracic.org.au/documents/item/2364, January 2022