Addendum to Resumption of Pulmonary Function Testing during the Post-Peak Phase of the COVID-19 Pandemic: A Position Statement from the Canadian Thoracic Society and the Canadian Society of Respiratory Therapists (December 9, 2020)

The guidance and recommendations regarding COVID-19 vary greatly between countries and within Canada as well. Not only do the levels of community spread differ, there are unique jurisdictional circumstances with respect to patient populations and resources that make it challenging to have a single recommendation that applies to all settings. Many of the existing COVID-19 recommendations are based on limited or low-quality data and largely based on expert consensus. Therefore, it is not surprising that within Canada there are concerns around the lack of consistency regarding protocols and precautions related to pulmonary function testing (PFT).

The CTS/CSRT guidance for the resumption of PFT services considers the unique circumstances of the patient population and the PFT laboratory environment, and the potential risks posed to both health care workers and patients. The statement and recommendations apply to PFTs in all settings. The CTS/CSRT guidance are consistent with the recent consensus by World Health Organization, US Centers for Disease Control and the Public Health Agency of Canada that there is an increased risk of transmission of SARS-CoV-2 by aerosols and supports airborne precautions for patients in the PFT lab.

Recent evidence highlights that it is challenging to distinguish droplet from airborne transmission and that SARS-CoV-2 can be detected in the air, up to three hours after aerosolization. Evidence indicates that droplets travel further than 2m, in some cases as far as 8m. Furthermore, recent data have been published further supporting that PFTs produce aerosols, and a greater number of aerosols than breathing/talking and thus increase the potential risk of transmission between patients and staff, and between consecutive patients entering the testing environment. These recent findings further support the CTS/CSRT recommendations.

Supported by emerging evidence, the CTS/CSRT, consistent with the American Thoracic Society and European Respiratory Society, consider there to be an increased risk of aerosol generation during PFT testing and that health care workers are in direct contact for prolonged periods of time with patients who cannot wear masks during the procedure, thereby recommend that aerosol precautions are taken in the PFT laboratory. The CTS/CSRT recommendations include a layered range of precautions that include screening patients prior to testing, testing in private rooms, ensuring adequate ventilation of testing rooms, appropriate cleaning and time between patients. No single precaution is meant to eliminate the potential risk of transmission, but the collective use of these precautions within the local context can help to minimize potential risk. The use of an N95 mask alone is insufficient to protect patients and staff from the transmission of SARS CoV2 during the peak and post peak pandemic. Each facility must evaluate their local environment, the local epidemiology of viral transmission, the characteristics of the patient population and other facility wide practices to reduce the potential transmission to staff and vulnerable patient populations when they attend the PFT lab.

The duration of viral shedding and the period of infectiousness varies between individuals. It is recommended that patients who have previously tested positive for COVID-19 return to their baseline clinical status before PFTs are performed, unless PFTs are being used clinically to manage the COVID related pulmonary symptoms. The precautions outlined in the CTS/CSRT position statement for PPE, the testing environment and cleaning assume that asymptomatic patients attending the PFT lab are...
suspected of being COVID positive, therefore these same precautions would apply to patients who have tested positive for COVID.

It is recognized that there needs to be a balance between increasing the number patients tested for the clinical management of their disease against the potential risks of testing. It is encouraging that many laboratories have modified the PFT environment to return to near pre-COVID testing levels.

The recommendations contained in this position paper are guided by published scientific studies and other international medical societies in order to guide safe practice during pulmonary function testing. The position paper was peer-reviewed by medical practitioners working in pulmonary function, including physicians and respiratory therapists, and approved by the Boards of each society. The authors of the CTS/CSRT position statement continue to review emerging evidence in relation to PFTs and the risk of aerosol generation and transmission of disease. In light of the absence of definitive evidence on these matters, and as the health and safety and practitioners and patients must remain paramount, there is insufficient reason to change the CTS/CSRT recommendations at this time.

References

5. Van Doremalen N. Aerosol and surface stability of SARS-CoV-2 as compared with SARS-CoV-1. NEJM. 2020; 382:1564-1567.