COVID-19 and Ventilation/Perfusion (V/Q) Lung Studies

On August 28 SNMMI released updates to a previous statement responding to concerns regarding ventilation/perfusion (V/Q) lung scans and, specifically, the inherent risk of spread of COVID-19 to patients and staff from the ventilation portion of this study. At the time of the release of the original statement on March 19, many institutions opted not to perform ventilation studies. In the interim, the COVID-19 pandemic has evolved in different ways depending on institutions, locations, and populations, with questions about the timing and safety of resuming performance of the ventilation portion of V/Q studies.

The transmissibility of COVID-19 associated with medical ventilation systems has not yet been fully elucidated. In some situations, it may remain appropriate not to perform ventilation studies, for example, in institutions or practices in areas of high or increasing COVID-19 prevalence or where access to COVID-19 testing is inadequate.

The goal of the updated statement was to recognize that, in some regions and clinical situations, a ventilation study may be deemed to be clinically necessary to help diagnose lung disease, including vascular and airway disease. In these settings, performance of ventilation studies may be considered, with local and institutional COVID-19 policies and procedures for aerosol-generating and nonaerosolizing procedures serving as the primary source of guidance. The following considerations, which typically are included in facility policies and procedures, should be reviewed prior to performing ventilation studies:

1. In general, patients should have documentation of a negative COVID-19 polymerase chain reaction test; however, in some cases, local policies or regulations may be different.
2. Technologists should wear appropriate personal protective equipment (PPE) when performing ventilation studies, consistent with local policies for the performance of aerosol-generating and nonaerosolizing procedures.
3. Airflow in the room in which ventilation studies are performed should be evaluated, which may help determine the required time for room turnover after such studies.
4. The availability and administration feasibility of ventilation agents—including FDA-approved agents such as Tc-DTPA, Xe gas, and other agents (e.g., Tc-labeled fine carbon particles or Tc-sulfur colloid)—should be considered for performance of ventilation studies.
5. It is recommended that local infection control groups be engaged for guidance and to help evaluate facilities, equipment, and staff PPE use for performing ventilation studies.
6. The approach to performing a ventilation scan in relation to the perfusion scan (i.e., ventilation then perfusion vs. perfusion then ventilation) should be considered on a case-by-case basis, depending on the clinical indication and in consultation with the referring physician.

SNMMI will continue to monitor the COVID-19 pandemic and provide updated information whenever possible.