

Novel Coronavirus: What Neuroradiologists Should Do



We read with great interest the article “Novel Coronavirus: What Neuroradiologists as Citizens of the World Need to Know,” published by the *American Journal of Neuroradiology* in March 2020.¹ The authors have discussed in detail the epidemiology; virulence of coronavirus causing the current pandemic scenario with the pathogenesis, diagnosis and prognosis of the disease. There is an increasing trend toward a high incidence of infection among health care workers, and certain infection control measures have also been developed for health care workers in radiology departments.² Thus, the authors have discussed the role of neuroradiologists in disseminating knowledge and providing guidance to the general public to effectively control the spread. The authors have discussed the contact and airborne precautions that must be followed by neuroradiologists performing lumbar punctures, myelograms, and spine procedures. However, many other distinct procedures performed by interventional neuroradiologists in the emergency setting for active head and neck bleeding, ischemic stroke, and ruptured aneurysms require urgent endovascular attention. Such procedures often need urgent intubation/suctioning, and there is an increased risk of aerosolization of respiratory secretions and human spread of Severe Acute Respiratory Syndrome–coronavirus 2 (SARS-CoV-2) infection. Thus, an interventional laboratory protocol, which has not been discussed previously, must be instituted to limit the spread of the disease and curb human-to-human transmission.

Techniques like preintubation before arrival of the patient in the neurointervention lab, use of powered air-purifying respirator (PAPR) systems by anesthetists, filter systems (eg, high-efficiency particulate air; HEPA) in the anesthesia circuit, and closed circuit bilevel positive airway pressure (BIPAP) machines (when intubation is not done) pose less risk to health care workers because ventilation is managed through a closed circuit. In accordance with considerations for catheterization laboratories published in the *Journal of the American College of Cardiology*,³ we recommend the use of appropriate personal protective equipment (PPE), including gowns, gloves, goggles (shields), and 3-layered surgical masks for all health care workers who work in a close

environment with patients. Patients with known coronavirus disease 2019 (COVID-19) undergoing endovascular intervention should don appropriate PPE (including N95 masks). A minimal number of health care workers who also have adequate training for doffing and donning of PPE should scrub into procedures. Vendor access inside the catheterization laboratory and use of PPE should be limited when necessary. Because access to rapid testing for COVID-19 is limited, all patients with fever and cough should be evaluated clinically and screened with portable chest radiographs, and elective procedures must be deferred until the source is identified.

After every procedure, interventional laboratories should undergo terminal cleaning using hot water, detergent, and 1% freshly prepared hypochlorite solution, and at least 1 hour of air exchange should be allowed between procedures. Patients with suspected or known COVID-19 should be treated at the end of the day, or a dedicated lab may be of value.

The authors have described very well what neuroradiologists should know during this global pandemic; we suggest practice guidelines for neurointerventional laboratories and what neuroradiologists should actively do to constrain the pandemic.

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<http://dx.doi.org/10.3174/ajnr.A6550>