Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Ventilation-Perfusion Scans During the Coronavirus Disease 2019 (COVID-19) Outbreak

We agree with Kooraki et al [1] that protection from the novel coronavirus disease 2019 (COVID-19) is essential for radiographers. Specifically, there is reference to the aerosol-generating procedure as defined by the World Health Organization [2] and the Centers for Disease Control and Prevention [3]. Nuclear medicine falls within this microcosm; in some radiology departments, it is encompassed, but in others, it is stand-alone. Regardless, within nuclear medicine, the most common—and only regular—aerosol-generating procedure is the ventilation-perfusion scans. This is vastly different from any other procedure in radiology. The current College recommendations need to account for ventilation-perfusion scans. In our department, we perform up to 30 such procedures per week. Should we approach this procedure for patients suspected of COVID-19 infection in the same way as for patients with influenza virus [4,5]?

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Re: Ventilation-Perfusion Scans During the Coronavirus Disease 2019 (COVID-19) Outbreak

In complete agreement with the authors, the potential effects of the coronavirus disease 2019 (COVID-19) pandemic on nuclear medicine departments need to be addressed, because the nuclear medicine department staff are at high risk of exposure to COVID-19. In addition, contamination of the department equipment can initiate an outbreak within the health care facility. The virus is highly contagious, with the main route of transmission being respiratory droplets [1]. Chest CT scan could be normal in up to 15% of individuals with positive reverse transcription polymerase chain reaction for COVID-19, and therefore a normal chest CT scan cannot exclude the disease [2]. There have been reports of COVID-19 nosocomial outbreak; extra measures will be necessary for aerosol-generating procedures such as ventilation-perfusion scan.

First, the performance of pulmonary scintigraphy in patients suspicious for having COVID-19 pneumonia should be limited unless medically essential for management. CT angiography might be considered as the modality of choice during the COVID-19 pandemic unless contraindicated (eg, in patients who are pregnant or experiencing acute renal failure). According to a statement by the Society of Nuclear Medicine and Molecular Imaging [3], because the ventilation systems are difficult to thoroughly disinfect, some institutions are avoiding the ventilation phase of the scan and have only relied on the perfusion phase results for the diagnosis of acute pulmonary embolism. When the result of the perfusion scan is normal (ie, there is no perfusion defect), pulmonary thromboembolism is ruled out.

Second, if the scan is essential, apart from encouraging all the individuals sitting in the waiting area to adhere to social distancing, patients suspicious for disease should be placed in a separate waiting room.

Third, the number of the personnel in the unit should be minimized when there is an individual suspected to have COVID-19 pneumonia [4]. All the personnel should follow the recommended personal protective equipment for COVID-19 pneumonia, which includes N95 respirator or higher, medical mask, apron, gown, gloves, and eye protection with goggles.

Fourth, creating a negative airway pressure in the procedure room relative to the hallway is desirable. Finally, the scanner, the procedure equipment, the procedure room surfaces, and the viewing station should be decontaminated by professional environmental services staff immediately after each patient encounter [5].

In summary, limiting the acquisition of pulmonary ventilation-perfusion scans, eliminating the ventilation phase of the scan, appropriately using personal protective equipment throughout the department, using negative airway pressure in the procedure room, and thoroughly decontaminating the procedure room after each ventilation-perfusion scan can help the nuclear medicine department to minimize the impact of the COVID-19 pandemic on the staff, the equipment, and the health care facility.

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Italian Radiology's Response to the COVID-19 Outbreak

We read with interest the excellent and useful article by Kooraki et al [1] published on February 19, 2020, and we would like to share with the authors the experience of Italian radiology during the coronavirus disease 2019 (COVID-19) outbreak.

As of April 2, 2020, the impact of the large number of affected patients requiring hospitalization has been devastating for radiology departments, especially in the northern Italian regions, the most affected by the epidemic. Italy has only three hospitals dedicated exclusively to infectious diseases, L. Sacco Hospital in Milan, the National Institute for Infectious Diseases – INMI Lazzaro Spallanzani in Rome, and Domenico Cotugno Hospital in Naples. As a result, in the first phase of the outbreak, we needed to redesign the organization of emergency radiology units in local hospitals to create dedicated tracks for the evaluation of individuals with suspected infection and for patients with known diagnoses. The first priority was separating those subjects who had or were suspected to have COVID-19 and other presumed noninfected patients admitted to the emergency department. Having entered the second phase with fewer individuals presenting to the emergency department and an increase in the number of hospitalized patients, the creation of dedicated and protected internal access paths to radiologic services was necessary.

In many hospitals, depending on the size and layout of the radiology unit, the availability of equipment, and throughput of patients, chest radiography (CXR), performed using portable imaging equipment, has been considered the first-line examination [2]. Ease of disinfection of the equipment and accessibility to bedridden patients were the main reasons for this choice, as suggested by the authors [1]. CXR can easily differentiate between a normal and severely abnormal chest, reducing the need for CT examinations, and it is also useful for monitoring inpatients, together with lung ultrasound, performed by an anesthesiologist. However, CXR sensitivity is low, particularly at an early stage of the disease [3].

Chest CT is the most accurate imaging modality in symptomatic patients at admission, to assess disease severity and guide patient management [4]. However, considering the high volume of patients with COVID-