

## PART 2 | WHAT DO YOU KNOW ABOUT?

### Precautionary measures in the Radiology Department during Covid-19 outbreak

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#### Abstract

COVID-19 global pandemic has emerged as an unprecedented health care crisis. The workers in radiology departments can take measures to limit the spread of the disease among themselves and the patients, provided that they equipped with the required infection control information and training. Radiology departments should have clear guidelines in place to handle COVID-19 proven and suspected cases to minimize transmission. In this article we aim to highlight measures which increase the preparedness of Radiology Department to prevent the spread of the virus through direct contact and through the use of equipment.

In the event of the major outbreak of COVID-19 infection, imaging will be critical in the assessment of disease severity, progression, and potentially screening initial diagnosis. Impact on radiology department could be substantial. The risk of cross-contamination of patients and staff require each department to have robust standard operating procedures and all employees are aware of and are performing recommended infection control protocols. COVID-19 viruses, mostly spread by large droplets which remain viable on the surfaces but will lose infectivity with disinfectant.<sup>1,2</sup> Infection control is an integrated and disciplined process that targeted many levels as below:

#### Regarding the equipment

Environmental services staff members need to be specifically trained for professional cleaning of potentially contaminated surfaces after each high-risk patient contact. Radiology departments should contact their equipment vendors to find the safest disinfectant for each piece of equipment in use.<sup>3,4</sup>

CT and MR machine gantries, noninvasive ultrasound probes, blood pressure cuffs, and image viewing station mice and keyboards need to be disinfected after every contact with suspected patients.<sup>3,5,6,7,8</sup>

#### Staff and visitors

All staff, patients, and visitors of the Radiology Department should be encouraged to practice proper hand hygiene, which includes careful hand washing with soap for at least 20 seconds or hand sanitizer that contains 75% alcohol. Surgical masks should be worn by staff, patients, and visitors depending on local availability. The points of entry into the institution and Radiology Department should be limited for effective screening of patients, visitors, and employees, although employees should be screened separately. History of travel, occupation, contact, and cluster can be obtained before the visit or at the entry point.<sup>5,6,7,8</sup>

#### Work arrangement

If home workstations are available, radiologists, particularly those with risk factors for poor outcome if affected by COVID-19, should be allowed to work remotely to reduce potential exposure.

For staff who work on site, cleaning of the workstation, keyboards, mice, and other fomites should be performed at the start and end of each shift, and sharing by different staff members should be minimized. Staff should avoid congregating during coffee or meal

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breaks.<sup>5,6,7,8</sup>

### Department activities

All in-person meetings in the Radiology Department and institution should be cancelled if possible. If a meeting is deemed necessary, limit the number of in-person participants to six, at most. Various web-based social media and teleconference platforms (eg, zoom an teams, etc.) can be used for education, consultation, interdisciplinary conferences, or general communication.<sup>5,6,7,8</sup>

### Dealing with Patients

Any imaging study or procedure to be performed on a suspected or confirmed case of COVID-19 must be flagged up early on the scheduling system. If possible, these cases are done close to the end of the day, to allow for airing of the room. Decontamination of the surfaces of the imaging room is then required, with appropriate solutions and cleaning materials as recommended.<sup>5,7</sup>

Staff instructions and correct use of personal protective equipment (PPE) are crucial component in the prevention of transmission of COVID-19 including face masks, a disposable isolation gown with fluid-resistant characteristics, a pair of disposable gloves, eye protection with goggles, and if possible, a face mask over goggles (visors).<sup>5,8</sup>

To reduce the patient movement, portable imaging units should be used wherever possible, the patient should wear a surgical mask during transport to and from the department.<sup>1,3</sup>

Where CT is performed, department may consider dedicated time slot. It is recommended that any imaging examinations have two radiographers in attendance using the 'one clean, one in contact with the patient' system to minimize cross-contamination.<sup>3,5,7</sup>

### The building/institution

The radiology departments in each hospital have been re-configured in their physical layouts in most of the countries and physically separated the imaging systems and rooms used for imaging of inpatients and outpatients.

Designation of separate facilities within the hospital is needed to prevent mixing of patients.

Re-organisation of manpower and segregation of the department into teams is important for the preservation of services and continuity of business in the event of infection or quarantine of radiology staff.<sup>5,7</sup>

### Conclusion

In the view of the fact that radiology department staff are often in the frontline when dealing with COVID-19 patients, it is mandatory to have clear infection control guidelines, as effective measures keep the disease contained and mitigated. With proper preparation, staff working in radiology department can handle the impact of the COVID-19 outbreak on the department and staff in a way that minimizes the infection. Implementation of an effective plan can significantly reduce further transmission of the virus to patients and staff members.

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