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Content

Pg. 1 - DEPARTMENT of RADIOLOGY
During COVID-19 Pandemic

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‘DEPARTMENT of RADIOLOGY During COVID-19 Pandemic’

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It is now more than 6 months since COVID-19 rattled the whole world. Globally there have been more than 20 million confirmed cases of COVID-19, with more than 700,000 mortality worldwide¹. Even though Malaysia has successfully flattened the epidemiological curve through a stringent lockdown and targeted testing, we are still battling the second wave of this infection following the uplifting of the movement control period, with more than 9000 total cases, 192 of which are active and some in intensive care unit².

Medical imaging remains an important auxiliary role during the pandemic. CT imaging has been considered as part of the diagnostic COVID-19 workup in the setting where laboratory testing for viral identification is not available or delayed³. In Malaysia, diagnostic confirmation is still by identification of viral RNA in a reverse transcriptase-polymerase chain reaction (RT-PCR), and CT imaging will only be used to look for complicated COVID-19 pneumonia cases. In a non-COVID center, our department remains essential not only in scanning suspected patients, but to continue providing care for other non-COVID cases. As such, radiology practices and activities have to significantly adapt to a new and safe imaging practice. 1



Figure 1: The Radiology Department, PPUiTM

Department's preparation in facing the pandemic.

The COVID-19 pandemic has changed how health care is delivered and has affected operations in healthcare facilities all over the world. In an attempt to make the department operate effectively and safely during this period, adjustments have been made accordingly.

The waiting area has been rearranged to make the available seats at least 6 feet apart to allow social distancing among patients. To minimise crowding in the waiting area, the gap between patients' appointment time has been increased. Visiting patients are required to fill in screening form or check-in using a QR code and have their temperature checked as they enter the department. All patients are encouraged to bring only one helper to assist them in the department and only if it is necessary. All cases are expedited to not make patients linger in the department as well as to allow space for other patients.

Physical distancing is not only practiced among patients but applicable to staff too. Frequent hand hygiene is widely practiced and those who are unwell are encouraged to stay at home. Also, limited number of individuals are allowed in certain work and common areas.

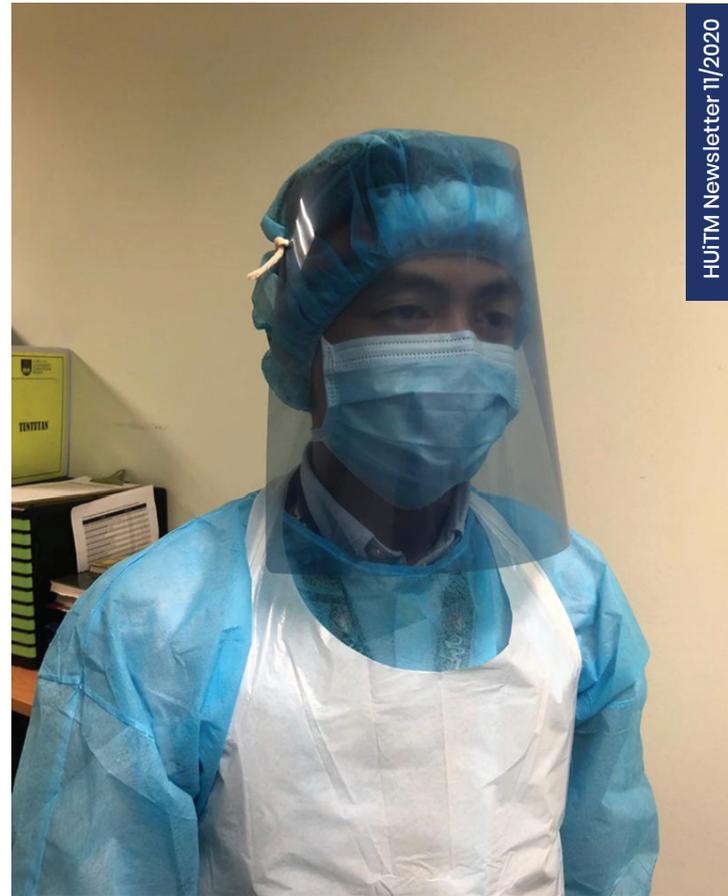


Figure 2 : Donning personal protective equipment before handling suspected cases

Donning and Doffing

As radiology remains an important and essential part of the investigation of a person under investigation (PUI) and sudden acute respiratory illness (SARI) cases, extreme care is practiced the entire time to avoid disease transmission by symptomatic and asymptomatic person. Staff must wear face masks at all times, put on Personal protective equipment when handling suspected or high-risk patients and a safe proper doffing is practiced afterwards. (Figure 2).

Our radiography and ultrasonography machines are cleaned before and after each procedure and draped with layers of protective coverings as these machines could be the potential source for transmission (Figure 3). To minimise transmission, mobile radiography and ultrasonography performed in the respective cubicle or room are the preferred mode of examination instead of mobilising suspected patients to our department (Figure 4).

Handling PUI/SARI cases within the department

Proper handling of PUI/SARI cases is crucial to minimise transmission to staff and also visiting patients. As our department also actively receives many non-COVID cases daily, there are risk of transmissions from PUI/SARI patient who come to our department for investigation. To lessen this risk to other visiting patient, mobile radiography and ultrasound are done in the patient's cubicle or room. This however is not applicable for all imaging modality, such as CT scan, in which the patient will need to come to the department for the investigation. A clear and safe standard operating procedure is planned for such a case.

The requesting doctor must notify the radiologist in-charge about the PUI or SARI patient. Once the case has been accepted and the appropriate time is determined for the examination to be carried out, the requesting doctor needs to alert the auxiliary police in-charge of the pathway for the patient from the ward or emergency department to the radiology department, as these pathway needs to be cleared during mobilisation of patient.

Radiologist in-charge will also notify the radiology staff in-charge to clear the pathway within the department. No other imaging investigations are to be done during this time until the CT scanner room, the preparation room and the pathway are cleaned and disinfected after the scan is completed (Figure 5).

All staff must abide by the precautions given on the necessary steps to limit COVID-19 transmission.



Figure 3: Imaging machines were draped before scanning suspected patient in their respective cubicle or room.



Figure 4: Scanning SARI patients in their respective cubicle



Figure 5: Scanning suspected patient in the department with full protective gear.

Active SARI Cases during pandemic

During the pandemic, an active SARI ward was initiated and opened for patients who presented with severe acute respiratory infections. Radiology department served to help screen suspected patients who presented to our Emergency Department. During the MCO period, we performed a total of 70 SARI patient scans. These patients were prioritised, and necessary precaution with proper donning and doffing was observed the whole time. As the preparation time for such cases was longer, and to not disrupt our routine cases, a dedicated SARI radiographer was allocated daily to handle all SARI patients while the other radiographers do their regular cases. Dedicated radiologists are also available round the clock to provide urgent reviews and image reporting for these patients so management of the patients can be expedited.

Weekly CMEs

Learning does not stop during the pandemic. In the pursuit of gaining knowledge in this unfavourable condition, our weekly continuing medical education (CME) meetings resumed via online video conferences. From topics related to COVID-19 to day-to-day radiology cases, we offer topics that are relevant for both lecturers and staff alike. These CMEs are open to other departments and hospitals, and we are glad that we received active participation from various departments which allows interdepartmental interactions and exchange of knowledge.

Radiology Department's contribution to the society

Apart from our routine radiology cases and PUI/SARI cases, our staff have gone above and beyond the call of duty, contributing to the hospital and society by making hundreds of face shields. This is our contribution in fighting against COVID-19. During the MCO period, we made 600 pieces of face shields which were then dedicated to the frontliners handling COVID-19 and PUI cases first hand (Figure 6, 7).

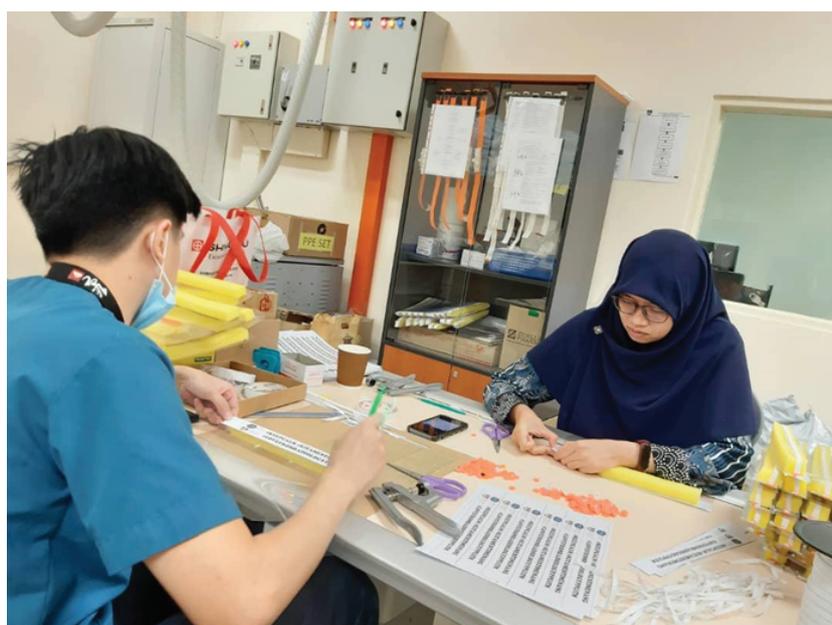


Figure 6: Staff making face shields as a support to frontliners handling COVID-19 cases.



Figure 7: Face shields contribution from Radiology Department's staff

Ramadhan under the MCO

It's a tradition for the Department of Radiology to organise activities during the holy month of Ramadhan. It was a different experience this year with the MCO in place, but it did not halt us from doing charitable act. This year, we managed to collect some funds, wrapped a nutritious food hamper and distributed them to staff as well as in-patients in HUiTM. It was a small but successful activity as we observed social distancing and necessary precaution the whole time.



COVID-19 pandemic is an unprecedented event, but the Department of Radiology, PPUiTM faced it with pride. We managed to maintain our regular services, perform scans on PUI or SARI cases and exercise different activities despite the unfavourable condition. We are still closely monitoring the COVID-19 trend and acknowledge that we are still far from being able to implement an exit strategy. However, we have done the necessary changes to ensure the safety of our patients as well as our staff. COVID-19 may change the way we work, but it never change us. If any, it changes us to become better.



Figure 8: Distribution of hampers to various departments during holy month of Ramadhan with safe social distancing.

References:

1. WHO Coronavirus Disease (COVID-19) Dashboard <https://COVID19.who.int/>
2. <http://COVID-19.moh.gov.my/>
3. Elie A. Akl et al, Use of Chest Imaging in the Diagnosis and Management of COVID-19: A WHO Rapid Advice Guide. Radiology, 30 Jul 2020.

