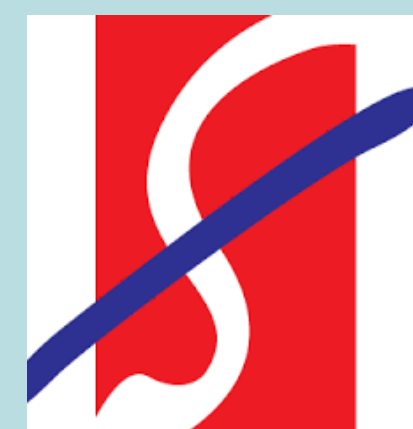


Drilled or be grilled?: Preparing And Mitigating A Fire Drill During The Covid 19 Pandemic

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INTRODUCTION

To conduct a fire drill in the hospital during the Covid-19 pandemic is to ensure awareness of fires as a threat and a type of hazard in the hospitals as well as to modify the evacuation pathways taking into account the presence of Covid positive and Severe Acute Respiratory Illness (SARI) patients within the hospitals. A fire drill was conducted in the emergency department of a single tertiary center hospital observing Standard Operating Procedure (SOP) as set by the Ministry of Health (MOH). Proper planning and education are important to impart resilience within the hospital community to face any hazards in the current working environment. New areas are developed in the emergency department separating suspected Covid patients, Covid positive patients and the low risk Covid patients. This development must be followed up with a proper fire evacuation plan to accommodate the changes. Education and planning of the Covid-19 person's evacuation process is an important mitigation plan and early recognition of evacuation pathway in the emergency department during the fire drill can prevent spread of covid-19 within the department and also provide a safe pathway for staff and patients to evacuate during a fire.

MATERIALS AND METHOD

Pre fire drill planning and preparation was done following the SOP that had been set by the government to host courses and programs during the movement control order (MCO). The planning and education stage involved multiple agencies from different departments within the hospital. This included RADICARE, safety and security, fire department, engineering, nurses, medical assistants, fire Marshal and the fire drill coordinators. Emphasis on wearing personal protective equipment (PPE), maintaining physical distancing, separation of covid and non-covid patients via distance and shield was enforced. Zones that were involved were respiratory and non-respiratory zones and evacuation plans for each zones were laid out and the referees and observers were given their tasks and check list to monitor during the drill.

A total of 6 patients were simulated :

- Patient 1 (resus respiratory) – Covid-19 positive, intubated, ventilated.
- Patient 2 (yellow respiratory) – SARI to rule out Covid-19 on nasal prong oxygen
- Patient 3,4,5 (MDSU) – ACS, breakthrough seizure, fracture femur
- Patient 6 (chair MDSU) – AGE with lethargy

**Each patient was tagged as simulated patient to avoid removing real patients*

Parameters that were monitored

- Time of setting up smoke
- Time of recognition of fire
- Time to activate fire alarm
- Time to inform Medical Emergency Coordinating Centre (MECC)
- Time to find the fire extinguisher
- Time to put out the fire
- Safe packaging of patients in each zone
- Time to exit the zones
- Safe transportation of patients to the evacuation site
- Covid-19 precautions –PPE/ physical distancing, separation of Covid-19/ SARI and non-SARI patients
- continuous treatment of patients at evacuation site until stand down

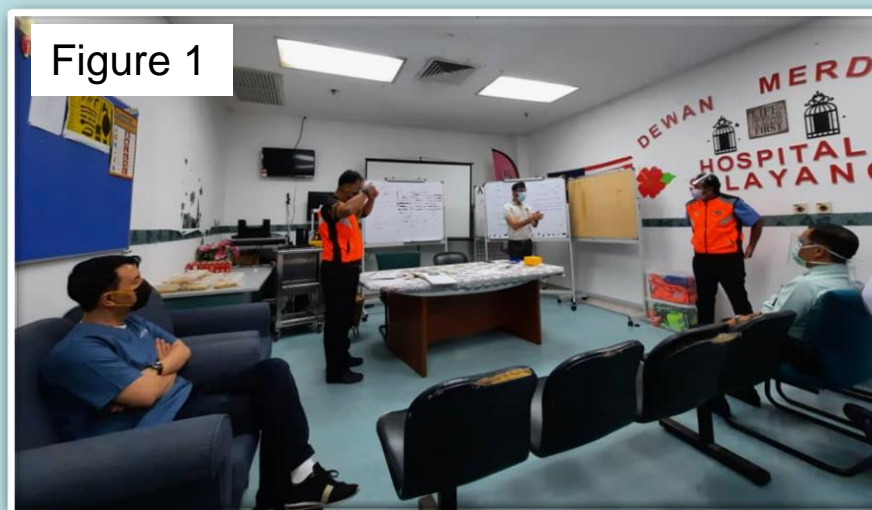


Figure 1



Figure 2

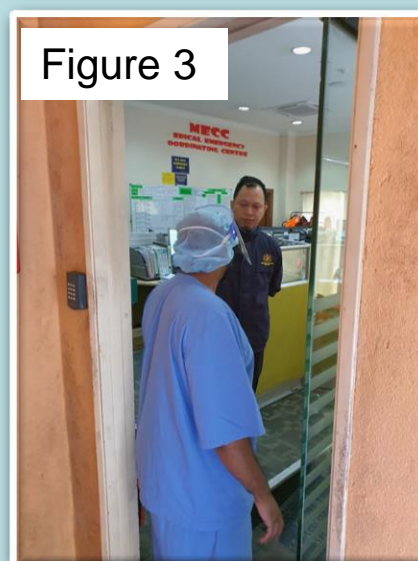


Figure 3



Figure 4



Figure 5



Figure 6



Figure 7

Figure 1 Education and planning phase
Figure 2 Activating the fire alarm system
Figure 3 Activating MECC
Figure 4 Locating and using the fire extinguisher
Figure 5/6 Patients' evacuation site
Figure 7 Fire extinguisher demonstration

RESULTS

Recognition of fire was fast because of awareness of fire as a hazard owing to yearly fire drills. Activation of fire alarm was smooth because they are placed in common areas throughout the emergency departments with good signage. MECC relays information of a fire to the hospital's fire department and communicates regularly by announcements to facilitate interloop communication. Well maintained fire extinguisher helps with fast action to put out fire to contain the damage and facilitate evacuation of patients. Isopod team activation ensures safe and timely packaging of intubated patients for prevention of covid spread during evacuation. Specialized evacuation routes for covid and non-covid patients is important to ensure that the patients do not use the same route which can cause cross infection of covid-19. Evacuation segregation areas are also important. Covid patients were evacuated to the covid tents in mass screening areas which has already been guarded with the personnel's working there already in full PPE whereas the non-covid patients were evacuated to the common fire escape site far from the covid tents to ensure social distancing is preserved and reduces the risk of transmission.

DISCUSSION

The fire drill was carried out in times of MCO thus only minimal personnel were allowed to take part with limited number of patients and staffs involved. In a larger scale, this drill could have yielded different results. No personnel who took part in this drill were infected with Covid-19.

CONCLUSION

The preparedness and mitigation of a fire is important and relevant even in times of Covid-19 pandemic. Awareness of fire as a hazard must present and new evacuation pathways separating the covid and non-covid patients is important to prevent its spread during evacuation without compromising care of the patients. Patient's transfer must be modified and rearranged to enhance safety of staff and patients not only from fire but from covid-19 transmission as well. Thus, an early implication of mitigation and preparedness to a fire during the pandemic times be encouraged to enhance situational awareness.

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