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## Strategy within limitations during COVID-19 pandemic in Indonesia: Shortage of PPE, prevention, and neurosurgery practice



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### EDITORIAL

Indonesia is one of the developing countries in Asia, which has a high number of confirmed COVID-19 cases. Indonesia's first COVID-19 patient was recorded on March 2, 2020, and until now, the number of confirmed patients is constantly growing since the transmission still occurring. On May 14, 2020, the number of Indonesia's positive case of COVID-19 reached 16,006 people, while the number of death touched 1,043 and 3,518 people have recovered.<sup>1</sup> Based on the number of patients who have passed away, many doctors and nurses have died combating coronavirus. The worst contracted areas are located in Java Island, where the first transmission occurred in Jakarta. This condition happens because Java Island has the main transit point for all domestic and international transportation lines, causing higher mobility of residents and tourists. The cities around Jakarta have been labeled as red zones, and residents are prohibited from leaving the city.

If we look back, there are a lot of countries in the world especially in Asia besides China that have been infected with COVID-19 months before Indonesia, but the slow initial response by the authorities in the early stage of the pandemic caused delays in COVID-19 outbreak control and prevention efforts that should have been done earlier. Countries like South Korea, Vietnam, Australia, Hong Kong, New Zealand, and Costa Rica have successfully handled and won the battle, and we should take notes from them. For example, South Korea has shown the world that it is possible to contain the coronavirus by dramatically slow the spread of the outbreak and flattened the curve. In late February and early March, the country had more than 900 positive cases of COVID-19 each day but less than a week later, the number of new positive cases halved, and

couple of days later halved again. This shows that South Korea's methods against coronavirus have worked effectively. South Korea's officials had swift action by opened hundreds of testing centers which helped on widespread testing, contact tracing, and isolation. The citizens also played a big role by giving critical support and a high level of awareness, which helps reduce the number of positive cases.<sup>2</sup>

As for Indonesia, the government team up with the Ministry of Health to improve health services during an emergency. Within the Ministry of Health, the Center of Health Crisis Management was established and coordinated to respond to all potential outbreaks, endemic, and pandemic in Indonesia. The Center of Health Crisis has experienced in dealing with outbreaks such as Avian Influenza, Swine Influenza, and Severe Acute Respiratory Syndrome (SARS) for the past few years. Based on that experience, the Indonesian government should have learned and experienced taking appropriate actions to handle COVID-19. But in fact, the government is still few steps behind in handling this case, which resulted in Indonesia predicted to be one of the longest-running countries to end the transmission of corona (based on analysis of Singapore University of Technology and Design).<sup>3</sup> That makes sense and possible considering Indonesia now leads Southeast Asia in confirmed coronavirus cases and has the highest COVID-19 mortality rate of 7,2% in Asia according to Johns Hopkins University and Medicine.<sup>4</sup>

To face this pandemic, the government provides 132 referral hospitals divided by the province. A total of 2,904 hospitals in Indonesia and 1,350 isolation rooms are available to gather the infected patients.<sup>5</sup> This number is not proportional and still not enough because Indonesia is an archipelago with 34 provinces and 267 million population. In this case, it is important to increase the

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number of hospitals, healthcare workers, and adequate Personal Protective Equipment (PPE) for maximum treatment and prevention efforts. We are assigned to the neurosurgical practice on one of the provincial hospitals located in East Nusa Tenggara. Our hospital is one of the major/main hospitals in Indonesia, not only providing the center of neurosurgery services but also in charge as the main referral hospital for handling COVID-19. Even though our hospital was one of the COVID-19 referral hospitals, lack of funds and distribution of PPE that should be provided and prepared by the hospital and the government even before the crisis arose makes it difficult for the medical workers to protect their selves from the high risk of transmission.

Although there are still many shortcomings, the good news is East Nusa Tenggara has one of the fewest positive cases in Indonesia. In this short communication, we would like to share our strategy and experience in general medical services, especially in neurosurgery services, despite the limitation during COVID-19.

### **HOSPITAL SCREENINGS**

Our hospital conducted screening protocols outside the emergency room and hospital entrances for patients, visitors, staff, and physicians. Screenings, including checking temperature and questions about travel history and medical history, are necessary. Besides screenings, patients and visitors are highly required to wear at least a cotton mask or surgical mask and scrub their hands with alcohol-based hand sanitizer provided by the hospital. Patients and visitors with a temperature above 37.5°C are not permitted to enter the hospital unless they are in a state of emergency which requires immediate care or in a condition that indicates the suspicion of contracting COVID-19. In such a case, the patients will be placed in the isolation room and be bound to undergo examinations. This method also applies to patients with infectious disease history (i.e., tuberculosis) since there are many patients with lung disease in Indonesia. We tried to give them more attention since they are more prone to contract.

### **PHYSICAL DISTANCING**

Following the guidelines from the World Health Organization (WHO) and authorities, we set a physical distance between every patient and physician for at least 1.5 meters to minimize the risk of infection. One meter tall glass dividers are installed on every table in doctor consulting rooms. Physical examination is only given to new patients

or when it is needed. We put bright colored masking tape to spacing each chair in the waiting room and always make sure to distance the queue line. Clerkship who were practicing in our hospital got a day off from their universities for uncertain times to cut down the physical contact. Physicians' meetings, learnings, and seminars are switched from physical meetings to online-based meetings.

### **PPE AND PERSONAL HYGIENE FOR MEDICAL WORKERS**

There is a shortage of medical equipment in Indonesia. It is really difficult for medical professionals to get adequate protection. This issue raised when the public was going through panic-buying and stockpiling medical-grade masks (N95 respirator, surgical masks), hand sanitizers, and gloves, which caused the price of medical equipment jumped drastically. Some medical workers are forced to reuse masks and gloves, and others don't even use any protection. Others are provided by their own families who bought masks with a high price point.

For infection prevention and control, the medical workers should wear adequate personal protective equipment consists of a hazmat suit, face protection or face shield, N95 respirators, goggles, head cover, gloves, and boots.<sup>6</sup> The preparation of PPE in our hospital is very deficient due to lack of funds and late distribution from the authorities due to our hospital location. We decided to replace and make our PPE with available materials. We replaced the hazmat suit with a disposable raincoat and "DIY" face shield from clear binding cover and elastic. This may not give us the best protection as the real hazmat suit, but this is enough to guard us against COVID-19 droplets. Every time we come to the hospital, we wear surgical scrub-covered with a raincoat and surely layered our surgical mask with a cotton mask, then we topped it off with face shield, goggles, and scrub cap. The medics always practice hand scrubbing right after touching things with bare hands and having physical contact with patients or other physicians. We throw away any disposable PPE like surgical masks and medical gloves in a distinctive container after using it. As for the reusable PPE like face shield, we wash and soak them for at least one hour in a detergent solution to sanitize them.

### **THE NEUROSURGICAL SERVICE**

There is a decreasing number of neurosurgical patients who came to our department, especially patients with traumatic brain injury (TBI). The specialist appointments were rescheduled and

reduced from 6 days a week to 2 days a week, and practice hours are limited to the minimum (2 hours). Following the appeal from the Indonesian Neurosurgical Society (INS), elective surgeries are postponed to prevent further COVID-19 transmission, and urgent cases are prioritized. Patients with elective cases are reviewed and will get medical check-ups at least once a month for further follow-up. Virtual online consultation and medicine delivery are provided for patients who have an internet connection. We divided the urgent cases into two groups: the first group consisted of patients with worst predict outcomes or patients who needed more than 3 hours to be operated on as well as long-term stay in the Intensive Care Unit (ICU). The second group consisted of prioritized patients with a higher survival rate who needed less than 3 hours to be operated on and a short stay in ICU. Unfortunately, surgeries are only performed for the second group, and this applies to all patients whether they are infected with COVID-19 or not. The limitation in the operating room is intended to reduce the exposure between physicians and patients. Medical personnel who entered the operating room are limited to 4 personnel consisting of one neurosurgeon, one anesthesiologist, and two surgical assistants.

## CONCLUSION

Prevention actions and awareness should be improved by everyone to cut down the quick transmittal and flat down the curve. We are very grateful that despite the obstacles we face every day, there are still no medical workers infected with coronavirus in our hospital. The world is still in a battle with this pandemic and our only hope is everyone stays safe and always remember we can go through this together.

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