The challenge of education and training in the COVID-19 National Emergency Hospital Wisma Atlet Kemayoran in Jakarta

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The challenge of education and training in the COVID-19 National Emergency Hospital Wisma Atlet Kemayoran in Jakarta

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ABSTRACT

Background

The Corona virus disease 2019 (COVID-19) pandemic poses a risk of inequality between the number of prepared service staff and patients. Emergency hospitals, that do not have full-time employees due to the voluntary employment system, need to supervise the competence and knowledge of their staff, as they came with diverse backgrounds of knowledge and skill. The National Emergency Hospital Wisma Atlet Kemayoran, which can provide services for nearly 6000 COVID-19 patients, is required to be able to provide education and training continuously to improve the knowledge of its volunteers aiming to improve the quality of the care services.

Methodology

The present study is descriptive observational research to explore the challenge of education and training in the COVID-19 National Emergency Hospital Wisma Atlet Kemayoran in Jakarta.

Results

The COVID-19 health workers need to be equipped with sufficient knowledge about personal protective equipment (PPE), COVID-19 management, triage, admission, emergency and critical care for the COVID-19 patients. Supervision is needed to ensure that volunteers with various knowledge and skill backgrounds can collaboratively provide good services for the COVID-19 patients at all fronts. With frequent personnel changes, education and training on the same topic are always given repeatedly. To overcome this inefficiency, the Education and Training Department can film every practical skill related to health care service, and then create tutorial videos followed by small groups onsite skill station, when necessary. The hospital received enormous support from the governmental and non-governmental organizations to conduct education and training sessions on regular basis.

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Conclusions
Education and training are very critical in the Emergency COVID-19 Hospital. The process has become a major challenge due to regular changes of staff. Information and communication technologies remain a more recommended alternative to the traditional onsite face-to-face method of education and training delivery as to prevent the spread of this virus. The training and education program in the National COVID-19 Emergency Hospital Wisma Atlet have received major supports from several Government agencies, and national private/non-government organizations. However, supports from International NGOs, international aid agencies, or humanitarian organizations, apart from the local professional organizations, which generally extend generous support need also to be explored.

Keywords: COVID-19, emergency hospital, education and training, volunteer, Indonesia.

INTRODUCTION

Coronavirus disease (COVID-19) has become a global health problem since December 2019,[1-4] and has particularly spread to Indonesia since the 2nd of March, 2020.[5-6] The number of tested positive patients which repeatedly reached the peak requires the preparedness of healthcare and non-healthcare workers to be able to provide excellent service under the surge capacity conditions.[6-9] The National COVID-19 Emergency Hospital Wisma Atlet Kamayoran / *Rumah Sakit Darurat COVID-19 Wisma Atlet Kemayoran* (RSDCWAK) in Jakarta has been operating since the 23rd of March, 2020. From treating asymptomatic COVID-19 patients and the COVID-19 patients with moderate symptoms, the hospital then shifted to manage the severe and critical COVID-19 patients due to inability to refer patients with critical condition to another hospital. The diversity of the background, number and competence of the volunteers working at the hospital has urged education and training. This report was made to provide an overview of the role of education and training for the volunteers serving in RSDCWAK in order to improve the quality of COVID-19 care services.

HOSPITAL

To be able to reduce the COVID-19 transmission, every country has to formulate a mitigation plan according to the conditions of the country. The most crucial control strategy is to provide a special isolation/quarantine area for people who tested positive for COVID-19 to reduce the risk of transmission.[6-10] Other components that should be prepared by the hospital are the availability of the isolation rooms, logistics, staff, and a management system.[8, 9, 11] Renovation of buildings/spaces, utilization of stadiums and sport grounds, or even construction of new buildings for isolation/quarantine areas and complete health services have been carried out by various countries.[12]

Indonesia, which officially confirmed the spread of COVID-19 in early March 2020,[6, 13] has been operating RSDCWAK by converting seven residential towers of Wisma Atlet Kemayoran that were previously used for the Asian Games athletes in 2018 into a quarantine area for the COVID-19 patients with mild to severe symptoms. Tower 1, 2 and 3 are used for management and staff residencies, while Tower 4, 5, 6, and 7 are operated for hospital care. In terms of capacity (Table 1), this hospital can manage 5994 patients who are able to perform self-care with independent activities in the isolation area, and for COVID-19 patients who require special supervision/therapy in emergency, intermediate, and high care/intensive care units (Box 1). As time went by, the hospital had experienced several peaks of total COVID-19 patients' (Figure 1).

Table 1. Data of the bed availability and occupancy at RSDCWAK on the 29th of March, 2021.

	TOWER 4	TOWER 5	TOWER 6	TOWER 7
Total of Beds	1546	1570	1300	1578
Number of patients	747	226	633	591
Remaining beds	799	1344	667	987
% of occupied beds	48.32%	14.39%	48.69%	37.45%
% of remaining beds	51.68%	85.61%	51.31%	62.55%

Box 1. Cumulative data of in-patient facilities at RSDCWAK on the 29th of March, 2021.

Bed Capacity
General Care 5,994
IMCU 84
HCU / ICU 24
Emergency Units 29
Number of hospitalized patients 2197
Hospitalization cumulative 58,014
Outpatient cumulative 1,342
Remaining beds 3797 (63.35%)
Percentage of occupancy 36.65%
Referred 631
Dead 72

Figure 1. Trend of the total number of in-patients at RSDCWAK from the 23rd of March 2020 to the 29th of March, 2021 (RSDCWAK occupancy).

Zoning is an effort to prevent the spread of COVID-19.[14, 15] In general, the hospital area is divided into three different categories of zones; namely red, yellow and green zone. The COVID-19 patients with a severe or moderate risk of infection are treated in the red zone areas.[8] This zone consists of the triage area and negative pressure isolation rooms. Meanwhile, the patients with mild-symptoms are treated in the yellow zone which consists of a consultation rooms, observation rooms, and nurse stations. All COVID-19 patients are prohibited from entering the green zone, which is a COVID-19 free area. The implementation of zoning to the unit level can prevent cross-infection and excessive spending on PPE.[16] RSDCWAK divided the hospital areas into three zones, namely the red zone for confirmed COVID-19 patients, the yellow zone or intermediate zone including the occupancy for health workers, and the green zone for operations that are not intended to provide services to the red zone (Image 1).

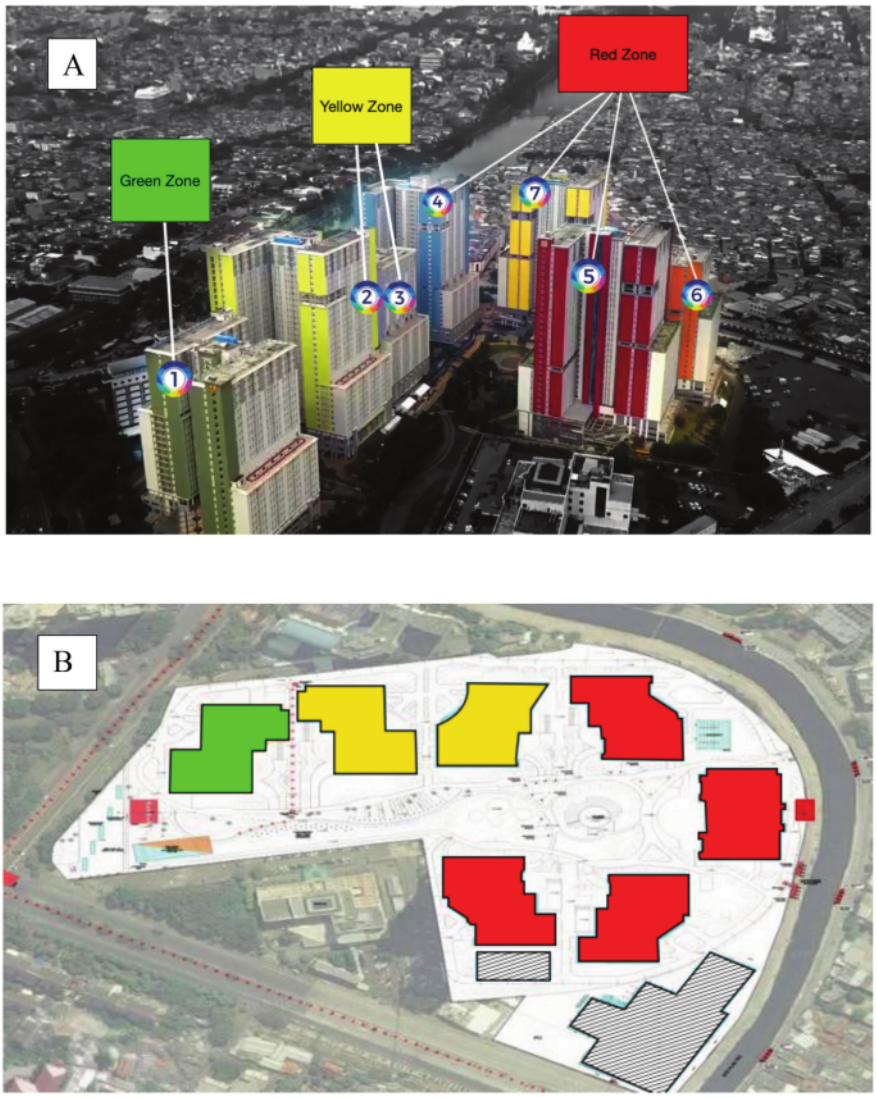

Image 1. RSDCWAK zoning. Panel A: Tower zoning; Panel B: Satellite view.

The COVID-19 care service facilities in the red zone are emergency services, intermediate care units, high care units, intensive care units, independent in-patient care, laboratory, radiology, pharmacy, and several other related units (Figure 2).

HUMAN RESOURCE MANAGEMENT

Because of its purpose as Emergency Hospital up to April 2021, RSDCWAK still did not have independent governance, especially in terms of funding sources. Hospital operational resources are supported by several elements from the Indonesian National Army, the Indonesian National Police, several Ministries (Ministry of Health, Ministry of Public Works and Housing, State-owned Public Agency), the National COVID-19 Task Force, and Civilians. On this basis, all staff on duty at RSDCWA are not permanent employees. Because of their nature as volunteers. The duration of voluntary contract

for all volunteers is 1 month followed by 2 weeks of quarantine. Thus, every month, the volunteers need to inform whether they are willing to continue their job (if needed), and also undergo performance evaluation by their direct supervisor to determine their eligibility to continue their work. Therefore, most of the volunteers working at RSDCWAK are personnel who have not been properly trained for COVID-19 care (especially health workers). Thus, there should be an introductory training, knowledge screening, and sustainable education and training.

The majority of the volunteers are fresh graduates with different occupations (Box 2), which makes it important to conduct an introductory training to promptly teach the services, rules that must be adhered to regarding the work unit, and the steps to control and prevent the spread of COVID-19 infection. Screening of their qualification must also be conducted quickly due to the intensive need for the new staff regularly, so that the credential process, which is normally conducted in general hospitals, cannot be carried out. The knowledge screening is carried out on the basis of the pre-test and post-test as well as data collection of work history, and additional training and education that had been attended. Such screening data provide the basis for the assigning the right job to the volunteers.

Box 2. Lists of Volunteer's Occupations at RSDCWAK

- Central managements
- Administrations
- Professional coordinators
  - Medical
  - Nursing
- General Practitioners
- Medical Specialists
  - Internist
  - Cardiologist
  - Pulmonologist
  - Radiologist
- Midwife
- Nutritionist
- Pharmacist
- Pharmacist assistant
- Laboratory analyst
- Dentist
- Radiology Staff
- Electromedical
- Environmental Health
  - Anesthetist
  - Pediatrician
  - Clinical Pathologist
  - Forensic
  - ENT
  - Psychiatrist
  - Gynecologist
  - Clinical Pharmacologist
  - Clinical Nutritionist
- Dentist
- General Nurse
- Hospital Health and Safety
- Medical record
- Surveillance
- Physiotherapy
- Clinical psychologist
- Ambulance driver
- Information and technology
- Priest

METHODOLOGY

This study is a descriptive observational study aiming to explore the challenges of education and training in the COVID-19 National Emergency Hospital of Wisma Atlet Kemayoran, Jakarta, Indonesia from the early stage of its operation until the 29th of March, 2021.

ANALYSIS

In principle, the basic knowledge that volunteers should have includes PPE and zoning. Furthermore, they need to have sufficient knowledge on COVID-19 services, triage, admission, emergency management, and management of critical COVID-19 patients (Box 3). Therefore, it is important to train them on how to implement the guidelines on delivering Covid-19 care services. Beside training, supervision of the coordinators of each service unit they become one of the most essential parts to maintain the quality of services delivered by the volunteers. Supervision is needed to ensure that volunteers with different backgrounds of knowledge can provide excellent services for the COVID-19 patients at all fronts. In case the volunteer needs more knowledge, the coordinator then shall send him/her to the education and training unit to improve their knowledge and skills. Education and training programs need to run continuously as the large number of volunteers changes regularly and they have to deliver excellent services for COVID-19 patients from the emergency room, outpatient

care, to critical patients. Thus, the volunteers will have knowledge and skills to provide good service in the area of their assignment (Figure 2).

Box 3. Knowledge that the RSDCWAK volunteers should have. [10, 17]

Hospital health & safety, and environmental health
Infection control and Health Protocol Enforcement
Emergency and critically ill flow and services
COVID-19 Surveillance
Patients' rights and obligations
Use of personal protective equipment (PPE)
Assignment Flow
Information Systems and Data Integration
Basic cardiac life support
Advanced cardiac life support
Resuscitation
Clinical COVID-19 guidance
Use of medical devices
Medical scenarios
Medical Investigations

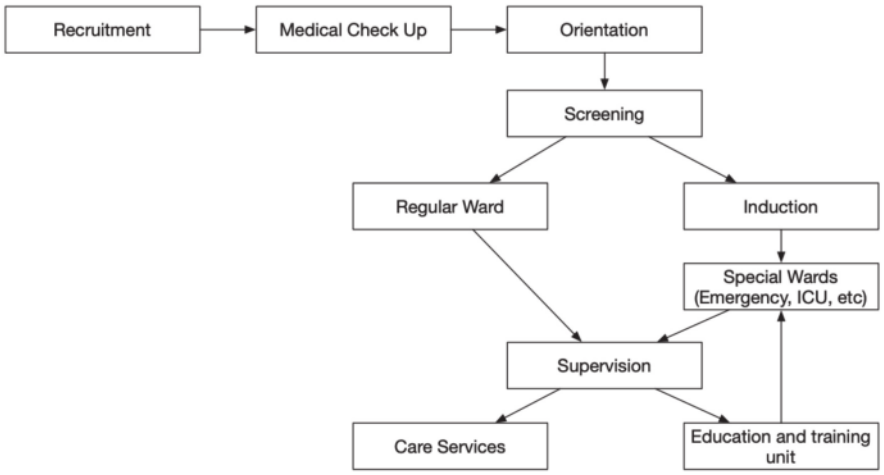

Figure 2. The flowchart of volunteer acceptance and the pathway of the involvement of the education and training unit.

A lack of well-trained medical personnel is a major challenge in various countries during the COVID-19 pandemic.[18] The concept of volunteering provides enormous potential for less experienced and trained health workers who deliver the COVID-19 support services to learn in special units.[19] One of the reasons for the implementation of voluntary work, is that experienced health workers generally have secured job positions, and thus to sign up as volunteers, they have to quit their job.[19] The COVID-19 service area that requires special knowledge and skills include Emergency Hospitals, especially for emergency and critically ill units, and the areas that require other special techniques (renal and extra corporeal therapy, bronchoscopy, etc.).

EDUCATION AND TRAINING UNIT

The presence of education and training unit is extremely urgent in disaster management which requires a huge manpower.[20, 21] The role of this special team is to provide additional or refreshment skills and knowledge for each staff to have the same minimum level of knowledge (Box 3). RSDCWAK, which face frequently changing staff due to the concept of volunteer, has a great responsibility to

provide education and training for their new voluntary staff. Furthermore, as an emergency hospital, RSDCWAK cannot carry out budget management independently including budgets for education and training activities. Therefore, the department of education and training must actively collaborate with various elements such as Ministries, Professional Organizations, Universities and Education Centers, private institutions, charity foundations, and individuals who are willing to provide education and training in the form of donations (Box 4). This unit is expected not only to increase knowledge and skills to health workers, but also to non-health workers (hospitality and administration staffs). It is undeniable that the support from some of these elements is significant as experts, both individually and collectively, are eager to provide professional workshops to the volunteers who have struggled to provide services to the COVID-19 patients.

Box 4. List of RSDCWAK's Education and Training unit collaborations

Ministry of Health
- Directorate of Health Services
- Board of Development and Empowerment Human Resources of Health
- Directorate of Public Health

Ministry of Manpower
- Office of Occupational Health and Safety

Professional Organizations
- Indonesian Doctors Association
- Indonesian Association of Lung Doctors
- Association of Anesthesiology Specialists and Intensive Therapy
- Indonesian Pediatric Association
- Indonesian Nursing Association
- Indonesian Critical Care Nurses Association
- The Indonesian Hospital Pharmacists Association
- The Indonesian Heart Association

Academic
- Faculty of Medicine, Public Health and Nursing, Gadjah Mada University
- Faculty of Medicine, Tarumanagara University
- Esa Unggul University

Institution
- Hospital Accreditation Committee
- Gadar Medik Indonesia
- Ambulance 118

Foundation
- Yayasan Cinta Kasih Indonesia
- Lotus Indonesia

The education and training unit at RSDCWAK is managed by many volunteers who are very active and care about education and training for others. The large number of members who join this committee makes this unit capable of forming several divisions that support education and training services (Table 2). The types of activities carried out by the RSDCWAK education and training unit are divided into three programs; namely long-term programs, medium-term programs, and short-term programs.

Table 2. Responsibilities Organization of the RSDCWAK's Education and Training unit division.

Position	Responsibility
Coordinator and deputy	Coordinating, facilitating, and controlling the entire education and training process carried out at RSDCWAK
Administration	Administrative and secretarial governance
Human Resources	Recruitment of unit members and trainers
Continuing Professional Development	Governance of Education and training activities
Logistics	Prepare all the needs of the unit
Public relations	Promoting the unit and every activity carried out
Multimedia and Creatives	Developing media (digital imaging and educational videos) to strengthen the education and training process

The long-term program is carried out by inviting senior volunteers who have comprehended the services at RSDCWAK and are willing to share their knowledge with other volunteers as trainers. The training at RSDCWAK is divided into 3 levels: technical training to give knowledge about how to set and decompose medical devices including trouble shooting and the flow of services and electronic medical records; preceptors who are technical trainers capable of providing the application to the patients; and supervisors who are able to understand the relationship between clinical workflow and management with or without medical devices.

The medium-term program is training and workshops which take place from a few days to a week. The activities can be done online, onsite, or hybrid (a combination of both). Whenever activities are conducted onsite, the health protocol must be implemented very strictly, including wearing a facemask during activities, maintaining physical distance, and diagnostic testing for COVID-19 before and after the activities have taken place (Image 2). Some of the activities that have been done are listed in the Box 5.

Box 5. List of Education and Training that have been carried out at RSDCWAK

Basic life support for non-professional
Basic trauma and cardiac life support for healthcare workers
Advanced cardiac life support
Service quality
Hospital accreditation
Pharmaceutical series
Industrial Occupational Hygiene
Hospital health and safety
Basic ICU for general practitioners and nurses
Emergency COVID-19
Basic infection prevention and control
Infection Prevention Control Nurse
Infection Prevention Control Doctor
Electrocardiography
Ultrasound Guided COVID-19 management
Pediatric Critical Care Management in COVID-19
Hospital accreditations
Basic and Advanced research
Research methodology
Quantitative and qualitative research
Electronic Medical Record
High Flow Nasal Cannula
Basic Mechanical Ventilation
Non-Invasive Mechanical Ventilator
Airway Management in COVID-19

Short-term programs include webinars or short lectures that can be tailored into certain topics and delivered by a group of the same scientific/professional division, or a combination of several groups of different scientific divisions. This lecture program is generally conducted online, unless it involves a technical process that requires participants to observe and try the knowledge being taught. In this case, the health protocol must still be implemented. In its development, from November 2020 to March 2021, the RSDCWAK Education and Training unit has been able to train more than 2000 health and non-health volunteers.

Image 2. Documentation of the RSDCWAK education and training activities. *Panel 1*: Online education; *Panel 2*: Bedside teaching; *Panel 3*: Onsite technical workshop; *Panel 4*: Basic / Advanced Cardiac Life Support for Health Workers; *Panel 5*: Group discussions; *Panel 6*: Classroom method (with approval from the representative managers).

With frequent volunteer changes, training on the same topic shall be repeated to different personnel. To overcome this inefficiency, the Education and training unit uses information technologies by recording every activity related to the learning topics, and then create educational videos. Therefore, the training process does not need to be performed repeatedly, new volunteers can play back the existing video recording and then they are given a pre-test and post-test to ensure knowledge improvement.

DISCUSSIONS

Our report indicates that education and training are essential in the management of COVID-19 patients, especially in Emergency Hospitals. The primary reason is that the staff working at the hospital are volunteers with diverse backgrounds, and most of them are fresh graduates or do not have sufficient experience, especially for the management of COVID-19 patients under special conditions with many risky actions in the isolation area. The method of strengthening knowledge in the pandemic era must shift from traditional classroom with too many students to the online method, and in case practical experiences are required, the activities must be carried out with limited number of people and by implementing strict health protocols. The concept of volunteering requires proper education and training due to frequent staff changes.

Management of COVID-19 patients requires special attention, especially regarding its effect on health workers due to the contagious nature of the virus.[22] Therefore, it is necessary to enrich the knowledge of the care service staff in order to provide good and safe services.[23] The COVID-19 pandemic has caused dramatic changes in all aspects,[24] including the teaching and learning process that should move from classroom with a large number of students simultaneously, to the online methods.[25] If it has to be performed using the onsite method, the organizer should limit the number of attendants and ensure the implementation of extremely strict health protocols.[26]

Information technologies have become the best method in the process of knowledge transfer and skill enhancement for the medical personnel in COVID-19 governance. For this reason, the supervisors and students must be able to get the most out of information technologies that supports the education and training process, including improving the quality of the devices so that the knowledge transfer process can run seamlessly.[27,28]

Knowledge enhancement using such methods remains a challenge for educators to be able to find proper learning types to maximize the learning process, maintain the effectiveness of the delivery of

care to the patients, and ensure that students achieve the expected competencies.[26] Therefore, educators should focus on the quality of the delivery communication, innovation of the sharing process, collaboration with various parties to be able to help the learning process, increase flexibility, and proper preparedness of lesson plans and activities.[23,29]

In the pandemic era, the most important aspect to pay attention for is to keep the learning process safe from the risk of COVID-19 transmission. It is also necessary to determine the most urgent and crucial learning topics to be delivered to the students, so that the learning process can be effective.[23] If necessary, staff supervision process can be carried out, so that the training organized can be tailored to the needs of each individual.[23]

CONCLUSION

Education and training are very critical to be carried out to cope with the COVID-19 pandemic, especially for Emergency Hospitals with volunteer from diverse educational backgrounds and experiences. The process has become a great challenge as volunteers are constantly changing. Information technologies remain a recommended method of delivery in implementing education and training to prevent viral transmission. RSDCWAK has become the largest COVID-19 service unit capable of providing a very large number of training programs in Indonesia. Education and training programs in this hospital have received major support from several governmental agencies, and private/non-governmental organizations, nationally. However, it is also important to explore international support of International Non-governmental organizations, international aid agencies or humanitarian organizations, apart from the local professional organizations, which generally extend generous support.

Conflict of Interest: All authors declare no conflict of interest.

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