

Hospital Preparedness for COVID-19 in Indonesia: A Case Study in Three Types Hospital

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Abstract

Background: The increase in COVID-19 cases demands hospital preparedness in handling COVID-19 to provide quality services by prioritizing patient safety and health personnel factors. The purpose of this study is to analyze hospital preparedness in providing COVID-19 services comprehensively.

Method: The study is a cross-sectional design. The research objects are public, private, and police hospitals. The review uses the checklist from the CDC. Observation and interviews with hospital leaders carried out data collection. Data were analyzed descriptively.

Result: From the results of filling out the inventory, the preparedness of public, private, and police hospitals in Banjarmasin was low on average. In detail, it showed average scores that public hospital (2.83), private hospital (2.70), and Police hospital (2.63). Police hospital is better prepared than the private and public hospital. Public and private hospitals have the lowest scores on the written COVID-19 Development of written COVID-19 Plan component. Meanwhile, the Police hospital had the lowest scores on consumable and durable medical equipment and supplies.

Conclusion: It concluded the private, public, and police hospitals have a low level of preparedness for COVID-19 services.

Keywords: hospital preparedness, COVID-19, hospital, pandemic disaster management

Introduction

SARS-CoV-2 has implications for the largest coronavirus outbreak on record to date. Initially, most of the cases of Coronavirus Disease 2019 (COVID 19) in China, but the virus has spread to more than 184 countries worldwide¹. COVID-19 has been designated as a particular emerging infectious disease that causes outbreaks and causes a public health emergency². WHO has designated this outbreak as a Public Health emergency. Besides, WHO has declared COVID-19

a pandemic. Indonesia is one of the countries affected by this outbreak among hundreds of other countries in the world^{3,4}. The Indonesian government, on March 31, 2020, has designated COVID-19 as a Public Health Emergency through Presidential Decree Number 11 of 2020, and this was followed by Presidential Decree Number 12 of 2020 concerning Determination of Non-Natural Disasters for the Spread of COVID-19 as a national disaster on April 13, 2020⁵. The risk of death due to non-natural disasters is 1.5 times higher than natural disasters⁶.

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Incident COVID-19 in Indonesia, according to the official website of the Indonesian COVID-19 Task Force (www.covid19.go.id), from day to day, it is increasing, and now it has entered the ninth month. Update as of

December 2, 2020, from distribution data COVID-19 in Indonesia. The patient is positive and reached 549,508 people, and the patient has declared healed 458,880 people and died from 17,199 people. Epidemics/pandemics cause enormous losses, both in the health and social and economic fields. The existence of an epidemic/pandemic can threaten humanity's health and safety if not treated immediately. Another effect, this condition, also impacts social and economic aspects, which can cause colossal losses⁷.

The government has defined 835 hospitals as referrals for handling COVID-19 with details of the national referral hospitals designated by the Ministry of Health and 703 Provincial/Regency/City referral hospitals defined by the Governor⁵. Every hospital must be ready for emergency response. The hospital design must be considered to handle disaster patients, and disaster planning must be included in the hospital's service system. Hospitals need to form a disaster-related information network, conduct simulations, and monitor disasters' effects on patients handled by the hospital^{8,9}.

Based on the response to the COVID-19 pandemic that is currently happening globally, the Centers for Disease Control and Prevention (CDC) has issued a guide in the form of a checklist that can be used to determine hospital preparedness in the face of the COVID-19 pandemic. The guidance including handling patients who are positively infected with COVID-19¹⁰.

During a limited meeting, the news channel CNN Indonesia reported that President Joko Widodo ordered priority handling of the COVID-19 in eight provinces where the number of cases is still high. The president said these eight provinces contributed 74% of the total positive cases of COVID-19 in Indonesia. One of them is South Kalimantan Province¹¹. The purpose of this study was to identify the preparedness of private, police, and public hospital in Banjarmasin, South Kalimantan, to more comprehensively for the COVID-19 pandemic by using the COVID-19.

Materials and Methods

Design study with a cross-section approach. The study collects data using a questionnaire. The questionnaire was taken from the CDC to measure

hospital preparedness¹⁰. The hospital preparedness consists of:

- 1) Structure of Planning and Decision-Making,
- 2) Development of a written COVID-19 Plan,
- 3) Elements of a COVID-19 Plan in general,
- 4) Elements of a COVID-19 Communication Facility,
- 5) Consumable and durable medical equipment and supplies,
- 6) Identification and management of ill patients,
- 7) Visitors access and movement within the facility,
- 8) Occupational health,
- 9) Education and training,
- 10) Healthcare service/surge capacity.

The study was carried out in three types of hospitals. The three hospitals are 1 public hospital, 1 private hospital, and 1 police hospital. The source of information for each hospital is the Director.

As for the criteria regarding the preparedness of three hospitals Banjarmasin, South Kalimantan for Pandemic COVID-19, by using Comprehensive Hospital Preparedness Checklist for Coronavirus Disease 2019 (COVID-19), and will give values 1 to 4, with the following criteria:

- 1 = There are documents, and it is implemented
- 2 = There are documents and not implemented
- 3 = No records and implemented
- 4 = No documents and not implemented

Each indicator's scoring criteria are determined based on "the highest score minus the lowest score, divided by the indicator range". The scoring criteria consist of:

- <1.75 : High
- 1.75-2.49 : Middle
- 2.50-3.24 : Low
- > 3.24 : Very Low

Data analysis used a descriptive method, which describes the average results of measuring the variables or the main components of hospital preparedness for handling COVID-19 according to the assessment criteria.

Results and Discussion

The hospital preparedness measurement studied was an equivalent hospital, namely a class C hospital located in Banjarmasin, South Kalimantan province, and outpatient services for COVID-19 patients. The private hospital's bed capacity has 151 beds, while for Police hospital and the public hospital has 100 beds.

The police and public hospital are referral hospitals for handling COVID-19 determined by the Governor of South Kalimantan, while the private hospital is not COVID-19 referral hospitals in South Kalimantan.

The private hospital was established in 1970. Meanwhile, the police hospital was established in 1994.

Besides, the public hospital has been established since 2018. In terms of the number of beds, the Isolation Room for COVID-19 Patients in private hospitals has 30 beds, the police hospital has 46 beds, and the public hospital with 40 beds.

Based on Table 1, the second variable's measurement results are the component of the Development of a written COVID-19 Plan for Public hospital has a score of 3.67. Most of them do not have written planning documents covering COVID-19 preparedness plans, facility planning, and critical personnel implementation. The situation could be because the Public hospital was established two years. Planning for a community outbreak of COVID-19 is crucial for maintaining healthcare services during a response¹⁰. To quickly deal with COVID-19, disaster management planning is needed; this planning is expected to reduce the disease transmission and mortality rate¹².

During a pandemic disaster, public facilities, especially hospitals, have an essential role in providing health services. Given the importance of an efficient response to emergencies and the need for a functional health care infrastructure in the aftermath of a disaster, hospital administrators must consider all aspects of the hospital vulnerability¹³.

Table 1. Description of private, police, and public hospital in Banjarmasin in 2020

No.	Hospital Profile	Private Hospital	Police Hospital	Public Hospital
1.	Hospital Class	C	C	C
2.	Accreditation Status	Plenary	Plenary	Intermediate
3.	Number of Beds	151	100	100
4.	Number of Special Isolation Room Beds	30	46	40
5.	Number of Doctors (General Practitioners and Specialists)	87	53	46
6.	Number of nurses	123	95	113
7.	The number of other health workers	65	56	41
8.	Number of Volunteers	0	0	22
9.	Ownership	Foundation	Police	City government
10.	Established in	1970	1994	2018
11.	Referral Hospital for Handling COVID-19	Not	Yes	Yes

Based on Table 1, the results show the average score of the fifth variable. Consumables and durable medical equipment supplies for public hospitals the average score is 3.50. This result is low because the Public Hospital is still the regional integrated service unit of the Banjarmasin City Health Service, so the planning for the supply of medical supplies is still not optimal. Based on the Director-General of Health Services' appeal in 2020, the hospital provides services to COVID-19 patients. It completes all the completeness of handling COVID-19 cases and Personal Protective Equipment (PPE) for all health workers according to their respective criteria for each service room/service risk. Previous research has suggested that to prevent the spread of COVID-19 from infected patients, one of which is the use of personal protective equipment¹⁴. Disaster management plans should have guidelines/protocols in providing stocks of both health workers, health materials, and medical supplies needed in a pandemic, for example, providing a large number of personal protective equipment before a pandemic disaster occurs¹⁵.

The next measurement results show the next variable's average score is the identification and management of ill patients, and the three hospitals have the same score of 2.50. CDC states that the hospital has a location setting regulation to separate the triage of COVID-19 and non-COVID-19 suspects, establish face-to-face triage alternatives, and establish criteria for accepting critical care process for referral of COVID-19 patients. The measurement results show that the next variable's average score is visitor access and movement within the facility. The three hospitals have the same score (2.50)¹⁰. Hospitals must have a plan for visitor access and conditioning, have visitor restriction criteria and protocols, establish processes to allow long-distance communication between patients and visitors when implementing visitor restrictions.

For occupational health variables, the three hospitals have the same score (2.87). The hospital must plan to monitor and set work limits for health workers, have a respiratory protection program, and have a PPE compliance audit process for COVID 19 preparedness. The conditions because health workers have a high risk of acquiring infections while carrying out treatment for patients exposed to COVID-19¹⁶.

The three hospitals' education and training variables have the same score (2.83). This score is in a low category. All hospitals must ensure that their staff is trained, equipped with medical equipment/PPE, and have comprehensive capabilities in handling COVID-19 in health facilities¹⁰. To prevent potential exposure to contaminated patients who come to the hospital and limit the spread of contamination, 95% of hospital staff in the front-line services should receive training regarding contaminated patients and emergency response measures included in hazardous materials management planning. Refresher training should be conducted annually¹⁷.

The last variable is the surge capacity, and the three hospitals have the same score of 3.00. The surge capacity is an organization's ability to respond to the demand for increased health services¹⁸. Hospitals must have a program to anticipate capacity increases. The program includes strategies to maintain the hospital's core mission, continue to care for patients with chronic diseases, increase bed capacity, and maximize staff numbers. Besides, emergency room strategies accommodate additional patients, logistical support, telemedicine services, staffing contingency plans, and cross-sectoral coordination with local governments¹⁰. The measurement of preparedness components/variables for private, police, and public hospital for COVID-19 can be seen in Table 2.

Table 2. Results of measurement of preparedness components/variables for private, police, and public hospital in Banjarmasin for COVID-19 in 2020

Variable	Private Hospital	Police Hospital	Public Hospital
Structure for Planning and Decision Making	3.00	2.14	2.71
Development of written the COVID-19 Plan	3.33	2.83	3.67
Elements of the Covid Plan 19 general	1.85	2.71	3.0
Facilities Communication	1.85	1.85	2.14
Consumable & durable medical equipment and supplies	3.17	3.00	3.50
Identification and management of sick patients	2.50	2.50	2.50
Visitors Access and movement within the facility	2.60	2.60	2.60
Occupational Health	2.87	2.87	2.87
Education and training	2.83	2.83	2.83
Health services / surge capacity	3.00	3.00	3.00
Average	2.70	2.63	2.88

Health service facilities' availability for handling COVID-19 must be accompanied by providing good service quality, prioritizing patients' safety, and occupational health¹⁹. The readiness of health service facilities, especially hospitals, in handling COVID-19 by maintaining the quality of health services is the right way to overcome the COVID-19 pandemic⁵. The average preparedness of private, police, and public hospital is in a low category. This study's results align with previous research that found that most Nepal hospitals are down and unprepared for COVID-19³.

Conclusions

The results of measuring hospital preparedness

for the COVID-19 pandemic at private, police, and public hospital located in Banjarmasin are still low level of readiness. Regarding the hospitals' limitations, it is possible to input several parties concerned for further comprehensive improvement efforts, both by the hospital and related stakeholders.

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Ethical Clearance: This study has passed the Ethics Committee's testat Universitas Airlangga Surabaya, Indonesia. The respondents' identities have all been deleted from the dataset. Respondents have provided written approval for their involvement in the study.

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