

The Experience of Health Services in Handling Covid-19 Pandemic in Nine Provinces of Indonesia

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Abstract

Background: Indonesia's experience in handling the Covid-19 pandemic is essential to prepare for future pandemic.

Aim: This research aims to know the experience of health services in handling Covid-19 pandemic in nine provinces of Indonesia.

Methods: This research used qualitative and case study approach, with a total of 94 informants coming from all levels of health service agencies from nine provinces in Indonesia. The data collection process was carried out by in-depth interviews, and data analysis were done by means of triangulation of sources between informants.

Results: Each province has a variety of local policies with the addition of varying amounts of the budget for handling Covid-19. In addition, the workload of health workers increased after the pandemic, and the availability of facilities, medicines, and single-usage medical materials were deemed inadequate in dealing with the Covid-19 pandemic.

Discussions: Accounting for the use of funds for handling Covid-19 as well as increasing surveillance capacity needed to prepare for future pandemic in Indonesia.

Keywords: Covid-19, Single-usage medical materials, Pandemic, Indonesia

Introduction

Since declared on March 11 2020 by WHO that it is a pandemic, COVID-19 has spread rapidly across Indonesia¹. If on March 11 2020 34 cases were recorded in several province, on June 2nd 2020, the

total Covid-19 patients leaped to 27.549 people in all provinces in Indonesia². Moreover, Indonesia is an archipelagic country which consists of 33 provinces that adopts a decentralized system. Furthermore, it is possible that each province has its own obstacles and solutions in handling the Covid-19 pandemic³.

Compared with China and South Korea, they were able to handle the spread of Covid-19 quickly, which reached the peak of daily case within 2-3 weeks. Indonesia, however, experienced a sloping growth in cases⁴. Learning from various cases from other countries, it seems that the decline in the Covid-19

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cases has been slow, thus the end of the epidemic in Indonesia is hard to predict⁵. There are, however, other determinants of factors, especially public's discipline in obeying the government policies and high proportion of elderly people associated with comorbidities⁶.

In Indonesia, pandemic control is carried out by means of large-scale social engineering, which affects economic activity. The experience of the Indonesian health system in handling the Covid-19 pandemic is very much needed to prepare for any future pandemic for Indonesia and other developing countries⁷. Furthermore, the capacity of each province is different in terms of the level of economic progress and health. Therefore, the objective of this research is to assess the **experience of Covid-19 pandemic management handling in nine provinces in Indonesia**. Thus, it is hoped that the experience of handling Covid-19 can be seen from various provinces with good and inadequate fiscal capacity in Indonesia.

Methods

This research is a qualitative research with a case study approach. Research informants came from nine provinces in Indonesia, namely Sumatera Utara, DKI Jakarta, Banten, Yogyakarta, Jawa Tengah, Kalimantan Selatan, Sulawesi Selatan, dan Papua. These provinces are selected based on high and low fiscal capacity in Indonesia. This study had a total of 94 informants (IF1-IF94) from nine provinces in Indonesia. The informants came from the Provincial Health Office, District/City Health Offices, Public Health Centers, and Government Hospitals as well as Private Hospitals. These agencies represent all levels of basic and referral health services in Indonesia.

The aspects seen in the handling of Covid-19 in the nine provinces include policies and regulations regarding Covid-19, financing of Covid-19 handling, the human resources, quality of health services for Covid-19 handling, and availability of drugs and medical tools for handling Covid-19 as what have been done in previous work⁸⁻¹¹.

The study procedure was initiated by licensing all research institutions in nine provinces in Indonesia. The data collection process was carried out by in-depth interviews. The data is then transcribed and summarized in the form of a matrix. Data analysis was carried out by means of triangulation of sources between informants. This research has received ethics approval from the Health Research and Development Agency of the Republic of Indonesia on June 17, 2020.

Results

Policies and Regulations

Informants from the nine provinces revealed that there were various rules or regulations, starting from the district or city level to the provincial level. It is known that the provincial level regulations are more focused on the formation of task force, the appointment of referral hospitals, and policies regarding health protocols which are follow-ups to the Covid-19 prevention guidelines made based on regulations from central government. One of the provinces that has regulations on this focus is East Java Province, where regulations were found implementing health protocols, providing local tax incentives for Covid-19 handling, implementing sanitation in worship places, tracing (to break the Covid-19 spread), waste management in the context of preventing Covid-19, and regulations regarding working from home. Likewise, Central Java Province made regulations about Covid-19 as an outbreak status.

In addition to the formation of regulations from the provincial and district/city levels, various other efforts have also been made in handling the Covid-19 pandemic. One of the efforts is the creation of Covid-19 prevention guidelines. The guidelines for preventing Covid-19 have changed five times. Despite those changes, informants from various provinces said that the guidelines were still easy to understand and apply. It only took the informants a few days to get used to and implement the changes to the guidelines.

Guidelines for the prevention and control of Covid-19 Revision 5 and Guidelines for Covid-19 management, August 2, 2020 edition (IF15 from DKI Jakarta)

The protocol is easy to understand and so far, there have been no difficulties in implementing the Covid-19 handling protocol (IF56 from Jawa Tengah)

In various provinces, there were obstacles in disseminating health protocols. The Jawa Timur province had difficulty socializing health protocols online related to signal problems. Whereas in Papua, it was found that not all people believe about the existence of Covid-19, thus some people refused to be examined. The following are detailed explanations of the health protocol socialization obstacles in various provinces.

Table 1. Obstacles in the Socialization of Health Protocols in Nine Provinces

North Sumatera	Yogyakarta	East Java	Papua	South Sulawesi
There are no definite laws, thus there are still many health protocol violations (IF3)	The most difficult thing is social distancing due to the opening of tourist attractions, and in those places, it starts to get out of control (IF33)	The difficulty in disseminating regulations and guidelines without directly dealing with them (through online media) is deemed not optimal, especially if there are internet network problems and voices are not clear (IF57)	Difficulty in directing the public to conduct checks, tracing, and the disbelief in the existence of Covid-19, (IF92)	Yes, the difficulty is just how we distribute it to the public because the guideline's fourth revision is very different from the fifth revision in terms of handling Covid-19 patients (IF80)

Financing

In this study, it was found that the budget for handling Covid-19 was different for each province and agency. At RSUP H. Adam Malik in North Sumatera, the budget for handling Covid-19 was IDR 2.502.205.616. Unlike the hospitals in North Sumatera, DKI Jakarta's total budget is only IDR 376.369.001 for Covid-19 handling. Meanwhile in Jogjakarta Province, the Kulon Progo Health Office has a budget of IDR 2.520.874.028. At Semarang City in Central Java Province, the budget for handling Covid-19 is IDR 3.076.967.670 while Salatiga City Health Office reached IDR 28.734.8736.664.

According to an informant from North Sumatera, the total Covid-19 budget in several hospitals is actually still insufficient for the provision of BMHP, PPE, and others. The increase in PPE and BMHP prices is also the cause of insufficient Covid-19 budget funds. However, the Covid-19 budget funds were still sufficient because of the Unexpected Expenditure APBD funds.

If you it is enough, obviously it is not. Especially for the provision of BMHP, PPE, monitoring operations, and incentives for health workers. However, with the existing budget, efficiency is still being implemented, such as unexpected fund diversions (IF3 from North

Sumatera)

It cannot be said that it is enough, but it also cannot be said that it is insufficient because the prices of PPE and BMHP all went up. Attempted by personnel who do not have direct contact with patients, occasionally using a cloth (IF24 from Banten)

The budget for handling Covid-19 from the government and other institutions or agencies is used for various things. At a hospital in North Sumatera, there is a budget allocation for handling Covid-19 which is used for transportations costs for officers, procurement of BHMP, and procurement of PPE. Hospitals in Yogyakarta and Centra Java also use the budget for handling Covid-19 to procure PPE.

The transport for isolated, suspected, and close-contact patients are taken from BOK for routine transport (IF5 from North Sumatera)

Tracing implementation because it requires PPE and a low of manpower (IF21 from Yogyakarta)

The budget is mostly used for PPE (IF48 from Central Java)

Service Quality

According to the informant's explanation in this study, it was found that health workers at the time of the Covid-19 pandemic had inappropriate proportions in certain segments. The shortage of medical personnel is a major factor at this time due to the lack of human resources. Efforts made by health facilities include a rolling system. The following is the informant's explanation.

With the number of cases continuing to increase, there is a shortage of human resources. For this hospital, there should be shifts or rotation of officers every four month. However, the availability of human resources is very minimal (IF9 from North Sumatera)

The human resources for hospitals in DKI Jakarta, Jogjakarta, and *Central Java* have more than enough, even though at certain times they are overwhelmed.

This can be overcome by applying shifts or rotation to the officers on duty. The following is the informant's explanation.

Human resources are sufficient because some are still young and has the enthusiasm in handling Covid-19 (IF17 from DKI Jakarta)

It is enough and not lacking. It's just that the workload has indrased (IF24 from Banten)

Until now, human resources have been sufficient because we cannot recruit anymore. So, there is only shifts or rotation, especially for the paramedics because they work 24 hours. So, there is a rotation happening (IF38 from Yogyakarta)

Human resources handling Covid-19 patients at the beginning of the pandemic were sufficient, but overtime a little overwhelmed (IF56 from Central Java)

Hospitals in East Java and South Kalimantan often experience a shortage of health workers. This happened due to the increasing number of patients who were positively infected with Covid-19. In South Kalimantan, a shortage of human resources also occurred because officers were found to be infected with Covid-19. The lack of human resources at hospitals in East Java has been carried out by several solutions, such as adding health personel from internships and volunteers. The following is the informant's explanation.

The need for human resources at Arosbaya Public Health Center is still limited when compared to the number of Covid patients being served. The solution includes: 1) Assistance of staff from interns, 2) Transfer of duties and functions, as well as additional job descriptions for personnel who are active in public health efforts to the Covid-19 ployclinic for screening, recording, and tracing (IF61 from East Java)

There is a shortage of doctors because there are only three people in the Health Centre, then there are doctors who have been confirmed positive for Covid.

So, only two are active effectively. And one of the two doctors is also a doctor who on maternity leave (IF72 from South Kalimantan)

So far, human resources are sufficient and we have received 400 volunteers (IF18 from DKI Jakarta)

Various trainings have been carried out by health workers to assist in handling Covid-19 patients. The training that health workers received in handling Covid-19 is training for swabber, Covid-19 countermeasures, Infection Prevention Guidelines (PPI), and many other trainings. However, further training is needed for the health workers.

Table 2. Training Needed for Health Workers

Training Needed for Health Workers	Informant Code
How to do tracing correctly. Maybe there are more detailed interview techniques that can be used to do tracing effectively.	IF58, IF80
The desired training is data processing and analysis of Covid-19 because data is constantly changing.	IF46, IF58
Need to train non-health workers to be able to help in the filed in order to be able to shift as well as maintain the health and safety of staff.	IF12
Provided with the latest education related to Covid hadnlrs and providing excellent service.	IF19
Tracing training is included for volunteer tracing implementation.	IF57
Technical guidance for Health promoters.	IF57
ICU room attendant training for ventilator installation.	IF57

The risk of being exposed to Covid-19 is very high for health workers. However, in Sumatera Utara, most of the officers infected with Covid-19 are officers who are not on duty in isolation rooms and do not directly handle Covid-19 patients. This is different from what happened in Jogjakarta, where 40 health workers were positively infected by Covid-19 because the implementation of health protocols was not optimal in several rooms.

From 20% of the total health center staff who participated in the mass swab, the results were two

people confirmed positive, namely 1 nurse and 1 part of management (IF6 fro North Sumatera)

Approximately five doctors were exposed. One person is a physician Non-Covid-19 polyclinic, and the other doctor in management is most likely exposed outside the hospital (IF26 from Banten)

According to an informant from Jogjakarta, several hospitals have provided a special place for isolation of health workers who are positive for Covid-19. The hospital has also disseminated K3

guidelines to all employees. Not only that, the hospital also carried out tracing according to the guidelines for preventing Covid-19 at the Hospital.

Provide a place of isolation, socialize guidelines from K3 and tell all employees to wear PPE, adjust it to their workplace, social distancing and wash their hands frequently. Provide special wards for them if they are infected with Covid. It's on the 3rd floor. It is dedicated to our employees if they are positive for Covid. So, they isolated themselves in this hospital (IF44 from Yogyakarta)

Based on the results of this study at a hospital in North Sumatera, incentives given to health workers were carried out as it should be. Incentive is only given to officers who handle Covid-19 patients directly. Incentive is considered as a form of appreciation or concern for the loyalty of officers in handling Covid-19.

Regarding the calculation of health workers' incentives not to be limited by the number of recipients, due to the fact that in the field, the tasks were carried out by a team (IF19 from Banten)

Incentives that do not differentiate between Public Health Centers and Hospitals (IF49 from Central Java)

Incentives for Public Health Centers are less than hospitals. Whereas in the field that carry out a lot of tracking, tracing, and other activities, most of them are Public Health Center people, so the workload of Public Health Center worker is a lot (IF71 from South Kalimantan)

Health Services

Health services during the Covid-19 pandemic certainly experienced many changes, such as health workers who had to use PPE and the application of health protocols in hospitals. It is known that in North Sumatera in providing health services during the Covid-19 pandemic, health protocols were implemented such as obtaining a place to wash hands and the officers on duty had already used

PPE properly. The flow of services at the hospital is also in accordance with applicable regulations and procedures. The following is the narrative.

Waiting rooms are not yet ideal for patients. Patients with suspected Covid-19 wait outside the building (IF34 from Yogyakarta)

If we get a positive Rapid Test result, we are confused. What is the status of this patient? Fit into what kind of criteria? It means that something is out of sync. So, the guidelines cannot be executed, do not have the ability to force the situation, and the existing circumstances have never been seen in the guidelines (IF44 from Yogyakarta)

Various problems and obstacles are of course experienced by health facilities in handling and minimizing the spread of Covid-19. In North Sumatera, it was found that hospitals only have rooms for screening health personnel. Several Public Health Centers in North Sumatera have also found difficulties in early detection of Covid-19 in the community. This is because so far the observation has only been carried out independently by the Public Health Centers. The following is the story of the informant regarding the screening flow in North Sumatera.

Currently, RSUP only has room for screening health personnel only. Temporary house is needed to provide a sense of security and comfort when health workers finish their activities at the hospital (IF7 from North Sumatera)

People Without Symptoms (OTG) is one of the things that is troubling during the current pandemic, so it is necessary to make efforts to minimize the spread of Covid-19 through OTG. One of the efforts that are often carried out in various regions is to provide a shelter for OTGs. However, some areas in Indonesia, such as in Serang, Banten, do not yet have a shelter for OTG. So, that at this time almost all Banten people carried out the screening process and accessed health facilities to carry out a swab test.

The incidence of patients who have died and tested positive for Covid-19 with undetermined swab test results has occurred evenly in all regions in Indonesia. This is due to the length of the test results. Some health facilities have been accused by the local community with the term Covid of probable patients who died before the results of the swab test were published. In Jogjakarta, this happened because it had to be done according to applicable guidelines. Not only in Jogjakarta, fixing of that matter is also opposed in South Kalimantan, along with his narrative.

Probable: Suspect person dies before the swab comes out, is it probable? What is the basis? (IF43 from Yogyakarta)

Some patients who wish to enter the hospital must undergo a rapid test. But the results of the rapid test have not yet come out, it turns out that the patient has died first, thus some people do not accept it, etc. Therefore, there is a lot of news circulating that the patient was deliberately made covid-19 “ (IF69 from South Kalimantan)

Medicine Availability

This study found that the stock of medicines available at the hospital had constraints such as expiration and stocks of certain types of drugs were not available. However, Public Health Centers and hospitals have other drug alternatives to replace empty stock of drugs with a fast restocking process, so that the drugs available at the hospital are still sufficient.

So far there have been no significant obstacles. Even at the hospital, there were only drug stocks that had expired. That was immediately reported to the Provincial Health Office and the restock process was fast (IF3 from North Sumatera)

It is enough because the drugs given are more on symptomatic drugs (IF12) (IF13 from DKI Jakarta)

The results of this study also revealed that treatment services for Covid-19 patients in health facilities were not sufficient to treat patients. Most

of the informants complained about this due to the lack of much needed antiviral drugs. The available antiviral drugs are also unclear on the instructions and criteria for their use. Another complaint expressed by several informants was that the availability of drugs for serious and critical illnesses were still lacking. The following is the narrative.

The drugs most needed for the treatment of Covid patients are antivirals and antibiotics (oseltamivir is hard to get) (IF54 from Central Java)

Availability of Covid drugs at dr. Soetomo for standard light medicine and medium is sufficient. However, for heavy and serious drug is still lacking due to inadequate distribution such as Resedimvir, Levofloxacin, and Metoclopramide (IF63 from East Java)

Several efforts by health facilities to avoid empty drug stocks have been made. Several informants revealed that the hospital immediately bought drug stocks, which did not use the funds to procure drugs. However, there are often problems in fulfilling drug stocks such as goods needed are not available in the market and need to submit to the Health Office and order from certain distributors. Most of the informants in this study also revealed that in order to supply new drugs, it is necessary to submit a proposal for assistance to the company and the Health Office. Several informants also revealed that another obstacle in drug procurement was due to unclear drug procurement regulations.

In the procurement of BMHP, there are no problems. Only problem is PPE, which is not available in the E-Catalog (IF39 from Yogyakarta)

The availability of goods needed in the market that does not exist, the solution is to contact the distributor directly who has been our partner (IF45 from Central Java)

There are no clear rules that the Health Office can procure drugs outside PKD (Basic Health Services) /

generic (IF57 from East Java)

The results of this study indicate that the tools for detection of Covid-19 are still lacking. Several informants revealed that Covid-19 detection tools such as PCR and TCM were only available for 1 unit in one hospital. This is an obstacle due to the lack of optimization and effectiveness of health workers in detecting Covid-19.

However, the problem is the PCR device and the TCM machine, only 1 unit is available at H. Adam Malik Hospital. For TCM even the cartridge is very hard to come by. the more tools are used, the faster the

early detection of Covid-19 will be (IF7 from North Sumatera)

This study revealed that hospitals and Public Health Centers were experiencing a shortage of BMHP, such as masks and hand sanitizers. Most of the informants stated that the limited number of medical devices available caused the use that was not in accordance with standards. However, most informants also stated that the availability of medical devices was sufficient. This is supported by the fact that several health facilities purchase their own equipment and the large number of equipment grants for health workers.

Table 3. Personal Protective Equipment (PPE) Problems

PPE	Problems
PPE in general	<ul style="list-style-type: none"> - There are also PPE deficiencies relying on donations (IF11) - The PPE grant was not good, so the hospital decided to buy it (IF 18) - When the tool is available, the room is not (IF11) - According to the protocol, our rooms for installing PPE and removing PPE should be far apart. But for now, this cannot be done due to the limited space of the Public Health Centers, the term is called dopping and donning (IF70).
Hazmat Suit	<ul style="list-style-type: none"> - At the beginning of the pandemic, when PPE experienced a shortage of hazmat wearing raincoats. There were also donors who helped. Currently, PPE stocks are still safe (IF9) - The hazmat suit, after wearing it, then wash it and dry it in the sun, then put it on again (IF11) - Reuse, calculate monthly usage, for the next need (IF44) - For hazmat use, change into a raincoat. To use the N95 in the sun after use. For medical masks it is still sufficient (IF61) - Borrowing and creativity to make gloves by patching with tape and using raincoats as hazmat (IF51) - At the beginning lacked PPE, so some health workers wore raincoats and plastics. (IF73)
Masks	<ul style="list-style-type: none"> - Masks until December are lacking, especially the N-95. Most surgical masks are needed, but the price issue is far. (IF33) - The problem is the fulfillment of the N-95 mask, because the price is still expensive. So, I urge friends to wear a two-layer surgical mask.
Oxymeter	<ul style="list-style-type: none"> - Oximetry examination, the number is still limited. Only in the ER and those at the screening. Each unit does not have one. In FKTP, the initial detection is, at least the temperature is the same as oxygen saturation (IF35)

The results of this study indicate that the suitability of the ICU room and medical devices is not sufficient. Most of the informants revealed that the need for a ventilator in the ICU room could not accommodate the large number of patients being treated in that room. This shortage of needs also includes medical devices such as stethoscopes and thermogun, which are not yet available. The following is the narrative of the informant.

Ventilator. Currently the hospital only has five ventilators, while more and more patients need ICU care (IF8 from North Sumatera)

A stethoscope that is used to keep a distance, but until now there is none (IF19 from Banten)

According to the informant's explanation, the lack of stock of certain tools for handling Covid-19 patients still occurs in the laboratory room. Most of the informants stated that the components of the laboratory needs came because of the various donations given. However, the various donations given did not meet laboratory standards. Several informants also revealed that they needed aerosols for dental services to prevent transmission. The following is the story of the informant.

Availability of supply providers is not always available, and there must be a distribution permit for certain equipment which is very much needed when in the laboratory. The aid reagents that come with different brands and the requirements for BMHP are not the same. Various sizes of aerosol barrier filter tips, 70% alcohol, nitrile gloves, micro tubes, parafilm, children's size dacron swabs, VTM which various brands often do not meet the needs in the lab, donation reagents (PCR and various extraction kinds of brands, with single gene or multiplex), etc. (IF63 from East Java)

VTM with various brands that often do not suit the needs in the lab, donation reagents (PCR and extraction of various brands, single gene or multiplex), etc. (IF63 from East Java)

For the Public Health Center, the most needed is aerosol, especially in dental services to prevent transmission (IF70 from South Kalimantan)

Discussion

The results of this study reveal that every province in Indonesia has various regulations that focus on accelerating and preventing Covid-19. In the U.S., regulations prioritize high-risk communities for testing, treatment, and overcoming barriers to social and economic welfare¹². The regulations in Taiwan since February 2020 have focused on the detection and isolation of local cases and limit the entry of foreigners from highly influential areas⁸. One of the policies has also been developed in various provinces in Indonesia, namely social restriction policies and implementation of health protocols. The implementation of this policy is expected to be able to reduce the rate of Covid-19, including in Indonesia.

The Covid-19 prevention guidelines made by the Indonesian Ministry of Health to reduce the rate of Covid-19 in Indonesia have undergone changes and added to the contents of the guidelines so that they are adjusted to the increasing situation and the development of findings regarding new things on Covid-19. One of the changes is in the chapters on clinical manifestations, infection prevention and control, specimen management and laboratory confirmation, and community empowerment risk communication¹³. Changes to the guidelines should also be developed in view of the situation and conditions in various provinces. The government should also ensure that the socialization of the revised guidelines runs smoothly.

The informants of this study complained that there were still people who did not believe in the Covid-19 pandemic due to a lack of socialization from the government. In fact, they are not worried about new clusters of transmission from public places or tourist attractions. Encouraging development and innovation from resilient villages to increase efforts to prevent Covid-19 have been carried out in Surabaya.

In Australia, the federal government implements a self-isolation policy by closing all services on March 23, 2020, including clubs, hotels, cafes and restaurants limited to takeaway services only¹⁴. This policy was also implemented in DKI Jakarta. However, fears of economic conditions have made these public places operational again by implementing health protocols.

Lack of public awareness in implementing health protocols in outdoor activities is very important to minimize transmission of Covid-19. A study conducted by Michael in developed countries shows that many adults are aware of the importance of preventing exposure to Covid-19, but this does not change the routines or plans they want to do¹⁵. According to informants in this study, people from economically disadvantaged circle find it more difficult to implement health protocols. The youth group hopes that the success of the socialization in implementing health protocols for the prevention of Covid-19 will run smoothly. Therefore, the socialization of Covid-19 prevention requires different approaches at different age groups and economic levels.

The socialization of the prevention of Covid-19 that has not been optimal has resulted in more and more people being affected by Covid-19. The high number of positive Covid-19 patients affected economic growth, so there were obstacles in the financing budget for Covid-19 patients. The financing budget for Covid-19 in Indonesia is sourced from the 2020 State Budget (APBN). In developed countries such as the UK, it provides £ 3.2 billion in emergency grants and more than £ 5 billion in cash flows to support local authorities in the month March and April 2020⁹. The allocation of funds amounting to £ 1.6 billion is intended to meet the needs of health care expenditures during the pandemic. Not only that, the available funds are also allocated per person with most of them flowing to low-level districts for social safety net services¹⁶. In Indonesia, the government issued a financing regulation to handle Covid-19 in the form of (Perppu) No.1 of 2020 concerning State Financial Policy and Financial System Stability for

Handling the 2019 Corona Virus Disease Pandemic (Covid-19).

In March 2020, the British government handled Covid-19 by mobilizing Covid-19 funds for five sectors¹⁷. These sectors are health services (service providers, equipment, vaccine testing and development), public services and emergency response, support for affected individuals, pandemic, and PPE support⁹. Based on the experience of developed countries, the Government of Indonesia should increase its budget, especially in terms of procurement of PPE and vaccine supply.

The Covid-19 pandemic does not only have an impact on the economy and funding and special Covid-19 budgeting. This also has an impact on health workers who experienced an increase in work shifting during the Covid-19 pandemic¹⁸. So, that additional officers are needed in handling Covid-19 such as volunteers.

The results of this study indicate that in handling the Covid-19 pandemic, the Indonesian government opens recruitment of medical and non-medical volunteers, and collects donations in handling Covid-19. Non-medical IT volunteers are needed to create systems and applications for accelerating information and policy making based on data¹⁹. In Indonesia, through the government, a Task Force was formed which has the aim of being a special volunteer in helping health workers handle Covid-19²⁰. This needs to be done evenly for fulfillment in health workers or volunteers in remote areas to handle Covid-19. Volunteers who have been recruited in handling the Covid-19 pandemic must have more abilities. One of the quick efforts to improve the capacity of officers is by providing training.

One of the capabilities expected to be improved by the informants of this study is surveillance capability. The availability and completeness of surveillance data that is real time, interoperable across units, and connected between regions is a navigation tool for policy-making that is urgently needed²¹. At times like this it will be better if human resource funding capacity

is increased and develop systems for surveillance and tracing for handling Covid-19.

Covid-19 detection is carried out by tracing and several types of tests such as swab tests. The test results according to this study take a long time in several provinces. This research was also confirmed by the news that the results of the swab test tended to be accepted for a long time due to the lack of capacity for the PCR test¹⁰. In South Korea, the hospital formed a unit of officers that had the role of regulating a special hospital for Covid-19 referrals so that the results were faster²². The screening process for patients to detect Covid-19 are carried out by means of rapid tests and swab tests in primary health facilities²³. Screening of medical personnel, namely by contacting the hospital via email by mentioning the symptoms they feel. Testing of medical personnel also through the Screening Pod using the RT-PCR method²⁴. This requires strengthening the capacity of primary health facilities, including those at the Public Health Centers.

In Indonesia, health facilities for handling Covid-19 do not need to rely on hospitals but must also strengthen primary health services. This can be done by strictly implementing health protocols at health centers, improving technical or clinical skills in dealing with Covid-19, and conducting management and monitoring of isolation⁷. Strengthening primary health services can also be done by improving quality in the pharmaceutical sector. This is in accordance with research, which states that in the pharmaceutical sector or pharmacists have an important role in handling Covid-19 by monitoring the drugs used by Covid-19 patients²⁵.

The results of this study indicate that the stock of medicines available at the hospital has a problem in completeness of the drugs. This is also supported by the difficulty of finding a distributor of medical equipment providers at the start of the pandemic²⁶. The need for oral drugs is also increasingly scarce and costly at the beginning of the pandemic¹⁸. According

to the results of this study, ensuring sufficient drugs for the symptomatic handling of Covid-19 patients is a matter of the important one. According to the results of other studies showing that Vitamin C given to inpatients with Covid-19 has also decreased availability²⁷. The procurement of these drugs does require funding and the right distributors.

In the Covid-19 pandemic, distributors are very much needed, especially to help in the shortage of personal protective equipment (PPE). The results of this study also indicate that it is difficult to find distributors and market prices are high. This shortage resulted in an increase in PPE production to meet demand, and as a result some substandard equipment began to enter the market¹¹. The government should encourage an increase in the role of small and medium enterprises in producing PPE domestically. So, that the community can divert the business sector during the Covid-19 pandemic, namely producing Personal Protective Equipment (PPE) and health masks / cloths that can be used repeatedly by the community¹. In addition to producing PPE, the production of other tools such as tools for early detection of Covid-19 is also required.

Early detection of Covid-19 can be done with several tools, such as a body temperature measuring device. South China Morning Post (SCMP) reports that one of the efforts to detect and prevent the spread of the corona virus is to check the body temperature which is equipped with a handheld infrared thermometer, also known as a "thermogun", because it looks like a gun that is fired in the forehead³. Other temperature sensor devices are also observed by Puput et al²⁸, also observed that the MLX 90614 Temperature Sensor for Early Detection of Covid-19 Symptoms before entering the building can be used with an average error of 0.6% and a standard deviation of 0.078. The results of this study indicate that the availability of thermogun is sufficient in health facilities.

Health facilities in several regions in Indonesia are known to have met various needs in handling

Covid-19 both in terms of facilities, human resources, and funding. The strength of this research is that it discusses variations in handling Covid-19 in nine provinces by presenting a fairly comprehensive policy for handling Covid-19. The budget for handling Covid-19 in this study is discussed in detail in each of these provinces. In addition, this study also found problems and proposed solutions in handling Covid-19 which were explored from the nine provinces in terms of policies, funding, human resources, and drugs and medical equipment. However, the weakness of this study is that it does not discuss too much about the social safety net that is needed by the community because this is not the essence of handling Covid-19. This research also does not discuss the technology used in handling Covid-19 because there are still not many developments in health technology in handling Covid-19 that have been implemented in health facilities. In addition, the handling of Covid-19 from the aspect of vaccine administration was not discussed in this study. For health technology and vaccine administration in the context of handling Covid-19 can be carried out in further research.

Conclusion

This study concludes that every province in Indonesia has various regulations that focuses on accelerating and preventing Covid-19. The budget for handling Covid-19 also varies from province to province. Human resources in handling Covid-19 in certain provinces are sufficient but with an increased workload. Some health facilities still do not have the means to properly screen both medical personnel and patients. The stock of medicines available in hospitals has constraints such as limited stocks of certain types of drugs.

The government should make an accounting of the amount of the budget that has been given in handling Covid-19 to evaluate and prepare for the availability of funds in the following year. The Ministry of Health should increase funding and human resource capacity for surveillance and tracing handling of Covid-19.

Local governments should encourage each agency to provide managerial and leadership training to the task force handling Covid-19 in various agencies. Further research on budget requirements and recording of expenditures in preparation for the next pandemic.

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