



Smart Strategies to Overcome the COVID-19 Pandemic in Indonesia

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ABSTRACT

PPKM levels 1-4 become a model in reducing the Covid-19 pandemic in Indonesia. PPKM level 1-4 as a solution to overcome the covid-19 pandemic that is booming in Indonesia due to the delta variant virus. The Indonesian government acted quickly and measuredly and was finally able to overcome the COVID-19 pandemic. Through the implementation of PPKM levels 1-4 with several stages, namely the first stage, the second stage and the third stage, the Indonesian government was able to reduce the number of positive COVID-19 exposures, be able to parse the number of patients who died and be able to increase the number of recovered patients.

Keywords: PPKM level1-4, first stage, second stage and third stage

INTRODUCTION

The case of the COVID-19 pandemic in Indonesia, which tends to be the impact of the new delta variant. Moreover, there is the Eid al-Fitr holiday where most of the population in Indonesia is Muslim. Practically this has an impact on the mobility of people in Indonesia is very high. With the entry of a new delta variant from India, the number of people exposed to COVID-19 in Indonesia has increased dramatically. The number of those who tested positive and died was very high. According to kompas (July 15 2021) The delta variant or by another name variant B.1,617.2 is known to have spread in 13 provinces, of which DKI Jakarta is the province with the largest distribution, which is 264 cases. This variant is a variant originating from India where it was discovered in October 2020 and since June 1, 2021, has spread to 62 countries.

Covid cases in Indonesia are increasingly difficult to contain and become terrible when there is a shortage of O₂ gas in many hospitals and also high hospital BOR levels so that exposed patients cannot be handled which results in death. This case occurred in June 2021 where cases soared so that many exposed patients could not be treated properly. This is because the hospital is full and even the hospital has modified the parking lot for inpatient patients, there has also been a change in function from the hajj inn and the athlete's guest house has turned into an inpatient. It's also not able to accommodate Covid patients. Not to mention because of the boom, there is a vacancy of oxygen cylinders in Indonesia, the State of Singapore provides gas cylinder assistance, as well as other countries to Indonesia.

Another factor that has added to the increasing difficulty of controlling Covid-19 cases in Indonesia is the presence of a small number of people who think that COVID-19 does not exist. Moreover, there are fake news stories that are widely spread on social media, adding to the confusion of some people. As in Banda Aceh and Madura, which have a dominant religion or Islam, they think that Covid does not exist. Although the government can thus hinder [the government's program in terms of vaccination. The government, not to mention the vacancy of O₂ gas cylinders and the issue of BOR in most hospitals in Indonesia, which is so high that hospitals are unable to accommodate patients exposed to COVID-19 positive. Practically adding to the increase in Covid cases continues to increase and also the increase in the number of patients who die more and more.

The Indonesian government, with its large population and very easy access by land, sea and air, in addition to the support of a large population, ranks fourth in the world after the United States, causing many Covid cases. In addition, the population in Indonesia is concentrated on the islands of Java and Bali, making many residents in Indonesia the biggest contributors to being exposed to Covid. The large number of exposures to COVID-19 and the high number of deaths have forced the Indonesian government to be a new breakthrough for the handling. If you follow a lockdown like other countries, Australia, Singapore and Thailand, it is impossible because they have a smaller population and access to roads and seas when compared to Indonesia. Another factor is that the government's lockdown must bear all residents to provide food assistance and others. Obviously this factor cannot be implemented in Indonesia. Then the government issued the implementation of the restriction on community activities (PPKM). The COVID-19 case handling model as a typical model has several levels ranging from level 1 to level 4.

The implementation of community activity restrictions (PPKM) aims to reduce community mobility out of the house by having several levels. Level 4 with more stringent and level 1 with the flexibility of community mobility or not tight. If you are still at level 4, it means that the community is restricted from leaving the house. To support the implementation of PPKM level 4 to level; 1 assisted by the TNI and Polri, with the aim of controlling the implementation of PPKM so that it runs well so that it is expected to reduce the number of positive COVID-19 exposures. This is natural to arrange so that the community obeys the PPKM rules so that it can run according to the government's expectations so that Covid cases can be reduced.

Rejection by the community from traders, rice stall sellers (warteg), cinema entrepreneurs, mall managers, restaurants all voiced that if PPKM continued it was feared that it would go bankrupt. The Covid -19 has had a negative impact on the economy. Many have been affected by the Covid -19 pandemic, such as hotels, restaurants, companies, SMEs, and tourism that have gone bankrupt, thus adding to a lot of unemployment. This is reinforced by research conducted by Ozili, & Arun, 2020 which states that the global impact of Covid -19 on the hotel and restaurant business includes confirmed cases, deaths, reinfection, in several countries and continents. Other supporting research is Centeno and Marquez (2020) researched by developing an integrated seasonal autoregressive moving average model for the Tourism and hospitality industry in the Philippines, and predicted a total revenue loss of around 1 170.5 billion Philippine pesos, equivalent to USD 3.37 billion from the impact of Covid-19 until the end of July 2020. F. Gunay, E. Bayraktaroglu and K. Ozkul (2020) analyze to calculate the impact of Covid -19 on Turkey's tourism and hospitality industry. Predicting total revenue loss in best and worst scenarios - respectively USD 1.5 billion & USD 15.2 billion respectively for 2020. The worst case scenario, which fortunately did not materialize, involves closing borders for 4 months without economic recovery.

Another effort made by the government is to maximize the vaccination program. Through vaccination, it is hoped that the community can immediately carry out vaccinations that are given free of charge to the community. This program is carried out by all in Indonesia by cooperating with BUMN and private parties and involving elements of the TNI and Polri. However, the implementation of vaccination in some small parts such as in Aceh and Madura is actually opposed. Moreover, the Sinovak vaccine drug originating from China adds to the difficulty of being accepted by the people of Aceh and Madura. There have been many rejections and even destruction of the vaccination program sites. So the government took the Ulama in Aceh and Madura so that gradually it was finally accepted by the people of Aceh and Madura. In addition, the government also provides basic food assistance for people who want to be vaccinated. This program is mostly carried out in malls and villages so that people are aware of the importance of vaccination. By continuing to campaign for health protocols,

wearing masks, keeping a distance and washing hands and maintaining strict PPKM and sanctions for violating the rules will gradually increase public awareness. The existence of community support makes the PPKM program more effective in dealing with covid problems in Indonesia and can be used as a model for other countries to overcome covid. Indonesia with a fairly high level of difficulty compared to other countries. Because Indonesia has the 4th largest population after the United States, and is the world's largest archipelagic country, it is difficult to monitor because it has access to more land and sea compared to other countries. Ease of road access makes monitoring community mobility more difficult, as well as the number of ports so that the mobility of people using port facilities is also increasingly difficult to monitor. Even though the number of seaports in Indonesia is large because it is an archipelagic country, while land mobility is due to easy access. So the authors hope that the PPKM program authors level 1-4 can be used as a model like other countries in dealing with the problem of covid.

LITERATURE REVIEW

Covid 19

The COVID-19 virus has become a global topic of conversation. Abroad, the existence of this virus has become news headlines in several television media. Everyone initially headed to Wuhan, China. This virus is very shocking because it is quickly transmitted and patients quickly experience shortness of breath. If it is too late to be helped by a doctor, his life will float or die. This news is getting excited as many victims fall. This virus is more vicious when compared to SAAR and the bird flu that has ever existed and was scary. The covid 19 virus is trending because of fear.

Coronavirus Disease (Covid-19) is a very dangerous infectious disease because it is invisible to the naked eye. This virus is also very disturbing to the public because the transmission is quite fast. The World Health Organization (WHO) on the International Classification of Diseases (ICD). Mention that this disease is caused by the Severe Acute Respiratory Coronavirus 2 (SARS-CoV-2) virus which was named by the International Committee on Taxonomy of Viruses (ICTV) or earlier. Commonly known as coronavirus 2 and WHO on February 11, 2020 has officially announced this virus.

Coronaviruses (CoVs) are a large group of viruses, some of which can cause respiratory disease in humans, ranging from the common cold to serious illnesses such as Severe Acute Respiratory Syndrome (SARS) and Middle East Respiratory Syndrome (MERS). CoVs can cause disease in animals. and humans. SARS-CoV infects ferrets and the first human case was found in 2002, while MERS-CoV was found in camels and the first human case was in 2010.

In December 2020, the first case of COVID-19 in humans was reported from Wuhan, China. This virus was found in a group of bats. When the virus passed from animals to humans for the first time, it was called a spillover event. symptoms) of Covid-19 disease is estimated for 1 to 14 days, generally around 5 days. The symptoms that appear and these are often commonly experienced by Covid-19 patients are fever, fatigue, and dry cough. However, some patients may experience body aches , nasal congestion, runny nose, sore throat or diarrhea. In general, most infected patients have mild to moderate respiratory illness and will recover without requiring special treatment. Covid-19 patients with severe symptoms in the form of severe pain and difficulty breathing or shortness of breath. Elderly patients or patients who have a history of high blood pressure, diabetes, heart problems may have a greater risk of experiencing more serious and severe symptoms.

The media that spreads Covid-19 can be through droplets or droplets from the nose or mouth of an infected patient when the patient sneezes or coughs and is inhaled by others. In addition, the spread can also be through splashes that fall on objects or surrounding surfaces.

If someone else touches the object or surface and rubs the eye, nose or mouth area, the transfer and spread of the virus can occur. The resistance of the coronavirus to surfaces is not known for certain, but some sources state that the coronavirus can survive on surfaces from a few hours to a few days. Other references state that the coronavirus can survive on objects made of aluminum for 2-8 hours, iron for 48 hours, glass for 4 days, wood for 4 days, paper for 4-5 days, medical gloves for 8 hours, and plastic for 5 days. The high virulence of Covid-19 obliges us as part of society to be vigilant. Efforts to reduce the transmission of the COVID-19 virus, including international travel restrictions, business closures, large-scale private bans on public gatherings, and mandatory quarantines, have been shown to effectively reduce the rate of virus transmission (Hsiang S, Allen D, Annan-Phan S, Bell K, Bolliger I, Chong T, et al., 2020; Chinazzi M, Davis JT, Ajelli M, Gioannini C, Litvinova M, Merler S, et al, 2020 and Deb P, Furceri D, Ostry JD, Tawk N, 2020).

Moreover, the virus has mutated so that there are more virulent ones, namely the alpha, beta and delta viruses. This delta variant is very dangerous because it spreads faster.

Covid-19 Vaccine

1. Sinovac

From the results of the analysis of the phase III clinical trial in Bandung, the efficacy of the Sinovac Covid-19 vaccine was 65.3 percent. The vaccine, developed by Sinovac Research and Development Co., Ltd, is given in two doses. The amount of each dose is 0.5 ml, with a minimum interval of administration between doses of 28 days.

2. Bio Farma

The vaccine produced by PT Bio Farma is derived from vaccine raw materials which have been gradually delivered by Sinovac. This vaccine has a dosage form of 5 ml vials. Each vial contains 10 doses of vaccine derived from inactivated virus. To maintain the quality and quality, this Covid-19 vaccine must be stored in a storage area with a stable temperature between 2-8 degrees Celsius.

3. AstraZeneca

The Covid-19 vaccine developed by AstraZeneca and the University of Oxford has an efficacy of 62.1 percent. This vaccine is given intramuscularly with two injections. Each injection dose given is 0.5 percent with a minimum interval of 12 weeks between doses. The side effects of the Astrazeneca vaccine are mild to moderate.

4. Sinopharm

Based on the evaluation results, the administration of two doses of sinopharm vaccine with an interval of 21 days showed a well-tolerated safety profile. The results of a phase III clinical trial conducted by researchers in the United Arab Emirates (UAE) with approximately 42,000 subjects showed the efficacy of the Sinopharm vaccine was 78 percent.

5. Moderna

Based on data from the third phase of clinical trials, Moderna's vaccine efficacy was 94.1 percent in the 18-65 year age group. The efficacy of the Moderna vaccine then decreased to 86.4 percent for those over 65 years of age. The results of clinical trials also state that the Moderna vaccine is safe for population groups with comorbidities or comorbidities.

6. Pfizer

Phase III clinical trial data show the efficacy of the vaccine developed by Pfizer Inc. and BioNTech is 100 percent in the age group of 12-15 years, then decreases to 95.5 percent in the age group of 16 years and over. The Pfizer vaccine is administered intramuscularly with two injections. Each injection dose given is 0.3 ml with a minimum interval between doses of 21-28 days.

7. Sputnik V

Sputnik V vaccine is used for the age group 18 years and over. This vaccine is given by intramuscular injection at a dose of 0.5 mL for 2 injections within a period of 3 weeks. Side effects of using this vaccine with mild or moderate severity such as flu are characterized by fever, chills, joint pain, muscle aches, weakness, discomfort, headache, hyperthermia, or local reactions at the injection site. Meanwhile, for its efficacy, phase 3 clinical trial data show the Sputnik V vaccine provides an efficacy of 91.6 percent with a confidence interval range of 85.6 percent - 95.2 percent.

8. New Janssen

The Janssen vaccine is used for the age group 18 years and over by giving a single injection or a single dose of 0.5 mL intramuscularly. In terms of efficacy, based on interim phase 3 clinical study data at 28 days after vaccination, the Janssen vaccine's efficacy for preventing all symptoms of Covid-19 was 67.2 percent.

9. Convidecia EUA

Just like Janssen, the Covid-19 Convidecia vaccine is also used for the age group 18 years and over by giving a single injection or a single dose of 0.5 mL intramuscularly. The efficacy of the Convidecia vaccine for protection against all symptoms of Covid-19 is 65.3 percent.

PPKM level 1-4

The efforts made by the Indonesian government in dealing with the COVID-19 virus attack are always innovating with all forms of terms. One of the terms used by the government in setting rules for dealing with Covid-19. Recently, the term Community Activities Tightening Enforcement (PPKM) with a level level was used to replace the term Emergency PPKM.

PPKM Level 4

- 1) The implementation of teaching and learning activities is carried out online as a whole
- 2) Implementation of activities in the non-essential sector applies 100 percent work from home (WFH) aka working from home
- 3) Implementation of activities in essential and critical sectors applies exceptions to WFO 100 percent, WFH 50 percent and WFH 25 percent according to the provisions
- 4) Supermarkets, people's markets, todo grocery stores, and supermarkets that sell daily needs are limited to operating hours until 20.00 local time with a 50% visitor capacity.
- 5) People's markets that sell non-daily necessities can operate with a maximum capacity of 50 percent, and operating hours are until 15.00 hours local.
- 6) Street vendors, grocery stores, voucher agents/outlets, barbershops/barbershops, laundry, hawkers, small workshops, vehicle washes, and others are allowed to open with strict health protocols until 20.00 local time and regulations technically carried out by the Regional Government.
- 7) Food stalls/warteg, street vendors, hawker stalls and the like are allowed to open with strict health protocols until 20.00 local time with a maximum of three visitors eating in place and a maximum meal time of 20 minutes.
- 8) Restaurants/restaurants, cafes located in closed buildings/stores, both in separate locations and in shopping centers/malls, only accept delivery/take away and do not accept dine-in.
- 9) Activities at shopping centers/malls/trade centers are temporarily closed except for access for store employees who serve online sales with a maximum of three people in each shop, restaurant, supermarket, and supermarket.
- 10) Places of worship are closed 100 percent, are advised to worship in their respective homes
- 11) Wedding receptions are temporarily prohibited
- 12) Public transportation (public transportation, mass transportation, taxis (conventional and online) is applied with a maximum capacity setting of 50 percent
- 13) Art, culture, sports and social activities are temporarily closed

- 14) Domestic travelers who use private cars, motorbikes and long-distance public transportation (airplanes, buses, ships and trains) must show a vaccine card with a minimum of the first dose of vaccination. It also shows H-2 PCR results for aircraft and antigen (H-1) for private cars, motorcycles, buses, trains and ships.

PPKM Level 3

- 1) The implementation of learning in education units can be done through limited face-to-face learning and/or distance learning.
- 2) Implementation of activities in the non-essential sector applies 50 percent Work From Office (WFO) for employees who have been vaccinated and are required to use the Pedulilindungi application at the entrance and exit of the workplace.
- 3) Implementation of activities in essential sectors such as: Finance and banking only includes insurance, banks, pawnshops, futures exchanges, pension funds, and financial institutions (which are oriented to physical services with customers able to operate with a maximum capacity of 75 percent of staff for locations related to services to the public, as well as 50 percent for office administration services to support operations Capital market (which is oriented towards customer service and good capital market operations), information and communication technology including cellular operators, data centers, internet, postal services, related media by disseminating information to the public, non-quarantine handling hotels can operate with a maximum capacity of 75 percent of staff Export-oriented and supporting industries wherein the company must show evidence of a sample document of Export Declaration of Goods (PEB) for the last 12 months or other documents showing export plans and are required to have an Operational Permit and Mobility for Industrial Activities (IOMKI) with due observance of technical arrangements from the Ministry of Industry can only operate with shift arrangements with a maximum capacity of 75 percent of staff for each shift only in production facilities/factories, 50 percent for office administration services for operational support.
- 4) The essential sector in the government sector follows the technical provisions issued by the Ministry of Empowerment of State Apparatus and Bureaucratic Reform.
- 5) Implementation of activities in critical sectors such as: Health, and security and order can operate 100 percent of the staff without any exceptions. Disaster management, energy, logistics, transportation and distribution, especially for the community's basic needs, food and beverages and their supports, including for livestock/pets, fertilizers and petrochemicals, cement and building materials, national vital objects, national strategic projects, construction (public infrastructure) , basic utilities (electricity, water and waste management) can operate with a maximum of 100 percent of staff, only at production/construction facilities/services to the community and for office administration services to support operations, a maximum of 50 percent of staff is applied. Companies that are included in the energy, logistics, transportation and distribution sectors, especially for the community's basic needs, food and beverages and their supports, including for livestock/pets, fertilizers and petrochemicals, cement and building materials, construction (public infrastructure), basic utilities (electricity) , water and waste management) are required to use the Pedulilindungi application starting September 7, 2021 to screen all employees and visitors who enter production/construction/service facilities and office administration areas.
- 6) For supermarkets, hypermarkets, traditional markets, grocery stores and supermarkets that sell daily necessities, operating hours are limited to 21.00 local time with a capacity of 75 percent of visitors. Supermarkets and hypermarkets are required to use the Pedulilindungi application starting September 14, 2021.
- 7) For pharmacies and drug stores can be open for 24 hours.

- 8) People's markets that sell non-daily necessities can operate with a maximum capacity of 75 percent and operating hours until 18.00 local time.
- 9) Street vendors, grocery stores, voucher agents/outlets, barbershops/barbershops, laundries, hawkers, small workshops, vehicle washes, etc. are allowed to open with strict health protocols until 21.00 local time which is regulated technically regulated by the Regional Government.
- 10) Implementation of eating/drinking activities in public places: Food stalls/warteg, street vendors, hawker stalls and the like are allowed to open with strict health protocols until 21.00 local time with a maximum of 50 percent of visitors eating food capacity and a maximum meal time of 60 minutes which technical arrangements are regulated by the Regional Government. Restaurants/restaurants, cafes located in closed buildings/shops, both in separate locations and in shopping centers/malls, are permitted to receive dine-in with a maximum of 50 percent of the dining capacity and time for visitors to eat. a maximum of 60 minutes, must use the Pedulilindungii application to screen all visitors and employees with subsequent technical arrangements regulated by the Regional Government. Restaurants/restaurants, cafes with service areas in open spaces are allowed to open with strict health protocols until 21.00 local time with a maximum capacity of 50 percent. The maximum meal time is 60 minutes, it is mandatory to use the Pedulilindungii application to screen all visitors and employees with technical arrangements regulated by the Regional Government.
- 11) Activities at shopping centers/malls/trade centers are opened with a maximum capacity of 50 percent up to 21.00 local time with due observance of the provisions of number 6 and 10 of the second point, and must use the Pedulilindungii application.
- 12) The implementation of construction activities for public infrastructure and private construction (construction sites and project sites) operates 100 percent by implementing stricter health protocols.
- 13) Places of worship (mosques, prayer rooms, churches, temples, temples, and pagodas as well as other places that function as places of worship), can hold congregational worship/religious activities during the implementation period of PPKM Level 2 with a maximum of 75 percent capacity or 75 people by implementing more stringent health protocols and pay attention to technical provisions from the Ministry of Religion.
- 14) Public facilities (public areas, public parks, public tourist attractions and other public areas) are allowed to open with a maximum capacity of 25 percent by implementing stricter health protocols and using the Pedulilindungii application.
- 15) Art, culture, sports and social activities (locations of art, culture, sports facilities and social activities that can cause crowds and crowds) are allowed to open with a maximum capacity of 50 percent by implementing stricter health protocols and using the Pedulilindungii application.
- 16) Public transportation (public transportation, mass transportation, taxis (conventional and online) and rental/rental vehicles) is enforced with a maximum capacity setting of 100 percent by implementing stricter health protocols;
- 17) The wedding reception can be held with a maximum of 50 invitations and does not hold a meal on the spot.
- 18) Domestic travelers who use private cars, motorbikes and long-distance public transportation (airplanes, buses, ships and trains) must: Show a vaccine card (at least the first dose of vaccination). Shows PCR H -2 for aircraft and Antigen (H -1) for modes of transportation of private cars, motorcycles, buses, trains and ships. Vaccine, PCR, and antigen card provisions only apply to arrivals and departures from and to Java and Bali and do not apply to transportation within the agglomeration area, for example for the Jabodetabek area. For travel by plane between cities or regencies within Java-Bali, it can

show a negative result of antigen (H-1) provided that the second dose of vaccination has been obtained, and a negative result of PCR H-2 if you have just received dose 1 of vaccine.

- 19) The implementation of PPKM at the RT/RW, village/kelurahan and sub-district levels will continue to be implemented by activating the Poskos at each level by looking at the zoning criteria for regional control.

PPKM Level 2

- 1) The implementation of learning in education units can be carried out through limited face-to-face learning and/or distance learning based on the Joint Decree of the Minister of Education and Culture, Minister of Religion, Minister of Health and Minister of Home Affairs Number 03/KB/2021, Number 384 of 2021, Number HK.01.08/MENKES/4242/2021, Number 440-717 of 2021 concerning Guidelines for the Implementation of Learning during the Pandemic Coronavirus Disease 2019 (Covid-19) and for educational units that carry out face-to-face learning is limited to a maximum capacity of 50 percent, except for : SDLB, MILB, SMPLB, SMLB, and MALB a maximum of 62 percent to 100 percent by maintaining a minimum distance of 1.5 m and a maximum of 5 students per class. PAUD is a maximum of 33 percent by maintaining a minimum distance of 1.5m and a maximum of 5 students per class.
- 2) Implementation of activities in the non-essential sector applies 50 percent Work From Office (WFO) for employees who have been vaccinated.
- 3) Implementation of activities in essential sectors such as: Finance and banking only covers insurance, banks, pawnshops, futures exchanges, pension funds, and financial institutions (which are oriented to physical services with customers) can operate with a maximum capacity of 75 percent of staff for related locations with services to the community, and 50 percent for office administration services to support operations. Capital market (which is service-oriented with customers and the operation of the capital market is running well), information and communication technology includes cellular operators, data centers, internet, postal services, media related to the dissemination of information to the public, non-quarantine handling hotels can operate at maximum capacity 75 percent of staff. Export-oriented and supporting industries where the company must show proof of sample documents for Export Declaration of Goods (PEB) for the last 12 months or other documents showing export plans and are required to have an Operational Permit and Mobility of Industrial Activities (IOMKI) with due regard to technical arrangements from the Ministry of Industry can only operate with shift arrangements with a maximum capacity of 75 percent of staff for each shift only in production facilities/factories, as well as 50 percent for office administration services to support operations, by implementing health protocols, and are required to use the Care Protect application starting September 7, 2021, entry and exit arrangements go home, and eat employees not at the same time
- 4) Essential sectors in the government sector that provide public services that cannot be delayed are enforced 50 percent) maximum of WFO staff with strict health protocols.
- 5) Implementation of activities in critical sectors such as: Health, security and order can operate 100 percent of the staff without any exceptions. Disaster management, energy, logistics, transportation and distribution, especially for the community's basic needs, food and beverages and their supports, including for livestock/pets, fertilizers and petrochemicals, cement and building materials, national vital objects, national strategic projects, construction (public infrastructure) , basic utilities (electricity, water and waste management) can operate with a maximum of 100 percent of staff, only at production/construction facilities/services to the community and for office administration

services to support operations, a maximum of 50 percent of staff is applied. Companies that are included in the energy, logistics, transportation and distribution sectors, especially for the community's basic needs, food and beverages and their supports, including for livestock/pets, fertilizers and petrochemicals, cement and building materials, construction (public infrastructure), basic utilities (electricity), water and waste management) are required to use the Pedulilindungi application starting September 7, 2021 to screen all employees and visitors who enter production/construction/service facilities and office administration areas. Companies that are included in the disaster management sector are required to obtain a recommendation from the technical ministry of sector guidance before they can gain access to use the Pedulilindungi application.

- 6) For supermarkets, traditional markets, grocery stores and supermarkets that sell daily necessities, operating hours are limited to 21.00 local time with a capacity of 75 percent of visitors.
- 7) For pharmacies and drug stores can be open for 24 hours.
- 8) People's markets that sell non-daily necessities can operate with a maximum capacity of 75 percent and operating hours until 18.00 local time.
- 9) Street vendors, grocery stores, voucher agents/outlets, barbershops/barbershops, laundries, hawkers, small workshops, vehicle washes, etc. are allowed to open with strict health protocols until 21.00 local time which is regulated technically regulated by the Regional Government.
- 10) Implementation of eating/drinking activities in public places: Food stalls/warteg, street vendors, hawker stalls and the like are allowed to open with strict health protocols until 21.00 local time with a maximum of 50 percent of visitors eating food capacity and a maximum meal time of 30 minutes which technical arrangements are regulated by the Regional Government. Restaurants/restaurants, cafes with locations located in closed buildings/shops, both in separate locations and those located in shopping centers/malls, are permitted to receive dine-in with a maximum of 50 percent of visitors eating from the technically regulated capacity. The following is regulated by the Regional Government. Restaurants/restaurants, cafes with service areas in open spaces are allowed to open with strict health protocols until 21.00 local time with a maximum capacity of 50 percent and a maximum meal time of 30 minutes which technical arrangements are regulated by the Regional Government.
- 11) Activities at shopping centers/malls/trade centers are opened with a maximum capacity of 50 percent) until 21.00 local time with due observance of the provisions in number 6 and 10 of the second point, and must use the Pedulilindungi application.
- 12) The implementation of construction activities for public infrastructure and private construction (construction sites and project sites) operates 100 percent by implementing stricter health protocols.
- 13) Places of worship (mosques, prayer rooms, churches, temples, temples, and pagodas as well as other places that function as places of worship), can hold congregational worship/religious activities during the implementation period of PPKM Level 2 with a maximum of 75 percent capacity or 75 people by implementing more stringent health protocols and pay attention to technical provisions from the Ministry of Religion.
- 14) Public facilities (public areas, public parks, public tourist attractions and other public areas) are allowed to open with a maximum capacity of 25 percent by implementing stricter health protocols and using the Pedulilindungi application.
- 15) Art, culture, sports and social activities (locations of art, culture, sports facilities and social activities that can cause crowds and crowds) are allowed to open with a maximum capacity of 50 percent by implementing stricter health protocols and using the Pedulilindungi application.

- 16) Public transportation (public vehicles, mass transportation, taxis (conventional and online) and rental/rental vehicles) is enforced with a maximum capacity setting of 100 percent by implementing stricter health protocols.
- 17) The wedding reception can be held with a maximum of 50 invitations and does not hold a meal on the spot.
- 18) Domestic travelers who use private cars, motorbikes and long-distance public transportation (airplanes, buses, ships and trains) must: Show a vaccine card (at least the first dose of vaccination). Shows PCR H -2 for aircraft and Antigen (H -1) for modes of transportation of private cars, motorcycles, buses, trains and ships. Vaccine, PCR and antigen card provisions only apply to arrivals and departures from and to Java and Bali and do not apply to transportation within the agglomeration area for example for the Jabodetabek area. For travel by plane between cities or regencies within Java-Bali, it can show a negative antigen (H-1) result provided that the second dose of vaccination has been obtained, and a negative H-2 PCR result if you have just received dose 1 vaccine.
- 19) Keep wearing masks correctly and consistently when carrying out activities outside the home and it is not allowed to use a face shield without wearing a mask.
- 20) The implementation of PPKM at the RT/RW, Village/Kelurahan and Sub-district levels will continue to be implemented by activating Command Posts at each level by looking at the zoning criteria for regional control.

PPKM level 1

- 1) Employees in the non-essential sector can work from the office (Work from Office or WFO) with a capacity of 75 percent. The condition is that employees have been vaccinated and are required to use the Pedulilindungi application at the entrance and exit of the workplace.
- 2) In the Essential Sector: The financial and banking sector can operate with a maximum capacity of 100 percent of staff for locations related to public services and 75 percent of staff for office administration services to support operations.2. The capital market sector, information and communication technology, and non-quarantine handling hotels can operate with a maximum capacity of 100 percent of staff. 3. The export-oriented and supporting industrial sector can operate with shift arrangements with the following details: Maximum capacity of 100 percent of staff for each shift in production facilities or factories, Maximum capacity of 75 percent for office administration services to support operations, Using the Pedulilindungi application for incoming arrangements and go home.
- 3) In Critical Sector: Critical sector of health, and security and order is allowed to operate 100 percent.. Critical sector of disaster management; energy; logistics, transportation, and distribution; food and Drink; fertilizers and petrochemicals; cement and building materials; national vital object; national strategic projects; construction; and basic utilities are allowed to operate with 100 percent staff, but only in production, construction and service facilities. Meanwhile, office administration services to support operations may operate at a maximum of 75 percent staff. 3. Specifically for the energy critical sector; logistics, transportation, and distribution; food and Drink; fertilizers and petrochemicals; cement and building materials; construction (public infrastructure); and basic utilities (electricity, water and waste management) are required to use the Peduli Protect application to screen employees and visitors. The implementation of construction activities for public infrastructure and private construction (construction sites and project sites) can operate 100 percent by implementing strict health protocols. Shopping centers (malls) can operate with a maximum capacity of 75 percent with the following details: Operational hours until 22:00 local time, Pedulilindungi application must be used to screen mall visitors and employees, Visitors under 12 years of age are allowed to enter

provided they are accompanied parents, supermarkets or hypermarkets in malls can operate with a maximum capacity of 75 percent, restaurants in malls are allowed to serve dine-in with a maximum capacity of 75 percent and a maximum meal time of 60 minutes.

- 4) Rules for domestic travelers who use private cars, motorbikes, and long-distance public transportation (planes, buses, ships, and trains). Arrivals and departures from and to Java-Bali (Not valid for transportation within agglomerated areas such as Jabodetabek): Show a vaccine card for at least the first dose. Shows negative PCR results at a maximum of H-2 before departure for airplane users and Antigen a maximum of H-1 before departure for users of private cars, motorcycles, buses, ships, and trains. People who travel domestically between cities or regencies within Java-Bali using planes, don't forget to show a negative antigen result a maximum of H-1 before departure. This applies if you have received a second dose of vaccination. Meanwhile, people who have just received the first dose of vaccination can show negative PCR results for a maximum of H-2 before departure.
- 5) Arts, culture, sports, and social activities are allowed to open with a maximum capacity of 75 percent and apply strict health protocols.
- 6) Meanwhile, the wedding reception can be held with a maximum of 50 percent of the room capacity.
- 7) Traditional markets and people's markets that sell non-daily necessities can operate with a maximum capacity of 75 percent. For street vendors, grocery stores, voucher agents, barbershops, laundry, hawkers, small workshops, car washes, and others of the like are allowed to open with health protocols which are technically regulated by the Regional Government.

METHODOLOGY

Procedure and sample

This research was conducted through literature studies with various supporting sources and also sources from the internet. Through several sources, it is hoped that this research will become an in-depth study material for those who want to deepen the problem of the development of the Covid-19 pandemic rate that is adapted to the characteristic conditions of a country or region. The data in this study uses data based on 7DMA (28 August-3 September 2021) which is accessed from the data visualization of the Pusdatin, Ministry of Health and resilience ppt as of September 3, 2021 (data as of September 2, 2021).

PPKM level 1

To apply PPKM Level 1, districts must have less than 20 confirmed cases per 100,000 population per week. Meanwhile, hospitalization must be at a rate of less than 5 per 100,000 population per week and less than 1 per 100,000 population per week for mortality.

PPKM level 2

To implement PPKM Level 2, districts have 20 to less than 50 confirmed cases per 100,000 population per week. Meanwhile, hospitalization must be at 5 to less than 10 per 100,000 population per week and 1 to less than 2 per 100,000 population per week for mortality.

PPKM level 3

To implement PPKM Level 3, regions have 50-150 confirmed cases per 100,000 population per week. Meanwhile, hospitalization must be at 10-30 from 10 per 100,000 population per week and 2-5 per 100,000 population per week for mortality.

PPKM level 4

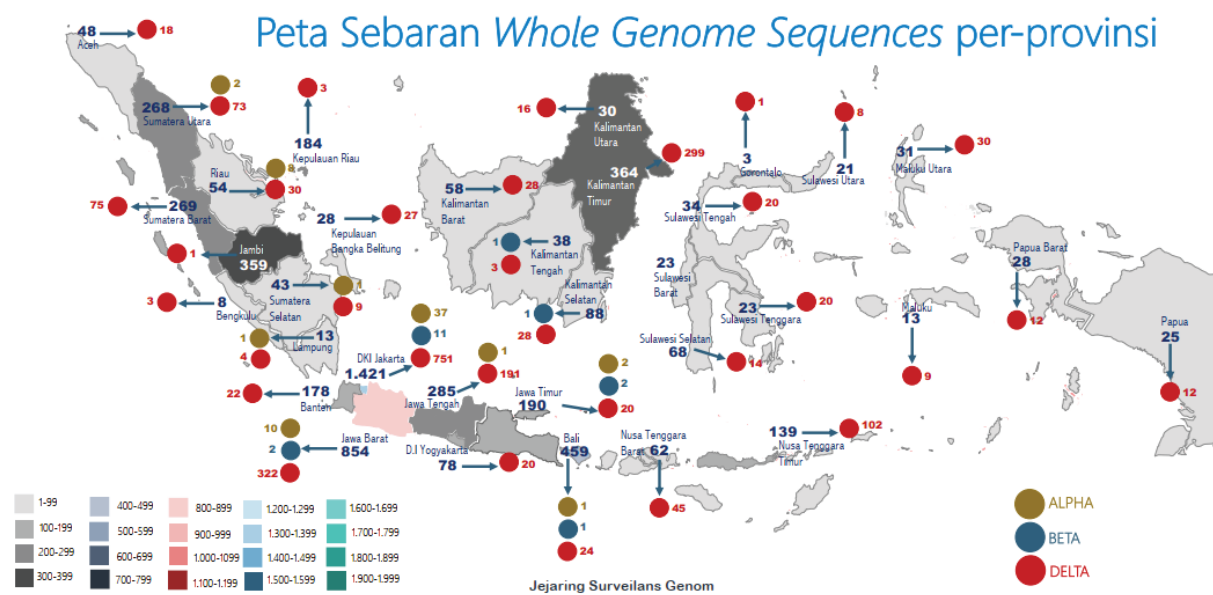
To implement PPKM Level 4, regions have more than 150 confirmed cases per 100,000 population per week. Meanwhile, hospitalization must be at a rate of more than 30 per 100,000 population per week and more than 5 per 100,000 population per week for mortality.

RESULTS AND DISCUSSION

First stage

Nationally, as of September 3, 2021, there were 4,116,890 confirmed cases, with a case incidence rate of 24.01/100,000 population per week. The total number of deaths was recorded at 134,930 cases, with an incidence rate of 1.53/100,000 population per week. The positivity rate of 8.42 per week as an indicator of community transmission continues to show improvement in the situation on the ground. The percentage of bed occupancy (%BOR) of COVID-19 isolation in all provinces is at an adequate level (<60%/week). WHO has designated Mu as the newest Variant and is the fifth Variant of Interest that is estimated to be resistant to vaccines, although further studies are still needed to confirm this. Mu was first discovered in Colombia in January 2021 and has spread sporadically in South America and Europe. This new variant was responsible for 39% and 13% of infections occurring in Colombia and Ecuador, respectively.

The results of the sequencing can be identified Variant of Concern (VoC) Delta as much as 96.3% (26/27) of cases sampled in August 2021. None addition of cases of VoC Alpha, Beta, and Variant B.1.466.2 in the twentieth week 35. Sequence distribution, VOCs from each province at week 35 can be seen in Figure 1 and table 1. The Delta variant dominates in the provinces of Jakarta, North Sumatra, West Sumatra, West Java, Central Java, East Kalimantan and Nusa Tenggara East (Figure 1).



Source: Surveillance Network genome

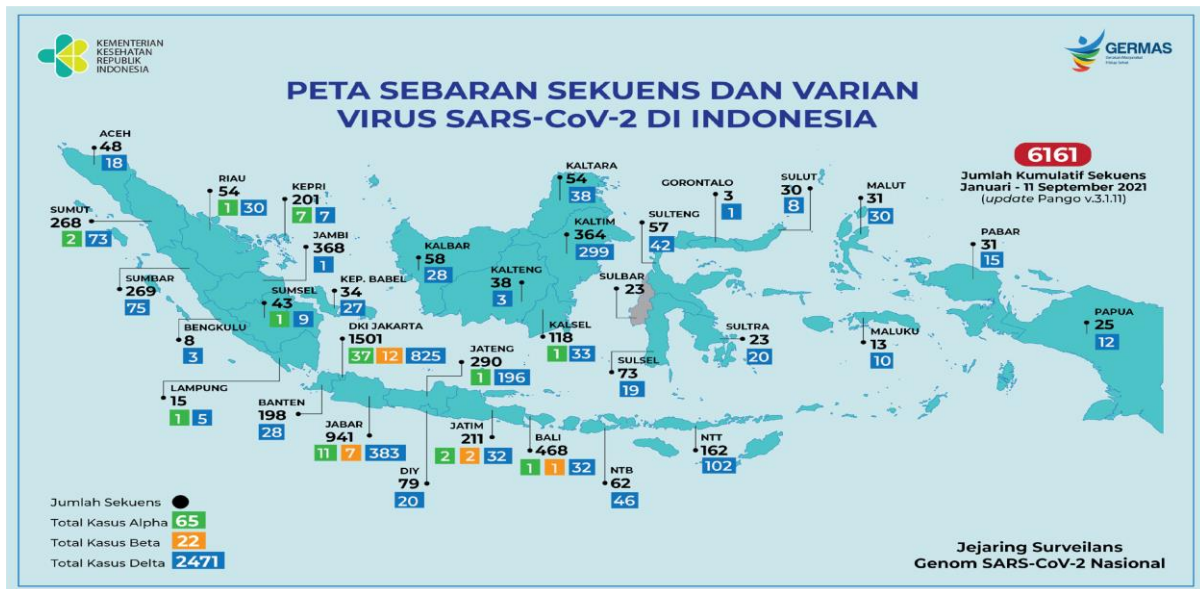
FIGURE 1. Distribution of SARS-CoV-2 and VoC virus sequences in Indonesia at week 35.

Second stage

Nationally, as of September 9, 2021, there were 4,116,890 confirmed cases, with a case incidence rate of 16.26/100,000 population per week. The total number of deaths was recorded at 134,930 cases, with an incidence rate of 1.38/100,000 population per week. Positivity rate 4.86 per week. Community transmission indicators continue to show improvement in the situation on the ground. The percentage of bed occupancy (%BOR) of COVID isolation in all provinces is at an adequate level (<60%/week).

The results of the sequencing can identify Variant of Concern (VoC) Delta as many as 96.3% (26/27) cases sampled in August 2021. There were no additional cases of VoC Alpha, Beta, or Variant B.1,466.2 in the week-to-week 35. The distribution of sequences, VOCs from each

province at week 35 can be seen in Figure 1 and table 1. The Delta variant dominates in the provinces of Jakarta, North Sumatra, West Sumatra, West Java, Central Java, East Kalimantan, and East Nusa Tenggara (Figure 2)



Source: Genome Surveillance Network.

FIGURE 2. Distribution of SARS-CoV-2 and VoC virus sequences in Indonesia at 36 weeks.

Third stage

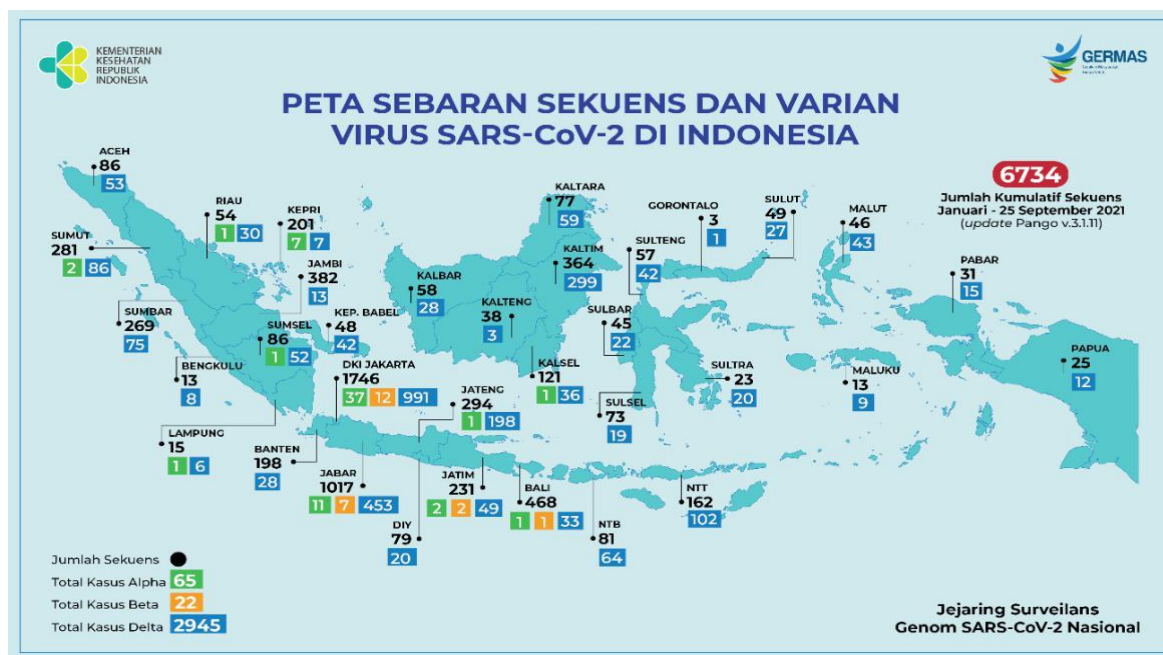
Nationally, as of September 24, 2021, there were 4,204,116 confirmed cases, with a case incidence rate of 7.44/100,000 population per week, thus confirming cases decreased by 27.6% from the previous week. The total number of deaths was recorded at 141,258 cases, with an incidence rate of 0.44/100,000 population per week, a positivity rate of 1.54 per week. The community transmission indicator continues to show improvement in the situation on the ground, and has remained at level 1 for more than 2 weeks.

Percentage of bed occupancy (% BOR) of COVID isolation in Indonesia as of September 24 was 8.4% of the total isolation TT of 98,281. All provinces are still at adequate level (<60%/week).

In the 38th week of epidemiology, sequencing of the SARS-CoV-2 virus was carried out as many as 295 cases from 4 provinces, namely West Java, Jakarta, South Kalimantan, and South Sumatra. Sequencing was carried out at the Health Research and Development Agency (Balitbangkes), the Indonesian Research and Innovation Agency (BRIN) and the Indonesian Solidarity Genomics Laboratory (GSI).

The results of the sequencing can identify Variant of Concern (VoC) Delta in 76.3% (225/295) cases. No Alpha and Beta VoC were found, while the variant that became further of alert monitoring B.1.466.2 was 14.6% (43/295) cases. The distribution of sequences and VOCs from each province can be seen in Figure 3.

Based on the lineage distribution of the SARS-CoV-2 virus circulating in Indonesia (figure 8), the Delta variant is a sub-variant AY. 23 and AY.24 increased in March 2021 and dominated since June 2021. Variant Delta or B.1.617.2, subject to reclassification of sub-variants, AY.1 to AY.34. The reclassification aims to assist micro-epidemiology and is not based on the type of mutation that is clinically significant. In the 38th epidemiological week, 75 cases had a history of travel from abroad to Saudi Arabia, Malaysia, Papua New Guinea, Fiji, Turkey, Hong Kong, and Taiwan in samples taken in August and September.



Source: Genome Surveillance Network

FIGURE 3. Distribution of SARS-CoV-2 and VoC virus sequences in Indonesia at week 381

DISCUSSION

The implementation of PPKM levels 1-4 carried out in Indonesia which began in stage 1 was on 28 August – 3 September 2021 which will take place in Java and Bali as well as throughout Indonesia. At the beginning of the implementation of PPKM, there were many who were against it and also many who supported it. So the government carried out socialization through social media and also through field trips to the community by involving the ulama, TNI and Polri so that gradually the community accepted. Then PPKM levels 1-4 continued on 3 -9 September 2021, but it was also found that many violations were committed by entrepreneurs and individuals. However, with the enforcement of discipline, those who violate are given sanctions according to the rules and finally gradually the violations begin to decrease. Meanwhile, for implementing PPKM levels 1-4 from 17-23 September 2021, the government will continue the PPKM to reduce the number of people who are positively exposed to COVID-19, reduce the number of deaths and increase recovery by continuing to campaign for health protocols for wearing masks, washing hands and maintaining distance. Finally there was a decrease in the number of those who were positively exposed to Covid-19, the number of deaths decreased and the number of recovered people increased. Also, the government continues to vaccinate nationally to reduce exposure to COVID-19 positive

Managerial implications

Implementation of PPKM level 1-4 on August 28 - September 3, 2021

The first stage of PPKM level 1-4 implementation, on August 28 – September 3, 2021, was initially followed by most of the 450 city districts in Pulau Java and Bali. However, further developments were also followed outside Java and Bali. Due to lack of socialization or because the community is saturated, there are several violations. If found such as pelanggaran committed by individuals, the sanctions, namely the Criminal Code Articles 212 to 218 in the form of imprisonment for a maximum of one year and four months or a maximum fine of Rp.

400,000. If someone hinders the prevention of an infectious disease outbreak with a maximum penalty of 1 year and/or a maximum fine of Rp. 1,000,000. Meanwhile, the regional head who violates the law will be subject to sanctions through Articles 68 to 78 of Law No. 23 of 2014 concerning Regional Government. The sanction can be in the form of a written warning or if it continues to be repeated, it can be temporarily suspended for 3 months. Meanwhile, business actors or companies that violate the capacity, quota, and operational time can be subject to administrative sanctions until closure.

This sanction is given as a deterrent effect so that it is hoped that there will be no more violations. The existence of sanctions is also a form of social responsibility so that it is hoped that it will not violate it again. In addition, sanctions are given so that no one wants to try this level 4 PPKM violation. The firm sanctions given will set a good precedent so that it is hoped that the PPKM level can run well without any protests or violations. Overall, it can be an education to the public that rules must be enforced so that the transmission of COVID-19 can also decrease.

With the sanctions, the implementation of PPKM levels 1-4 is expected to run well. However, violations of the implementation of PPKM level 4 were found in Jakarta, there were those who opened such as restaurant "A" in Kemang, South Jakarta during a raid on prokes enforcement during the pandemic (4/9/2021). It was also found at the Bar "A" and Coffee place of business in the Cilandak area (12/9/2021). With the sanction of closing while waiting for Jakarta to be free of covid 19. Several cases of customers implementing level 4 PPKM in Jakarta that went viral on social media were violations that carried out by business actors. Both business actors were given strict sanctions from the government. With strict sanctions for those who violate it, other business actors will think again if they violate PPKM level 4. This is a form of learning so that business actors who will violate will think again. As for in detail at PPKM level 1-4, it is known that:

1) Active Cases of Covid-19

The number of active cases is currently down sharply as much as 104,607 or down almost 12 times compared to the peak of active cases in the capital which occurred on July 16, 2021. At that time, the number of active cases reached 113,138, with details of 88,295 Covid-19 patients undergoing isolation and 24,843 Covid-19 patients being treated.

2) Death Rate

Until now, the total number of positive Covid-19 patients who died was 13,173 people with a death rate of 1.6 percent of the total number of positive confirmed cases of Covid-19 in Jakarta as many as 845,931 cases. The death rate in Jakarta is far from the national death rate at 3.1 percent.

3) Daily Covid-19 Positive Cases

In the week of August 2-8, the total daily addition of positive cases was 14,145 cases or the average addition of positive cases in a day was 2,021 cases. Then, the week of July 26-August 1, the number of additional positive cases was 25,081 cases or an average of 3,583 cases in a day. From these data, the number of additional positive cases must continue to decline.

Implementation of PPKM level 1-4 on 3 -9 September 2021

The implementation of PPKM levels 1-4 in the second stage will be held on 3 -9 September 2021, which will be followed by Java and Bali as well as outside Java and Bali. In the implementation of the second stage, public awareness began to grow as indicated by the decreasing number of violations and the government also promoted a large-scale vaccination program for the community. All elements of the government starting from the TNI, Polri, BUMN, private parties carry out vaccinations in the field, malls, government offices, campuses, markets, health centers, soccer fields. The vaccines used are various, namely

Sinovac, Astra Zeneca, Pfizer moderna for the community and the government's target is expected to reach 2,000,000 per day. In addition, to protect health workers, a 3rd dose of vaccine is carried out, so that it is hoped that health workers will not be infected from Covid-19 patients. Vaccination is free of charge or free, people only bring ID cards and family cards.

The results of the second stage of PPKM implementation are:

1) In detail, active cases, including people who are still being treated/isolated, have decreased to 249 cases, amounting to 7,753 or equivalent to 0.9 percent of the total active cases in Indonesia. Regarding recovered patients, the percentage increased by 96 percent (828,838), which increased by 713 people and 10 people died, bringing a total of 13,252 deaths.

2) Vaccination Achievements

The DKI Jakarta Provincial Government (Pemprov) is aggressively holding vaccination centers in various places and collaborating with many parties to achieve the target of herd immunity. As of August 29, 2021, the percentage of total dose 1 that has been received by Jakarta residents has reached 107.7 percent, or to be more precise, had a total of 9,629,886 injections, which is an increase of 7,185 injections. As for dose 2, it has now reached 5,507,262 injections given with a percentage of 61.6 percent. From the previous day's data it means that dose 2 has increased by 16,371 yesterday.

3) Availability of Beds in Hospitals

For the Negative Pressure ICU with Ventilator, 152 beds are available or 64 percent of the 238 bed capacity. Meanwhile, the ICU without a ventilator has the availability of 88 beds from a capacity of 160 or equivalent to 55 percent. Regarding non-negative pressure ICU with ventilator available 36 of 62 beds (58 percent). And ICU without negative pressure without a ventilator is available 51 or about 73 percent of the availability of 70 beds.

Implementation of PPKM level 1-4 on September 17-23, 2021

The implementation of PPKM level 104 in the third stage which takes place on 17-23 September 2021, the level of community violations, entrepreneurs tend to decrease. This is indicated by the absence of violations. People are starting to realize that COVID-19 is very dangerous, so it is necessary to use health protocols, namely wearing masks, washing hands with soap and keeping a distance. With the help of the TNI, Polri and government officials, they patrol all corners of the city in each province simultaneously so that people are increasingly aware that it is best to keep from contracting COVID-19. Also an increasingly comprehensive vaccination program in the territory of Indonesia so that it has more Health Resilience, resilience, or National Immunity against COVID-19

With the increasingly stringent rules for implementing PPKM levels 1-4, practically all people obey so that there is a decrease in both those who are positively exposed to COVID-19, the number of deaths and the number of recoveries is increasing. This can be supported by successful achievements, including:

1) Case and death situations

The number of new cases in almost all provinces showed a decrease, except for some provinces such as Maluku Province which experienced an increase in cases of 71.1% (27 new cases), West Papua by 47.1% (33 new cases) and Papua by 1.1% (3 new cases) from the previous week. The decrease in death cases also occurred in most provinces, although there were still some provinces experiencing an increase in deaths. There are still provinces experiencing an increase in deaths, including Aceh province experiencing an increase in mortality by 3%, West Sulawesi Province by 20%. In fact, there are 3 provinces experiencing a fairly high spike in deaths, namely Central Kalimantan (61.5%), Southeast Sulawesi (133.3%) and Gorontalo (125%).

2) Vaccination situation

National COVID-19 vaccination coverage has reached 40.82% for the first dose. Although coverage is starting to increase in each province, only 4 provinces (DKI Jakarta, Bali, Riau Islands, and DIY) have coverage above 50%. And for the Lampung province vaccination coverage has not shown a significant increase, it is still below 20%.

3) Testing and tracing situations

34 provinces show an improving trend in testing, this is indicated by an adequate positivity rate (<5% per week). Only 4 provinces with positivity rates above 5% are Gorontalo (9.37%), North Kalimantan (6.69%), Bangka Belitung (6.09%) and Central Sulawesi (5.93%). When viewed from the number of Covid testing laboratories in the four provinces, it is still very small. Gorontalo with 6 regencies/cities only has 1 network lab. North Kalimantan with 5 regencies has 5 network labs, Bangka Belitung with 7 regencies has 5 network labs and Central Sulawesi with 13 regencies only has 5 network labs. In the tracing indicator, provinces that are at an adequate level are East Java and Lampung. 18 provinces are at limited level (<5/week) and 14 provinces are at moderate level (5 – 9/week).

CONCLUSION

PPKM levels 1-4 which were carried out in Indonesia from the first stage (28 August-3 September, the second stage (3-9 September 2021) to the third stage (17-23 September 2021) were able to reduce the number of positive COVID-19 exposures, were able to reduce the level of This means that by having a fairly high level of difficulty because the country of Indonesia has thousands of islands, the number 4 population in the world, has many cultures that are able to overcome the covid-19 pandemic well and successfully. PPKM level 1-4 can be used as a model to reduce the number of the covid-19 pandemic.

LIMITATIONS AND FUTURE RESEARCH DIRECTIONS

The limitation of this research is that literature study research is not direct research, so data becomes very important for success in conducting research. The more accurate the data, the more successful the research and vice versa.

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