Pandemic Control Performance Measurement Indicators Covid-19: A Case Study of Urban Area – in Bandung

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Abstract. Since the Covid 19 Pandemic occurred in February 2020, the number of people infected, and the death toll tends to continue to increase even higher when the delta variant spreads from June to August 2021 including in Urban Area - Bandung City. In the future there will be more new variants of Covid 19 that have been appears, namely the Lambda variant. One of the strategies to deal with the pandemic, every RW is asked by the government to control the Covid 19 pandemic for its citizens each. This study has the aim of developing performance indicators for controlling the Covid 19 pandemic at the RW level, especially in Urban Area - Bandung City. To obtain indicators the performance of controlling the Covid 19 pandemic, first a study will be conducted literature that will produce the initial variables and indicators. Furthermore, a focus group discussion process is carried out with experts, the government, head of RW, community with input variables and early indicators the. From this FGD process, input will be obtained on the variables and these indicators as well as the addition or subtraction of indicators. Through the analysis process obtained the final indicators that became an evaluation tool Covid 19 control performance at the Urban Community Level. Control evaluation tool The Covid 19 pandemic has become a recommendation to the Bandung City Government to use in controlling the Covid 19 pandemic which is not yet known when ending. In addition, this tool can be used by the Government in other cities in Indonesia. This 2021 research study will answer the first question about What variables and indicators are suitable for me to use? evaluate the performance of controlling the Covid 19 pandemic at the urban area level? The second important research question is how to obtain the index the performance of controlling the Covid 19 pandemic at the urban area level? This second question will be answered in the following year's research.
Keywords: Covid19, Pandemic, Control Variable, Indicator

Introduction

This research focuses on the problem of the Covid 19 pandemic. Infectious diseases are always appeared regularly within a certain period and spread in various countries. Infectious diseases have taken a heavy toll. Spanish flu spread on 1918-1920 which resulted in the death toll of one million people, the Asian flu 1956-1958 with 2 million victims and the Hong Kong flu in 1968-1970 with the death toll of 1 million people. Another infectious disease is HIV/AIDS has spread from 1981 until now where the victims reach the number 36 million people. Apart from that, the SARS disease in 2002-2003 was caused by Coronavirus from China in a short time spread to 26 countries. Other viruses Flu Swine comes from the H1N1 virus from Mexico in 2009 has infected about 1.4 billion people with a death toll of 500 thousand people. Ebola virus from Sudan and Congo in 2013-2016 resulted in the number of infected people as much as 28,600 people of which 11,325 people died (Research and Development of the Indonesian Ministry of Health, June 2020).

In answering this challenge, researchers have succeeded in producing a vaccine Covid 19 where many residents of various countries have received vaccinations including in Indonesia. The Covid 19 Omicron pandemic is still ongoing This research was conducted, and it is not known when it will end. Besides the pandemic Covid 19 has caused serious problems in various lives society globally and in Indonesia.

Global financial markets are experiencing uncertainty that is increasing with the spread of the Covid-19 delta variant in a number of countries (Bank Indonesia, July 2021).
In Indonesia, the development of a very high number of infections occurred last month from June to August 2021 with the entry of the Covid 19 variant delta. On position September 2021 has decreased drastically. Figure 1 shows the Dashboard COVID-19 cases in Indonesia: 2020-03-02 up to the third week of September 2021. The Covid 19 pandemic has resulted in major disruptions to various aspects of people's lives such as the economy, tourism, education, and others.

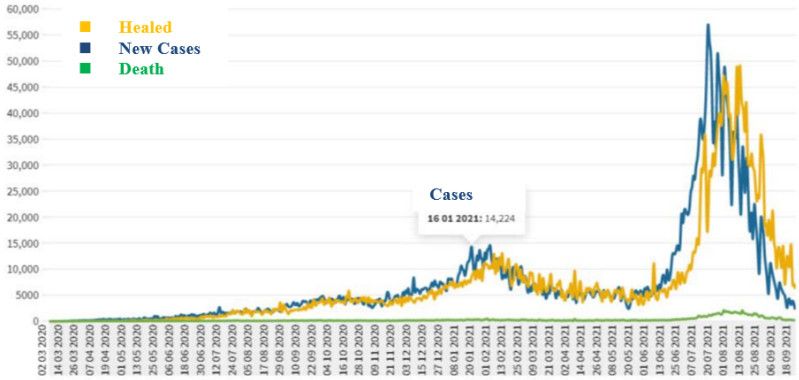

Figure 1. COVID-19 Cases in Indonesia (Ministry of Health Indonesia, 2021).

The object of this research is the development of variables and measurement indicators the performance of managing the Covid 19 pandemic at the RW level. In this research will conduct a literature review as well as the FGD process which is part of the process data collection. The research subjects are a group of experts, researchers, and observers; public; implementers and policy makers for pandemic management at the urban level in Bandung area.
According to Robins & Coulter (2012) there are four management functions namely planning (planning), organizing (organizing), leading (leading), and control (controlling). The two management experts explained that control is the process of monitoring activities to be sure that these activities can be completed in accordance with what has been planned. The control process consists of a three-step process consisting of Step 1. Measurement of actual performance, Step 2. Compare actual performance with standards, then Step 3. Take managerial action to make corrections or corrections to deviations or to determine that standard has not been met or implemented.

Figure 2. Control Process (Stephen P. Robbins & Mary Coulter, 2012)

Methods
This section discusses the processes carried out during the research, starting with reviewing the literature, determining variables and indicators obtained from the literature review, conducting FGD processes and generating performance measurements for controlling the COVID-19 pandemic.

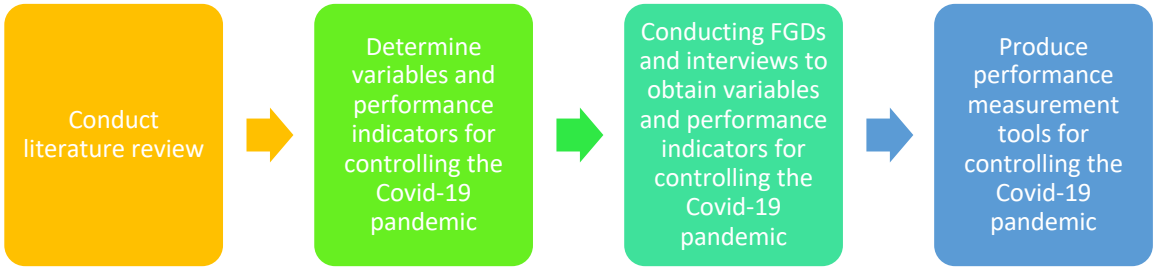

Figure 3. Research Flow

1.7. Literature Review

In the literature review, various articles that have been published in public from reputable seminars, conferences, journals, and websites as well Government official sources related to handling aspects communicable diseases including the Covid 19 pandemic.

1.8. Determine variables and performance indicator from literature review

From several research paper, this study find some indicators relating to the handling of the Covid 19 pandemic. Beaute et al (2021) stated that since the start of the pandemic, the way to Knowing and controlling the spread of Covid 19 is using testing and contact tracing. Shokoohi et al (2020) convey the experiences of countries in East Asia such as Vietnam, Korea, Hong Kong and Taiwan in handling the Covid 19 pandemic and producing several variables to control the covid-19 pandemic. Saeful (2021) who researched the handling of the Covid 19 pandemic in Tasikmalaya West Java – Indonesia, stated that for the control and management of the Covid 19 pandemic in urban levels need to form a Covid 19 pandemic task force, data collection, supervision in urban level, controlling the movement of residents, educating residents, spraying disinfectants, providing masks, hand washing facilities with soap as well outreach & education. Other researcher, Komalasari & Fudsy (2021) stated that, Information technology has an influential role in the recovery phase Covid-19 as many people were stay at home during this phase. As summary, the following table is the variable and performance indicator to control Covid-19 Pandemic.

Table 1. Literature Review

No	Researcher	Variable & Indicators
1	Beaute et al (2021)	Testing & Tracing Contact
		Test positivity
2	Mario Coccia (2021)	The Index r (as resilience)
		Index p (as preparedness and prevention)
3	Shokoohi et al (2020)	Speed of recognizing the threat of COVID-19
		Communication
		Rapid response to a pandemic
		Rapid implementation of public health responses
		Massive patient tracing
		Quarantine of the suspected cases
		Surveillance programs
4	Ministry of Health – Indonesia (2020)	Epidemiology
		Health System
		Surveillance
5	Saeful (2021)	Socialization & Education
		Organization
		Management
		Logistics
6	Komalasari & Fudsy (2021)	Information Technology / Communication
7	Barret et al (2020)	Surveillance

No	Researcher	Variable & Indicators
		Management
		Logistics

1.9. Focus Group Discussion (FGD)

According to Mishra (2016) Focus Group is a type of in-depth interview accomplished in a group, whose meetings present characteristics defined with respect to the proposal, size, composition, and interview procedures. The focus or object of analysis is the interaction inside the group. A focus group discussion is a form of group interviewing in which a small group – usually 10 to 12 people – is led by a moderator (interviewer) in a loosely structured discussion of various topics of interest. The course of the discussion is usually planned in advance and most moderators rely on an outline, or moderator's guide, to ensure that all topics of interest are covered. This method is a good way to gather people from similar backgrounds or experiences to discuss a specific topic of interest.

The steps to conduct the FGD are as follows:

- Select participants for FGD activities,
- Explanation of the topic of discussion,
- Identify variables and performance indicators for pandemic control Covid 19 in urban level.

1.10. Data Coding

Data coding process is the process of organizing data in a way collect various pieces of information and write down certain categories in the limits (Rossman & Rallis, 2012). Implementation by pasting label on the data obtained, using the dimensions and indicators that have been determined. After identifying the themes during the coding process, the researcher creates a more complex analysis, namely linking themes in a series or develop the theme into a theoretical model (grounded theory). Researcher can make certain codes to describe all information, then conduct analysis with case studies. This coding will generate categories – categories into smaller ones which are generally the main results of the research.

Result and Discussion

This section discusses the control process the Covid 19 pandemic at the urban level and explaining what is meant by performance indicator for controlling the Covid 19 pandemic at the urban level. Discussion the other is regarding the variables and indicators of the results of the literature study that can be used at the urban level. Finally, the results of the literature study are used to find information by means of interviews and Focus Group Discussions.

1.11. Variables and Indicator from Literature Review

Variables and indicators of controlling the Covid 19 pandemic from the literature study results that can be used at the urban level is shown in the following table.

Table 2. Selected Variable and performance indicator to control Covid-19 Pandemic from several sources.

Source / Variable	Mins. Health (2020)	Beaute et al (2021)	Shokoohi et al (2020)	Saeful (2021)	Barret et al (2020)	Komalasari & Fudsy (2021)
Epidemic	V					
Health System	V					
Surveillance	V	V	V		V	
Communication			V	V		V
Logistics			V	V	V	
Management			V	V	V	

There are five variables that can be used to measure process performance control of the Covid 19 pandemic at the urban level, namely Epidemic, Health System, Surveillance, Communications, Logistics and Management. Epidemic variable shows the transmission rate of Covid 19 through the process of calculating the number of new confirmed cases namely the additional number of residents affected by Covid 19. Health System Variable Describes the extent to which standard handling procedures have been established Government (RI Ministry of Health/City Government) to urban residents affected by Covid 19. Meanwhile the Surveillance variable explains the extent to which survey activities can identify most cases and contacts in public.

The Communication Variable describes the extent to which educational activities and promotions for urban residents are carried out by the Task Force, making Task Force reports to Community Health Centres and Village Task Forces as well as the use of digital technology (eg Whatsapp, Facebook, SMS) in communication activities at the urban level. Variable Logistics shows the business of providing funds, logistical assistance (eg food, drinks, oxygen equipment and masks), provision of hand washing facilities and equipment in urban areas. Meanwhile Management Variables describes planning, organizing, monitoring and evaluation activities urban level and the Task Force including monitoring the movement of residents and guests from outside the region.

1.12. FGD Result

In the FGD process, there were 14 respondents from various elements in the urban environment. The criteria for selecting respondents were experts such as experienced doctors dealing with the Covid 19 pandemic, the Heads of residents in urban areas who handle it directly control of the Covid 19 pandemic, as well as Village officials who manage the problem the Covid-19 pandemic. The respondents and positions of respondents can be seen in Table 3.

Table 3. FGD Respondents

Groups	Kode	Position
Representative of residents	A1	Covid-19 Task Force Advisor
	A2	
	A3	
	A4	
Representative of residents	A5	Covid-19 Task Force Member
	A6	
	A7	

Groups	Kode	Position
	A8	
	A9	
	A10	
Village officials	A11	Covid 19 Task Force Field Team
	A12	
Doctors	A13	Covid-19 Task Force Member
	A14	

From these 14 respondents, FGD were run with 7 participants, A1, A2, A3, A4, A6, A11, and A13. These respondents already represent the component of the urban levels in the case study.

1.12.1. Summary of respondents' opinions about Covid-19 control variables.
Based on the results of the FGD, the researchers evaluated whether they still existed information needed to make improvements to variables and indicators when required by taking into account the ability of urban administrators as well as practical aspects of the field.

Table 4. Respondents opinions about Covid-19 control variables

Variable \ Respondent	A1	A2	A3	A4	A6	A11	A13	Percentage
Epidemic	X	X	V	V	V	X	V	58%
Health System	X	X	V	V	X	X	X	29%
Surveillance	X	X	V	V	X	X	V	43%
Communication	V	V	V	V	V	V	V	100%
Logistics	V	V	V	V	V	V	V	100%
Management	V	V	V	V	V	V	V	100%

Notes:
V = Respondents Agree
X = Respondents Disagree
\- = Respondents do not argue

Based on the table, Health System variable names are not approved by most respondents because their understanding is still too broad and is estimated to be lacking understood by many urban environment administrators. The respondent's suggestion is to change the name variable with Procedure or Process. Considering that this relates to steps for health services at the urban level, the name Procedure will be used. For the variable name Epidemic, it turns out that the number that agrees is more than the threshold number > 50%, so this variable name is still used. But for Surveillance that agreed only 43% so that the name of the variable needs to be adjusted to the FGD proposal, namely Survey. The other variables, namely Communication, Logistics and Management, all of them respondents are agree.

1.12.2. Summary of respondents' opinions about indicators of Covid-19 control
The next step is to carry out an analysis of the indicators for controlling Covid-19 where the results can be seen in Table.

Table 5. Respondents opinions about Covid-19 control indicator

Variable \ Respondent	A1	A2	A3	A4	A6	A11	A13	Percentage
Epidemic								
Decrease in new cases	X	X	V	X	V	X	V	43%
New case from contact list	X	X	V	X	V	X	V	43%
New cases are known to cluster	X	X	V	X	V	X	V	43%
Health System								
Covid 19 patient undergo standard procedures	V	V	V	V	V	V	V	100%
Non-Covid 19 patients' severe cases underwent standard procedures	V	V	V	V	V	V	V	100%
Surveillance								
New case report	X	X	V	V	X	X	V	43%
Progress report Covid 19 situation	X	X	V	V	X	X	V	43%
Strengthening surveillance in closed facilities	V	V	V	V	V	V	V	100%
Death surveillance in hospital and community	V	V	V	V	V	V	V	100%
The Covid 19 Task Force team is functioning well	X	X	X	X	V	V	V	43%
Easily identified new cases from contact tracing	V	V	X	X	V	V	X	57%
Direct Quarantine	V	V	V	V	V	V	V	100%
Information system for contact tracing	V	V	V	V	V	V	V	100%
Communication								
Education	X	X	X	V	V	X	X	43%
Reporting	V	V	V	V	V	V	V	100%
Social Media and Other information system	V	V	V	V	V	V	V	100%
Logistics								
Funding	V	V	V	V	V	V	V	100%
Mask	V	V	V	V	V	V	V	100%
Hand washing equipment	V	V	V	V	V	V	V	100%
Management								
Mask Usage Control	V	V	V	V	V	V	V	100%
Active role of Covid 19 Task Force	V	V	V	V	V	V	V	100%

From Table 5, the three Pandemic indicators have a rate of 43%, meaning below threshold. Respondents' suggestions to be replaced with indicators that are more practical for implemented in urban area, namely the number of residents who have been affected by Covid 19 and the possibility source of infection. Indicator 10. The Covid 19 fast action team is functioning well percentage of 43% and respondents suggested to adjust the words with Performance of the Covid 19 Task Force. On indicator 14. Education only respondents who agreed 43% and the suggestions need to be developed into health protocol education and education to increase endurance. In the FGD, the forum also made suggestions a new indicator, namely crowd control. Meanwhile other indicators having a number above the threshold means that the respondent agrees.

Conclusion

Based on the literature study, six variables and 22 performance indicators were obtained controlling the Covid 19 pandemic at the Urban Area level. In the process of in-depth interviews and Focused Group Discussion (FGD) finally obtained six variables and 18 indicators. Based on the FGD and interview processes, the respondents gave input so that the number of indicators is not too much, the terms are made simpler, avoid the calculation process that is too complicated so that it can be makes it difficult for urban area administrators to evaluate and complete data for evaluation and follow-up.

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