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Evaluation of Covid-19 vaccination in 2021 in nganjuk regency

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ARTICLE INFO

Article history:

Received Feb 23, 2024
Revised Feb 27, 2024
Accepted Feb 28, 2024

Keywords:

COVID-19
Management
Nganjuk District Health Service
Vaccination

ABSTRACT

Corona Virus Disease 2019 (COVID-19) is an infectious disease that has never been identified before in humans, in severe cases it can cause pneumonia, acute respiratory syndrome, kidney failure, and even death which has been declared a non-natural disaster as a public health emergency. The purpose of this study is to determine and evaluate the implementation of COVID-19 vaccination which includes planning needs, distribution, storage, recording and reporting, monitoring and overcoming adverse events after COVID-19 vaccination, and monitoring evaluation in accordance with the Minister of Health Regulation Number HK.01.07 / MENKES / 4638 / 2019. This research method uses observational research with a descriptive approach. This research is conducted to assess a program that is being or has been implemented. The results of this research are used to improve and/or refine the program or system. In managing the results of this evaluation research, simple statistical analysis is usually used. The implementation of COVID-19 vaccination in Nganjuk Regency includes planning needs, distribution, storage, recording and reporting, monitoring and overcoming adverse events after COVID-19 vaccination, as well as monitoring and evaluation in accordance with Minister of Health Regulation Number HK.01.07/MENKES/4638/2021. The evaluation of the implementation of COVID-19 vaccination in 2021 in Nganjuk District includes several components, namely planning, organizing, mobilizing, monitoring, and output. However, at the planning stage, the need for COVID-19 vaccination stocks is not in accordance with the achievement target. The distribution and storage of SOPs have been carried out well, SOPs are carried out with references in accordance with their respective technical instructions along with recording AEFI reporting and monitoring.

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INTRODUCTION

Corona Virus Disease2019 (COVID-19) is an infectious disease caused by Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2)(Park, 2020), a new type of corona virus that has never been previously identified in humans which in severe cases can cause pneumonia, acute respiratory syndrome, kidney failure, even death which has been declared a non-natural disaster in the form of an epidemic or pandemic or as a public health emergency (Kemenkes RI, 2021).

According to (WHO, 2020) announced that COVID-19 has become a pandemic in the world. The number of COVID-19 cases is increasing over time and requires attention, where the incidence of infection and mortality due to COVID-19 is the highest in Southeast Asia(Pramanick et al., 2021)(Zhu et al., 2021). Tackling the COVID-19 pandemic is not only implemented in terms of implementing health protocols, but also intervention with vaccination as part of efforts to prevent and control COVID-19 (Ophinni et al., 2020).

Providing COVID-19 vaccination is carried out with the right strategy for priority target groups(Russo et al., 2021). COVID-19 vaccination aims to reduce the transmission or contagion of COVID-19, reduce morbidity and death rates due to COVID-19, achieve herd immunity in society and protect society from COVID-19 so that they remain socially and economically productive (Aditama, 2020). Prevention efforts through vaccination programs, if assessed from an economic perspective, will be much more cost-effective when compared with treatment efforts (Yuriah & Kartini, 2022).

COVID-19 vaccination is carried out in 4 stages considering availability, arrival time and vaccine safety profile(Wu et al., 2021)(Kochhar & Salmon, 2020). The priority group for vaccine recipients is residents domiciled in Indonesia who are ≥ 18 years old (Hanifa et al., 2022)(Firdaus, 2022). The targets for phase 1 of the COVID-19 vaccination are health workers, health worker assistants(Shekhar et al., 2021)(Nomhwange et al., 2022), support staff and students who are currently undergoing medical professional education who work in Health Service Facilities (Ranzani et al., 2021).

Verified target data along with vaccination scheduling for each target can be accessed by health service facility officers via the Pcare Vaccination application (Muthoharoh et al., 2022). In order for COVID-19 vaccination activities to run well and with quality, the Provincial Health Service, District or City Health Service and Community Health Centers need to develop advocacy, outreach and coordination plans for all parties, both across programs and across related sectors (Muthoharoh et al., 2022).

In order to monitor and evaluate COVID-19 vaccination activities, you can use the VIRAT (Vaccine Introduction Readiness Assessment Tool) tool with a self-assessment approach (Organization, 2021). The results of previous research regarding the evaluation of policies to prevent the spread of the COVID-19 virus are based on the concepts used in analyzing each problem. The indicators in measuring the success of preventing the spread of COVID-19 require a lot of evaluation, both of the program being implemented and the organizational structure that is running it. Many of the obstacles to implementing this prevention policy come from the vaccine management system and society (Badan Pengawas Obat dan Makanan Indonesia (BPOM), 2021)(Purnama et al., 2021). The obstacles to implementing the COVID-19 prevention policy require evaluation. There must be a lot of approach to evaluating activities with the community so that there are no more people who refuse vaccines. Apart from that, we also have to take an even approach so that people also feel that they care about the COVID-19 vaccination (Desnita et al., 2022).

Based on the above background, it is necessary to carry out evaluation research on COVID-19 vaccination in 2021 in Nganjuk Regency regarding the implementation of COVID-19 vaccination which includes planning needs, distribution, storage, recording and reporting, monitoring and handling secondary events after COVID-19 vaccination, as well as monitoring evaluation and evaluating the implementation of COVID-19 vaccination in 2021.

RESEARCH METHOD

This research method is included in the type of observational research with a descriptive approach(Morgan et al., 2017)(Williams, 2007). The descriptive method aims to create an objective picture or description of a situation(Kim et al., 2017).

The subjects in the research areevaluationImplementation of the COVID-19 vaccination in 2021 includes needs planning, distribution, storage, recording and reporting, monitoring and overcoming AEFI, monitoring and evaluation.

The population in this study is all data and documents during the process of implementing the COVID-19 vaccination onin 2021 in Nganjuk Regency. Meanwhile, the sample in this study was all data and documents during the process of implementing the COVID-19 vaccination onin 2021 in Nganjuk Regency. The sampling method in this research uses a total sampling method, namely by taking all members of the population as samples.

In this stage the data is processed and analyzed univariately. Which is carried out on each variable from the research results(Thévenot et al., 2015). Data analysis is carried out by grouping, sorting and simplifying data to make it easier to read and analyze. Then the data is presented in table form and then concluded. It is hoped that this conclusion can be a recommendation for the Nganjuk District Health Service and can be useful for all parties.

RESULTS AND DISCUSSIONS

This research was conducted at the Nganjuk District Health Service by looking at and analyzing the evaluation of COVID-19 vaccination in 2021 in Nganjuk District.The evaluation of COVID-19 vaccination carried out in this research includes planning COVID-19 vaccine needs, distribution of COVID-19 vaccines, storage of COVID-19 vaccines and recording and reporting, monitoring and handling AEFI as well as monitoring and evaluating COVID-19 vaccination.

Results of Evaluation of Planning for COVID-19 Vaccination Needs

Planning vaccination needs is an important aspect in determining the management of COVID-19 vaccination planning. The objectives of drug planning include the preparation of timely needs plans and procurement schedules for health services. Evaluation of planning for COVID-19 vaccine needs at the Nganjuk District Health OfficeThis was done by collecting data from the population in Nganjuk Regency. Targets for COVID-19 Vaccination Based on age can be seen in Table 1.

Table 1. Targets for COVID-19 vaccination based on age in 2021

Age	Target Target	Percentage
12-17 (Teenagers)	96,472	11.17%
18-59 (Adult)	642,214	74.34%
≥60 (Elderly)	125,269	14.49%
Total	863,955	100%

Based on the COVID-19 vaccination target grouped by age in Nganjuk Regency, it was recorded that in 2021 there were a total of 863,955 people, including 96,472 teenagers with an age range of 12-17 years, 642,214 people aged 18-59 years, ≥60 years as many as 125,269. Based on data, the target age for most vaccinations is 18-58 years old.

Table 2. Data on the number of covid-19 vaccinations

No	Types of COVID-19 Vaccines	Acceptance (Dose)	Percentage
1	Astrazeneca	698.174	59.75%
2	Moderna	36,604	3.12%
3	Pfizer	80,730	6.90%
4	Sinopharm	2,674	0.22%

No	Types of COVID-19 Vaccines	Acceptance (Dose)	Percentage
5	Coronavac	350,156	29.97%
	Total	1,168,338	100%

Table 2 presents data on the number of COVID-19 vaccines received, namely 5 vaccines with a total number of doses received, namely 1,168,338 doses. If accumulated with a target number of 863,955 people, if each person gets up to 3 doses, the total dose required is 2,591,865 doses, while the number of doses received is 1,168,338 doses so there are 1,423,527 doses which is less. This is in line with research by Prastuti et al., (2022) regarding the equitable distribution of the COVID-19 vaccine, where the number of doses needed by the community is very high and is not the same as the number of doses received, as a result, people who have high levels of comorbidities receive the vaccine first. According to a study by Bubar et al. (2021), prioritizing vaccination for adults over 60 years of age with underlying diseases is the right strategy to reduce the death rate from COVID-19.

Results of Evaluation of COVID-19 Vaccination Distribution

A good drug distribution method is a method of distributing drugs and medicinal ingredients which aims to ensure quality along the distribution route according to the requirements and intended use (BPOM, 2019). The quality of the COVID-19 vaccine can be well maintained if the distribution service uses passive containers (Vaccine Carrier and UCC) (Ministry of Health, 2021). Based on the results of observations in the field, the percentage obtained was 92.85% >75%, which means it is in accordance with the provisions of the Indonesian Ministry of Health HK.0107/MENKES/4638/2021 and SOPNganjuk District Health Office.

As for the distribution of the COVID-19 vaccine inNganjuk District Health OfficeThere were 13.3% that did not comply with existing provisions, namely in the distribution of Frizer and Moderna vaccines, officers did not use UCC equipment, this was due to limited equipment, the quantity was small and when it was disbursed it immediately ran out. Officers also do not place used tools on the sponge/foam cover of the Vaccine Carrier because the used vaccine is placed directly in the Instrument Tub. According to the Ministry of Health (2021), the impact of the vaccine being placed in the instrument tub is that the vaccine could break because the material of the instrument tub is too hard.

Based on the results of the study, it shows that the achievement of COVID-19 vaccination is influenced by vaccine acceptance and the number of targets. Therefore, in the East Java Provincial Government's efforts to fulfill the directions from the central government to accelerate the achievement of vaccination targets, the East Java Provincial Government should use the number of vaccine recipients, total confirmed cases and total targets as the basis for determining vaccination implementation priorities. COVID-19.

Results of Evaluation of COVID-19 Vaccination Storage at the District Health OfficeNganjuk

Vaccine storage requires special attention because vaccines are biological preparations that are susceptible to changes in environmental temperature because they can impact the biological levels of the vaccine (Yunilia, 2021). So good storage of the COVID-19 vaccine must be supported by adequate facilities and infrastructure, for example the availability of generators to support all operations, one of which is the Vaccine Refrigerator so that it continues to run even if the electricity goes out.

If possible, the COVID-19 vaccine should be stored in a different vaccine refrigerator, separated from routine vaccines. Vaccine storage for health facilities that do not have a standard Vaccine Refrigerator can use a domestic/household refrigerator (Ministry of Health, 2021).

The storage equipment for the COVID-19 vaccine (Sinovac/Coronavac, Astra Zeneca and Sinopharm) is the same as other vaccine storage equipment, namely using a Vaccine Refrigerator which has a door that opens upwards and then the shelves are arranged separately, according to the temperature set for the reason that the number of vaccines provided not too much. Meanwhile,

the Pfizer and Moderna vaccines are stored in the Pharmacy Warehouse and this type of vaccine is taken according to the needs of that day (immediate use). The vaccine storage equipment used is in line with the research results of Zuhroh & Dyahariesti (2021) which states that vaccine storage in Mataram City uses a refrigerator given a distance of 15 cm and each distance between vaccine boxes is given a distance of 1-2 cm(Zuhroh & Dyahariesti, 2021).

Cold chain products must be ensured to be stored in a room with maintained temperature, cold room/chiller (20 to 80C), freezer room/freezer (-250 to -150C) (Vinals, 2021). The Sinovac and AstraZeneca vaccines are stored in the original carton in the refrigerator at a temperature of 20C-80C and not stored in the freezer to prevent freezing of the product. Unopened ampoules can last for 12 months or until the expiry date stated on the label (Kemenkes RI, 2020a). Meanwhile, the Sinopharm vaccine lasts for 24 months for unopened ampoules and is stored at a temperature of 20C-80C (Yuriah et al., 2023).

Storage of Sinovac, AstraZeneca and Sinopharm vaccines at the Nganjuk District Health Office is in accordance with the provisions, namely at a temperature of 20C -80C. Some storage temperatures for VACCINE-19, namely the Sinovac, AstraZanecca and Sinopharm vaccines, are the same as other storage temperatures (for example: DPT vaccine). Hikmarida's research (2014) stated that the Community Health Center in Sidoarjo Regency stored the DPT vaccine using a refrigerator with a temperature that met the vaccine storage requirements, namely 20C-80C at the time of the visit, 77% of the time.

The Nganjuk Health Service monitors temperatures to avoid damage to the COVID-19 vaccine. The temperature monitoring is not in accordance with the regulations, because according to the (de Faria et al., 2021). states that temperature monitoring is recorded periodically at least 3 times a day (morning, afternoon and evening). Meanwhile, at the Nganjuk Health Office, temperature monitoring is only carried out twice a day (morning and evening) and then recorded in a temperature monitoring chart book. If there is a holiday where it is not possible to monitor the vaccine temperature, the officer can see the temperature by pressing the review button on the thermometer and then record it in a book using the HAIER tool. The HAIER tool is a tool used to monitor refrigerator temperature by automatically saving temperature data to a computer application (Kemenkes RI, 2020).

Results of Evaluation of Reporting and Recording of COVID-19 Vaccination

The implementation of the COVID-19 vaccination at the Nganjuk Regency Health Office has been carried out. In order to speed up the implementation of the COVID-19 vaccination, the Health Office not only carries out COVID-19 vaccination at the Health Office, but also carries it out at COVID-19 vaccination service posts consisting of Community Health Centers, Districts, Village Hall, Sector Police, Koramil, Market, School and residents' homes. COVID-19 vaccination is carried out from morning to evening.

Results of Evaluation of AEFI Monitoring and Management of COVID-19 Vaccination at the District Health OfficeNganjuk.

According to WHO, AEFI is any undesirable medical event that occurs after immunization. AEFI can occur and cause moderate to severe symptoms. Severe symptoms are very rare. The anticipated serious symptom is an anaphylactic shock reaction. Anaphylactic shock reaction is a severe allergic reaction that causes a drastic drop in blood pressure, causing difficulty breathing and even loss of consciousness. This reaction usually occurs within a short time of up to 30 minutes after the vaccine is injected. After 30 minutes, this reaction usually does not occur again and the vaccine recipient can carry out normal activities.

Every health facility administering vaccinations is required to record and report AEFIs that occur. The existence of a vaccination program that is currently running does not necessarily make us careless in implementing health protocols. Implementation of vaccination in an effort to prevent COVID-19 with the number of participants who could be vaccinated was 1,038,138 people

consisting of the General & Vulnerable Public, Health Human Resources, the Elderly, Teenagers and public officials. Of all the participants who were vaccinated, none experienced Post-Immunization Adverse Events (AEFI).

Results of Evaluation of AEFI Monitoring and Management of COVID-19 Vaccination at the District Health OfficeNganjuk.

Post-Immunization Adverse Events (AEFI) The aim of this activity is to provide health promotion services through monitoring and education regarding the anticipation of AEFI for the COVID-19 vaccine. The benefit of this activity is that vaccination participants are protected from AEFI and are able to contribute to caring activities for others in the health sector, especially implementing promotive and preventive efforts.

The existence of a vaccination program that is currently running does not necessarily make us careless in implementing health protocols (Makmun & Hazhiyah, 2020). Implementation of vaccination in an effort to prevent COVID-19 with the number of participants who could be vaccinated was 1,038,138 people consisting of the General & Vulnerable Public, Health Human Resources, the Elderly, Teenagers and public officials. Of all the participants who were vaccinated, none experienced Post-Immunization Adverse Events (AEFI).

Results Monitoring and Evaluationat the District Health OfficeNganjuk

A person's lack of knowledge and understanding regarding COVID-19 vaccine information can cause distrust towards the COVID-19 vaccine which will have an impact on public acceptance of the COVID-19 vaccine. Obstacles like this could be due to differences in information and the circulation of issues and rumors in society regarding the COVID-19 vaccine, causing people to hesitate to get the COVID-19 vaccination. Therefore, it is important to take a comprehensive approach by providing more information to the public. The socialization method in the vaccination program greatly influences the percentage level of vaccination implementation. With socialization and notification of vaccination, the public will be more enthusiastic in the implementation process so that the vaccination achievement target is met well. Based on the evaluation of the implementation of vaccination by the Nganjuk District Health Office.

CONCLUSION

The implementation of COVID-19 vaccination which includes planning needs, distribution, storage, recording and reporting, monitoring and overcoming AEFI of COVID-19 vaccination, as well as monitoring and evaluation is in accordance with Minister of Health Regulation No. HK.01.07/MENKES/ 4638/2021. The data obtained between planning and distribution is not the same, the conformity of distribution with the Minister of Health Regulation is 92.85%. Storage compliance with Minister of Health Regulations is 85%. Recording and reporting using the Pcare application, monitoring and handling AEFI for COVID-19 vaccination is carried out directly by waiting 30 minutes after administering the vaccine. The evaluation of the implementation of the COVID-19 vaccination in 2021 in Nganjuk Regency contains several components, namely planning, organizing, actuating, controlling and output. At the planning stage, the need for COVID-19 vaccination stock is not yet in line with the achievement target. Distribution and storage of SOPs have been carried out properly, SOPs are carried out with appropriate references to the respective technical instructions along with recording of AEFI reporting and monitoring. This study provides a fairly comprehensive overview of the implementation of COVID-19 vaccination in Nganjuk District, including aspects of planning, distribution, storage, recording, reporting, AEFI monitoring, and evaluation of the entire process. There are some limitations to consider, namely that it has not investigated in depth the factors influencing discrepancies between planning and distributing vaccination stocks, which could include logistical constraints, transportation arrangements, or other factors affecting the supply chain. The evaluation of vaccination implementation may not have involved a sufficiently in-depth review of the experiences of

vaccination participants and the opinions of the general public regarding the vaccination process. Suggestions for future research development include delving deeper into the causes of discrepancies between the planning and distribution of vaccination stocks, taking into account aspects such as logistics management, inter-agency coordination, and local factors that may affect the process. Expanding the study to include a more in-depth qualitative review of vaccination participants' experiences and community perceptions may provide more comprehensive insights into the factors that influence vaccine acceptance and the overall effectiveness of the vaccination program. Future research can thus provide a stronger basis for improvement and more effective policy development in the implementation of the COVID-19 vaccination program.

ACKNOWLEDGEMENTS

Thank you to the supervisor, Prof. Dr. apt. Satibi, M.Sc. and co-supervisor Dr. apt. Iswandi, S.Si., M.Farm who has guided me throughout the process of preparing this thesis. Thank you to the Head of the Nganjuk District Health Service for giving permission and allowing us to collect data for research.

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