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EVALUATION IMPLEMENTATION OF IMMUNIZATION PROGRAM: A QUALITATIVE STUDY

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ABSTRACT
Some infectious diseases that can be prevented by vaccination include, especially pneumonia, respiratory diseases, and sepsis, causing approximately 23% of neonatal deaths globally. However, in implementation, there are still many health centers that have not been able to achieve the target of immunization for children. Evaluation of program implementation is needed to find obstacles and opportunities in improving achievements. The purpose of this study is to analyze and evaluate the implementation of immunization programs based on CIPP theory. This research is qualitative with a case study approach. The study was conducted in 8 villages in the working area of the Bandung Health Center in July 2025. The informant was 25 person selected by purposive sampling. Analysis based on the CIPP approach with input, process, and output indicators. Data will be collected through in-depth interviews. The questionnaire will be used to collect qualitative. The instrument was valid and reliable by expert test. The informants in this study consisted of the head of the health center, cadres, village midwives, and the community. Data analysis uses Miles and Huberman's principles and a matrix. Obstacles to the immunization program include: the number of Human Resources (HR) is still not ideal, the availability of vaccines is often late and limited, supervision is still not optimal and the budget does not involve the private sector, immunization schedules are tentative according to conditions, training and supervision that are not routinely carried out and still lie in the doubts and rejections of a small part of the community as well as limited service coverage in certain areas. Conclusion: Efforts to solve problems must emphasize 6 main points, namely: strengthening human resources, optimizing and validating data, strengthening cold chains, increasing community participation, strengthening cross-sectoral coordination, and equitable distribution of immunization services.

Keywords: evaluation; immunization; program

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INTRODUCTION

World health organization has provided guidance for the creation and implementation of national immunization implementation programs as well as policy guidelines to support the introduction of new vaccines. This is because vaccines have been successful in preventing 86% of global toddler deaths from occurring in neonates (infants in the first 28 days of life) in low- and middle-income countries (LMICs). Some infectious diseases that can be prevented by vaccination include, especially pneumonia, respiratory diseases, and sepsis, causing about 23% of neonatal deaths globally. So that the immunization is a program under official government regulations.(WHO, 2018)(Sobanjo-Ter Meulen A, 2016)

According to the Regulation of the Minister of Health Number 12 of 2017 concerning the Implementation of Immunization, immunization is an effort to actively increase a person's immunity to a disease so that if one day exposed to the disease they will not get sick or only experience mild illness (Laupèze, 2021). The government facilitates immunization services that are routinely provided to infants and children, including basic immunization and advanced

immunization. Complete basic immunization is a basic immunization received by every child aged 12-23 months and includes one immunization Bacillus Calmette-Guérin (BCG), three times polio immunization, three times DPT immunization, three times hepatitis B immunization and one measles immunization.

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Complete basic immunization coverage in Banten in 2021, especially in October, only reached 58.4% of the target of 79%. Nevertheless, Banten is close to the target of complete basic immunization coverage with a figure of 78.8%. The Banten provincial government targets a minimum of 90% complete basic immunization coverage. Several factors can affect immunization coverage, such as access to health facilities, public awareness of the importance of immunization, and vaccine availability. In addition, Serang Regency, Banten Province still faces various challenges in an effort to achieve equitable immunization coverage and optimal reporting through the ASIK application. One of the main problems is the inequality of immunization coverage between sub-districts and villages at the Bandung Health Center. Serang Regency is quite significant, including the target of 95%, but there are still villages that are only able to achieve 65%, even child immunization in 2024 will only reach 77% for Hepatitis B (HB0), Polio 1, and Polio 4. A lower percentage of achievement was even found for continued immunization of DPT Hib2 and DPT Hib3, which was only 65%. This makes the overall achievement of the Health Center still below the target. Therefore, it is necessary to evaluate programs based on scientific evidence or implementation research to analyze the implementation of the immunization program in the Bandung Health Center area, Serang Regency which is comprehensive from the input process to the output.

One type of research that evaluates a program is impelemation research that uses qualitative design and involves a variety of stakeholders. Previous research reported by the titled " (Peters, 2013)Implementation research: what it is and how to do it" and perfected by the one entitled " (Smith, 2020)The implementation research logic model: a method for planning, executing, reporting, and synthesizing implementation projects" report several evaluation study indicators from the implementation of the program, namely the admission (acceptability), adoption (Adoption), suitability (appropriateness), eligibility (Feasibility), loyalty (Fidelity), implementation costs (implementation cost), scope (Coverage), and sustainability (Sustainability) all of these can serve as indicators of successful implementation. In addition, this research can also provide a clearer picture of Strength (Strengths), Weaknesses (Weaknesses)), opportunities (Opportunities) and threats (threats), as well as how synergy between indicators can increase immunization coverage.

Previous research has highlighted several factors that can affect the success of the immunization program, including research highlighting that the readiness (knowledge) and program indicators carried out by health workers are factors that affect the success of the immunization program, several obstacles such as the limitation of human resources due to the lack of a special team involving cross-programs in the health center, Meanwhile, immunization officers are also involved

in other health center programs.(Qamarya, 2024). Operational costs are also one of the factors that can affect the success of a program. The research reported by the Centers for Disease Control and Prevention states that the largest components of the allocation nationally are for vaccine procurement, introduction of new vaccines and investment. Meanwhile, the allocation in districts/cities (companion funds) is large for service activities and less than 8% for surveillance and training.(Yulianti, 2018)

Based on the background that has been explained, the urgency of the problem is first, it is not known in detail the analysis related to the quality and quantity of program inputs including human resources, facilities and infrastructure as well as budget allocation. Second, the institutional function in carrying out immunization activities has not been optimal, which includes planning, organization, implementation, and supervision. Third, there are still achievements that have not met the target, namely immunization in the BIAS and DPT HB programs in several villages in the Bandung Health Center area, Serang Regency. Fourth, there is no analysis related to the strengths, weaknesses within the health center as well as opportunities and challenges from the external health center related to the immunization program at the Bandung Health Center, Serang Regency.

METHOD

This study uses a qualitative research design with a Case Study approach to analyze and evaluate the implementation of the child immunization program in the Bandung Health Center area, Serang Regency in 2025 based on input indicators (human resources, infrastructure facilities, and budget), activities (planning, organization, implementation, and supervision), and output (discovery and achievement). Data was collected through *an in-depth interview*. The questionnaire will be used to collect qualitative data related to inputs, processes, and outputs. The instrument was validated and reliable by expert test. Informants in this study are divided into 3 categories by purposive and selecting based on their role in the programs, namely: (1) Key informant/main informant, namely 1 person in charge of the immunization program. (2) Supporting informants, namely 17 Heads of Health Centers, Village Midwives and Cadres. (3) Additional Informants consisting of 7 people (mothers of toddlers).

Table 1.
Interview guidelines / Term limitations

Yes	Indicator	Definition
1	Input	Identify the resources needed to improve the achievement of basic immunization and BIAS. In this indicator, the indicators of human resources, facilities and infrastructure, as well as budget suitability will be assessed
2	Activities	Identify interventions or policy implementation in the implementation of immunization programs in health centers including planning, organization, implementation and supervision.
4	Output	Identify the outputs of the immunization program and the barriers experienced (findings and achievements) in the child immunization program.

The data obtained from the questionnaire will be analyzed descriptively, while the interview data will be analyzed using thematic analysis to identify key themes related to the role of the community and stakeholders. To ensure the validity and reliability of the data, this study will use a triangulation technique, namely by comparing data obtained from questionnaires and interviews. The triangulation method that will be used in this study is triangulation of methods, sources and triangulation of theories. Theoretical triangulation is comparing information or data in a linear way. As is known, in qualitative research the researcher this time will use in-depth interview methods and data observation.(Susanto, 2023)

RESULT

In this study, of the 25 informants interviewed, almost all informants were female, namely 24 people (96%) with the last educational history, the majority of S1 people (32%) and junior high school with the same number, namely 8 people (32%). The background for the majority of informants is a bachelor of midwifery or have graduated in the diploma 3 midwifery program

because the person in charge of the program and village midwives are the majority of respondents. The Head of the Bandung Health Center as an additional informant with a background in public health undergraduate education in the field of health extension. The majority of the cadres have a junior high school education or equivalent.

Input

Based on the results of the study, it is known that there are 4 main findings in the input process of the immunization program at the Bandung Health Center, Serang Regency, including: (1) The number of Human Resources (HR) is still insufficient and not ideal. The quality of human resources is in accordance with the standards. (2) Vaccines are often late and limited, especially during activities outside the building and sweeping. Some facilities and infrastructure are still not limited. (3) Infrastructure facilities for data input and supervision are still not optimal. (4) The budget is still sourced from BOK and Puskesmas funds, there are no CSR funds yet. Funding is felt to be limited and lacking during the national immunization month and mass activities.

"The availability of human resources at the Bandung Health Center is still not ideal. Immunization workers are limited and most concurrently work in other programs." "*The number of human resources is not in accordance with the target ratio and regional coverage* " (Key informant).

"... Sometimes the vaccine does not meet the target number. The availability of vaccines is often lacking and the supporting equipment is also lacking" (Supporting Informant 2)

"*For immunization registration, we use two ways, namely manual for villages and through applications*." … "there are no special personnel, there are only village midwives" (Supporting Informant 3)"

Activities

Based on the results of the research on the activity indicator, it is known that there are 3 main findings of the implementation of the immunization program at the Bandung Health Center, Serang Regency, including: (1) There are SOPs and organizational structures. However, the immunization schedule can be flexible according to the conditions. (2) Training and updating of capabilities or information related to immunization are still not carried out routinely and are not optimal. (3) Supervision is still carried out by the health care center even though it is not routinely carried out. This makes there are still people who refuse or do not routinely immunize.

"*SOPs and Work Plans exist. Supervision of every monthly meeting by the head of the health center*" (Supporting Informant 2)"

"*There is no training on the implementation of the immunization program" (Supporting Informant 3) "Sy is also still learning and does not understand how to input. That's why the coverage is cool and a lot of people are lagging behind other villages*" (Supporting Informant 3)

"*...training is not carried out regularly every year and is generally only attended by representative officers.... Although it is not always scheduled regularly every month, supervision and evaluation are still carried out continuously according to the needs and conditions in the field*" (Supporting Informant 4)

Output

Table 2.
SWOT Analysis

Pros	Disadvantages
1. Availability of human resources in Puskesmas and villages (midwives, immunization officers, Posyandu cadres).	1. Limited human resources in the field, especially data input personnel who also concurrently perform other tasks.
2. Coordination that runs well between immunization officers, village midwives, and health cadres.	2. Not ideal cold chain logistics, such as lack of vaccine storage equipment and temperature monitoring.
3. The availability of vaccines and *cold chain logistics* that are still adequate for routine activities.	3. Obstacles in data input and synchronization, due to limited devices (laptops, cellphones) and internet networks.
4. Cross-sector support from the government in the form of funding, villages/sub-districts with the provision of immunization locations, and community leaders.	4. Density of Posyandu activities

Pros	Disadvantages
5. There is an increase in public knowledge about the importance of immunization. 6. There are *sweeping* activities and intensification of programs to reach the targets that are left behind. 7. Support for families and cadres in encouraging participation in immunization targets. 8. Awareness of the importance of target data and input team coordination began to increase.	5. High workload of village midwives, because they have to handle many programs at once. 6. Lack of dedicated data input manpower, so the reporting process is often late. 7. Some areas are difficult to access, so vaccine delivery and surveillance are not optimal. 8. Target data is not always accurate or up-to-date, making it difficult to plan and monitor.
Opportunities	**Threats**
1. Strong cross-sectoral support, such as from village governments, PKK, and community leaders. 2. The potential for the development of a data digitization system to improve reporting efficiency. 3. The possibility of forming a special team from the Puskesmas, to assist village midwives in input and supervision. 4. The increasing knowledge and awareness of the public opens up opportunities to increase immunization coverage. 5. The support of families and Posyandu cadres can continue to be maximized in field activities. 6. The existence of evaluations and routine activities such as *sweeping* provides opportunities to improve data and services. 7. The existence of independent health service facilities such as independent clinics that have the authority to provide immunizations	1. Doubt, stigma, or negative assumptions about immunization in some communities (for example, haram assumptions). 2. Limited geographical access, especially in hard-to-reach areas 3. Limited internet networks and digital infrastructure in several areas. 4. Possible fluctuations in vaccine availability and logistics** if distribution is disrupted. 5. Double workload of officers which has the potential to reduce the quality of program implementation. 6. High dependence on government support (BOK) without alternative sources.

In the output indicator, the researcher will conduct an analysis related to the obstacles experienced (findings and achievements) in the child immunization program. The results of the interviews will be categorized into several themes, namely the achievement of the health center and the impact or response of the community related to immunization. The output is also asked about the obstacles and opportunities that will be formulated in the SWOT analysis.

Table 3.
Policy Analysis by SWOT

	Strengths	*Weakness*
Opportunities	S/O strategy - Maintain and increase synergy between officers and cadres. - Make MOUs and cross-sector and community support as the main social capital. - Maximize the power of human resources and data for evidence-based planning by establishing a database of health center immunizations.	W/O strategy - Need for data-specific workload distribution and recruitment planning. - It is necessary to increase the capacity of cold chain facilities and digital devices. - Scheduling for regular verification and updating of target data. - Routine training of cadres on 25 basic skills of cadres,
Threats	S/T - Conduct education and advocacy based on community leaders to suppress hoaxes. - Diversify funding sources and improve the efficiency of the use of funds such as the use of CSR. - Develop a *logistic/*cold chain *back-up mechanism* and distribution in hard-to-access areas.	W/T - Develop an integrated digital reporting system based on the puskesmas database. - Forming a technical support team at the Puskesmas level. - Leverage social and institutional support to strengthen immunization campaigns. - Increasing cooperation with community leaders and religious leaders to reduce stigma in society.

DISCUSSION

Input

In the first finding, the number of human resources that is not ideal is one of the main obstacles in the immunization data input process. In this context, some health workers often concurrently perform other tasks such as KIA services and nutrition, so the time to input data is limited.

However, the quality of human resources is considered to be in accordance with standards, meaning that health workers already have basic competencies in recording, reporting, and using immunization applications such as ASIK or the National Immunization Information System (SisImun). This is in line with the research reported by Qamarya, et al. (2024) that the success of immunization data input is not only influenced by the number of officers, but also by their skills and experience in the use of information technology. Researchers strongly emphasize that increasing the number of human resources or training is something that must be done. Puskesmas must strive to add specially trained calm even though only 1 person is able to overcome the problem of program input and immunization achievements. This condition is in accordance with the results of the study by Yuliana et al. (2024) which explains that the cold chain is a crucial factor in maintaining the quality and availability of vaccines. Lack of storage equipment and a suboptimal temperature monitoring system can cause delays or waste of vaccine logistics. In the end, the delay in the vaccine makes people not or do not come back to immunize.

Limited infrastructure facilities, such as laptops, mobile phones, and internet networks, have a direct impact on the data input and synchronization process. Officers often perform manual recording before finally transferring the data to the online application, which leads to duplication of work and the risk of input errors. This is in line with Amallia's (2024) research which found that inadequate digital infrastructure is the main obstacle in the implementation of an electronic-based health reporting system. In the context of health centers, the provision of data input devices must be a priority because it is directly related to the effectiveness of reporting and the accuracy of immunization achievements.

The results of the study show that the source of funding for immunization activities still depends on the Health Operational Assistance (BOK) funds from the government and routine funds of the Health Center. This funding is often limited, especially during the implementation of the National Immunization Month (BIAN) or mass activities that require additional operational costs. According to WHO (2020), the sustainability of immunization programs is greatly influenced by the diversification of financing sources. Dependence only on government funds increases the risk of a decline in program quality when there is a delay in disbursement or budget adjustment Hidayat, S., & Woyanti, N. (2021). Therefore, collaborative efforts are needed to collaborate with the private sector, for example through corporate social responsibility programs, in supporting logistics, transportation, or the procurement of data input facilities. Support from the village government and the use of village funds for sweeping activities can also be an alternative source of sustainable local financing.

Activities

This study shows that SOPs are available, but their application is flexible, especially in determining immunization schedules. This flexibility is generally done to adjust field conditions, such as weather, community activities, or the availability of targets. This is in line with the research of Arfananda et al, 2025 which states that the flexibility of health service schedules at the village level is often an adaptive strategy to increase community participation, especially in areas with high population mobility Rutchanagul, P., & Sangnimitchaikul, W. (2022). However, schedule flexibility also has the potential to cause irregularities in reporting and coordination between officers. Therefore, a good coordination system is needed so that schedule changes are recorded, reported, and do not interfere with the smooth running of other activities at the Health Center. The results of the study also show that training and updating the ability of immunization officers are still not carried out regularly and optimally. In fact, the success of the immunization program is highly dependent on the competence of officers in handling vaccines, communicating risks, and managing immunization data. According to the World Health Organization (2021), continuous training for immunization workers is a key element in the Expanded Programme on Immunization (EPI). The training includes not only injection techniques, but also logistics management, record-keeping, interpersonal communication, and approaches to immunization resistant communities Rutchanagul,

P., & Sangnimitchaikul, W. (2022). The absence of routine training can cause a knowledge gap between officers and reduce the quality of service. This is reinforced by Prihanto (2024) who states that the low frequency of training contributes to the low ability of officers to deal with community resistance[38] to immunization.

Based on the results of the research, supervision is still carried out by the Puskesmas but it is not routine. As a result, there are still people who refuse immunization or do not carry out complete immunization. This condition reflects that the monitoring and supervision mechanism has not been running optimally. The Ministry of Health of the Republic of Indonesia (2022) stated that field supervision should ideally be carried out periodically to assess the quality of service, the suitability of procedures, and the level of community satisfaction. Irregular supervision can lead to weak responses to problems in the field such as immunization refusal, inadequate vaccine stocks, or recording errors. Supervision and monitoring must also be through synergy between the Puskesmas and the health office. The health office as an institution that has the responsibility to ensure the implementation of immunization activities must continue to conduct routine and scheduled monitoring and evaluation to help the health center solve potential problems in the implementation of immunization.

Outing

Some people still have doubts about the safety of vaccines or consider certain immunizations to be not very important. These findings are in line with the research of Yulviana, R. (2018) which states that risk perception and trust factors for vaccines are the dominant factors that affect the incompleteness of children's immunizations Yulviana, R. (2018). In addition, geographical factors such as distance, transportation, and limited service facilities in remote areas are also the causes of the non-achievement of the target. Efforts such as mobile immunization and integration of immunization with Posyandu and KIA activities are recommended to increase reach and close the coverage gap between regions. The informant also said that some people still have doubts or rejections of immunization due to religious factors, concerns about side effects, or exposure to misinformation on social media. This phenomenon is in line with the 2022 research report by Dila et al, on vaccine hesitancy being one of the ten global health threats. To overcome this, research conducted by Makahaghi, Y. B. (2025). entitled "Behavioral Change Communication and Vaccine Acceptance: A Framework for Strengthening Public Trust in Health Interventions" emphasizes a trust-based communication approach by involving influential figures in the community, in addition to continuous education and scientific evidence is the main strategy to reduce resistance to immunization.

CONCLUSION

Analysis of the implementation of the immunization program at the Bandung Health Center based on the CIPP framework shows that there are several aspects of inputs and processes that have not been fulfilled so that the program still has not reached the desired output (coverage) and the outcome (unconditional receipt of comprehensive immunization) has not been achieved. The results of the study show that there are 4 aspects of the input that have not been achieved, namely: (1) the number of Human Resources (HR) is still insufficient and not ideal, (2) the availability of vaccines is often late and limited, (3) supervision is still not optimal and (4) there is a lack of budget because it is only sourced from BOK and Puskesmas funds. In addition, in the process aspect, namely activities where the process has 3 things that need to be considered, namely: immunization schedules that are tentative according to conditions, training and supervision that are not routinely carried out. This makes the problem not detected correctly and the handling is not thorough, so the outcome and outcome are not achieved.

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