



Evaluation of the Leprosy Program Implementation at Teminabuan Health Center, South Sorong District, Using the CIPP Evaluation Model

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ABSTRACT

Background: Leprosy is a chronic infectious disease that poses significant challenges and impacts family well-being. In 2023, 75 cases were recorded and treated in South Sorong. **Objective:** This study aimed to evaluate the implementation of the leprosy program at Teminabuan Health Center using the CIPP (Context, Input, Process, Product) evaluation model. **Methods:** A descriptive qualitative approach was applied, using observation and in-depth interviews with three key informants. Data validation was conducted through triangulation. **Results:** Context evaluation showed collaboration between health workers and community cadres in raising awareness and promoting early examination. Input evaluation revealed program management by a designated officer with support from several units but highlighted issues such as limited staff, lack of integrated data systems, and insufficient drug supply. Process evaluation indicated that outreach was done through leaflets and discussions, field screening, and referrals, though stigma and behavior change remained challenges. Product evaluation found that activities included contact tracing, medication monitoring, and referrals, but training for health workers was inadequate. **Conclusion:** While context and process aspects were satisfactory, input and product components need improvement, particularly in human resources, logistics, and system integration to enhance program effectiveness.

Introduction

The study used the CIPP evaluation model consisting of Context Evaluation, Input Evaluation, Process Evaluation, and Product Evaluation. It is a comprehensive evaluation model that has formative and summative functions and is still rarely done in this case related to leprosy, especially in the Papua region.

Every activity in an effort to maintain and improve the highest degree of public health is carried out based on the principles of non-discrimination, participation, and sustainability^{1,2}. In the context of the formation of Indonesian human resources, as well as increasing the resilience and competitiveness of the nation for national development and

development efforts must be based on health insight in the sense that national development must pay attention to public health and is the responsibility of all parties, both the Government and the Community^{3,4}.

Environment-based diseases are diseases whose occurrence process in a community group is closely related to one or more environmental components in a space.⁵ WHO reports show that environmental factors significantly influence more than 80% of diseases⁶. Environment-based health problems and diseases caused by adequate environmental conditions, both skin and quantity can cause various diseases, one of which is leprosy⁷.

Leprosy, also known as Leprosy or Morbus Hansen disease, is caused by the bacterium

*Mycobacterium leprae*⁸. This bacterium undergoes a long division process between 2-3 weeks. The life expectancy of leprosy germs reaches 9 days outside the human body. Leprosy bacteria have an incubation period of 2-5 years and can even take more than 5 years⁹.

Leprosy is a chronic infectious disease that poses a very complex problem. The disease will have an impact on family survival. Two types of leprosy are known, namely type MB (Multi Basier or Wet Leprosy) and type PB (Pausi Basiler or Dry Leprosy)¹⁰. Type MB leprosy is the source of leprosy transmission, but the exact mode of transmission is not yet known. The exact transmission of leprosy is still unknown but most researchers have concluded that the main transmission of leprosy is through the skin, but it takes intimate and prolonged contact with a leper to become infected with leprosy¹¹.

Leprosy can affect all people, both men and women. Leprosy can occur at any age, ranging from infancy to old age, but is most common in the young and productive¹². Most countries in the world show that men suffer more from leprosy than women. Geography, ethnicity or tribe and socioeconomic factors can influence the distribution of leprosy¹³.

Leprosy is still a problem, both globally and nationally. The incidence of leprosy in various continents in 2022 includes India with 75,394 cases and Brazil with 18,318 cases, while Indonesia ranks third in leprosy cases, with 10,976 cases in 2021, 13,487 cases in 2022 and 14,376 cases in 2023¹⁴.

In Papua Province, the prevalence of leprosy is 5.8 per 10,000 populations. West Papua has the highest leprosy prevalence at 13.6 cases per 10,000 population. This is about 22 times higher than the national average. Papua and Southwest Papua have a leprosy prevalence of 10.77 and 8.2 cases per 10,000 population respectively.¹⁵ In South Sorong District, there were 60 cases of leprosy found

and treated in 2021, 75 cases in 2022 and 85 cases in 2023.

The implementation of the leprosy eradication program has included: counseling, finding new patients, improving the skills of responsible staff and the quality of program management and old and new treatments carried out under the MDT program.

The implementation of the leprosy program at Puskesmas Teminabuan is still not optimal in its implementation, so researchers chose to evaluate the implementation of the leprosy program using the CIPP evaluation model.

Materials and Methods

Research Design

This study employed a qualitative research approach with an in-depth interview design to explore the implementation of the leprosy control program.

Sample

The sample in this study was determined using total population sampling, involving all key stakeholders directly related to the leprosy program. This included the leprosy program officer at the Teminabuan Health Center, the head of the Teminabuan Health Center, and the leprosy program officer at the South Sorong District Health Office.

Data Collection Techniques

Primary data were collected through in-depth, semi-structured interviews with selected key informants, including program implementers, health workers, and stakeholders directly involved in the pharmaceutical supply management program. These interviews aimed to explore their experiences, perceptions, challenges, and suggestions related to the program's implementation. Interviews were conducted in person, recorded with consent, and transcribed for thematic analysis.

Secondary data were gathered through a thorough review of relevant documents, such as program implementation reports, drug inventory records, monitoring and evaluation reports, and national and local policy documents related to pharmaceutical management. This documentation provided contextual background, supported triangulation of findings, and helped validate the information obtained from interviews.

Data Analysis Techniques

The data analysis process involved several stages: transcription of interview recordings, data reduction to focus on relevant information, data presentation in narrative or tabular form, and conclusion drawing. To ensure the validity and reliability of the findings, triangulation was applied by comparing information from different sources and types of data.

Ethical Consideration

Although formal ethical clearance was not obtained from a specific institutional review board, the research adhered to ethical principles by ensuring informed consent, maintaining the confidentiality of participants, and respecting their autonomy throughout the data collection process. Participation was voluntary, and all informants were briefed about the purpose of the research and their right to withdraw at any time.

Results

In table 1, the research informants consisted of 1 person in charge of the Leprosy Program at the South Sorong District Health Office, the Head of Teminabuan Health Center, the person in charge of the Leprosy Program at Teminabuan Health Center.

Component Context Evaluation

In table 2 After conducting interviews and validation through source triangulation by comparing with the results of the review of source informants contained in the Source

Triangulation Matrix, it was found that Context Evaluation at Puskesmas Teminabuan in the South Sorong District Health Office in implementing the Leprosy Program at Puskesmas Teminabuan as follows: There is a Leprosy Service at Puskesmas Teminabuan, there is a Routine Report of Monthly Leprosy Program activities at the Puskesmas, there are Leprosy Program Activities in the Annual activity implementation plan, there are no Leprosy-related Poster Promotional Media at Puskesmas Teminabuan, there are only lefleats, there is a Leprosy Program Activity Budget, the availability of usage reports and Leprosy Drug request reports at the Puskesmas Pharmacy, and there is no Evidence of Commitment with Cross Sectors.

Component Input Evaluation

In table 3 After conducting interviews and validation through source triangulation by comparing with the results of the source informant review contained in the Source Triangulation Matrix, it is found that the Input Evaluation of the Leprosy Program at the Teminabuan Health Center at the South Sorong District Health Office is as follows: There is a Leprosy Service at Teminabuan Health Center, There is a decree of the person in charge of the Leprosy Program at the Health Center, There is no documentary evidence of Cross-Sector Commitment related to the Leprosy Program, and There is a work plan and budget that contains the Leprosy Program.

Components Process Evaluation

In table 4 After conducting interviews and validation through source triangulation by comparing with the results of the source informant review contained in the Source Triangulation Matrix, it is found that the Evaluation Process at the Teminabuan Health Center of the South Sorong District Health Office is carried out as follows: The existence of leprosy services at Teminabuan

Health Center, the existence of promotional media in the form of leaflets, the existence of operational standards related to the

leprosy referral system in the field, and the existence of monthly reports related to leprosy.

Table 1. Characteristics of respondents

Code	Position	Instance	Educational Background	Length of Service
Inf-1	Head of Health Center	Teminabuan Health Center	Bachelor of Nursing	6 years
Inf-2	Person in charge of the Leprosy Program an the health center	Teminabuan Health Center	Diploma of nursing	4 years
Inf-3	Person in charge of the Leprosy Program at the Health Office	South Sorong District Health Office	Bachelor of public health	8 years

Table 2: Results of Triangulation of the Context Evaluation Component

Thematic	Meaning Pattern	Document Review	Observation	Triangulation Analysis
Component Context Evaluation	Cadre Empowerment: Health workers actively involve cadres in educating the community about the symptoms of leprosy and the importance of testing at the health center, aiming to reduce the number of leprosy cases.	Routine Report on Monthly Activities of the Leprosy Program at the health center.	Leprosy Services at Teminabuan Health Center	Leprosy Services at Teminabuan Health Center
	Positive Community Response: Promotive and preventive activities conducted outside the building received a positive response from the community, signaling their acceptance and support for leprosy prevention efforts.	There is a Leprosy Program Activity in the Annual activity implementation plan		Routine Report on Monthly Activities of the Leprosy Program at the health center.
	Cross-sector cooperation: Good collaboration between various parties, such as the sub-district, village head, family welfare empowerment, and cadres, strengthens support for leprosy prevention programs.	There are no Leprosy-related Poster Promotional Media at Teminabuan Health Center, only lefleats.		There is a Leprosy Program Activity in the Annual activity implementation plan
	Government and Puskesmas Collaboration: The government, through the Health Office, collaborates with puskesmas in procuring drugs and reagents for examinations, which contributes to the reduction of leprosy transmission.	Budget for Leprosy Program Activities.		There are no Leprosy-related Poster Promotional Media at Teminabuan Health Center, only lefleats.
		Availability of usage reports and leprosy drug request reports at health center Pharmacies		Budget for Leprosy Program Activities Availability of usage reports and leprosy drug request reports at health center Pharmacies
		No Evidence of Commitment with Cross Sectors		No Evidence of Commitment with Cross Sectors

Table 3. Triangulation of Input Evaluation Component

Thematic	Meaning Pattern	Document Review	Observation	Triangulation Analysis
Component Input Evaluation	<p>The leprosy health program is managed as a whole by health workers with one focal point in charge.</p> <p>Program implementation involves various work units, with the support of a referral system, cooperation with village cadres and village heads, and adequate facilities and infrastructure.</p> <p>Field constraints are overcome with sufficient vehicles and the use of Health Operational Assistance for transportation.</p> <p>The budget is managed through non-cash cash directly into the account of the person in charge, ensuring efficient administration and implementation of the program.</p>	<p>Decree of the person in charge of the Leprosy Program at the Puskesmas</p> <p>No documentary evidence of cross-sector commitment to the leprosy program</p> <p>Existence of a work plan and budget that includes the Leprosy Program</p>	Leprosy Services at Teminabuan Health Center	<p>Existence of Leprosy Services at Puskesmas Teminabuan</p> <p>Decree of the person in charge of the Leprosy Program at the Puskesmas</p> <p>Absence of documentary evidence of cross-sector commitment to the leprosy program</p> <p>Existence of a work plan and budget that includes the Leprosy Program</p>

Tabel 4. Triangulation Komponen Proses Evaluation

Thematic	Meaning Pattern	Document Review	Observation	Triangulation Analysis
Components Process Evaluation	<p>Counseling was conducted using leaflets and direct discussion.</p> <p>The leprosy screening system is conducted in the field with referrals to health centers.</p> <p>Communities generally comply with health recommendations, but there are challenges in changing behavior and overcoming stigma.</p> <p>Achievement of health promotion performance is measured by survey targets and questionnaire distribution to achieve a set annual average score.</p>	<p>The existence of promotional media in the form of leaflets</p> <p>Existence of operational standards related to the Leprosy Referral System in the field</p> <p>Monthly reports on leprosy are available</p>	Leprosy Services at Teminabuan Health Center	<p>Existence of Leprosy Services at Teminabuan Health Center</p> <p>The existence of promotional media in the form of leaflets</p> <p>Existence of operational standards related to the leprosy referral system in the field</p> <p>Monthly Report on Leprosy</p>

Table 5. Triangulation Results of Product Evaluation Components

Thematic	Meaning Pattern	Document Review	Observation	Triangulation Analysis
Components Product Evaluation	Implementation of treatment is done at puskesmas with screening of household contacts, drug monitoring, and referral to hospital if necessary.	There are operational standards related to leprosy treatment management and leprosy referral system at the Puskesmas.	Leprosy Services at Teminabuan Health Center	Existence of Leprosy Services at Teminabuan Health Center
	Constraints include drug shortages, denial of service, lack of health worker training, and limited funding.			There are operational standards related to leprosy treatment management and leprosy referral system at the Puskesmas.
	Improvement efforts include mapping, counseling, and active screening at the neighborhood level as well as community group activities. Health promotion focuses on counseling, prevention, and treatment.	There is only 1 Program Officer who is trained but not in training but attending seminars.		There is only 1 Program Officer who is trained but not trained but attended a seminar.
	Success depends on implementation according to operational standards and accuracy of population data.	Promotion media in the form of leaflets		
	Performance evaluation is done by comparing real and estimated data, with performance considered maximized if the real data matches the population.			There is promotional media in the form of leaflets
	Personalized approaches such as "door to door" visits are considered effective, especially for handling leprosy in certain groups.			

Components Product Evaluation

In table 5 After conducting interviews and validation through source triangulation by comparing with the results of the review of source informants contained in the Source Triangulation Matrix, it is found that the Product Evaluation of the Leprosy Program at the Teminabuan Health Center of the South Sorong District Health Office is carried out as follows: The existence of leprosy services at Teminabuan Health Center, the existence of operational standards related to the management of leprosy treatment and the leprosy referral system at the health center,

there is only one person in charge of the program who is trained but not training but attending seminars, and the existence of promotional media in the form of leaflets.

Discussion

Komponen cipp evaluation

Stufflebeam and his team at the Center for Studies and Evaluation at Ohio University introduced the CIPP model in the early 1970s. It is one of the most well-known and useful approaches in managerial education evaluation¹⁶. The CIPP evaluation model evaluates the quality of educational programs.

The model stems from the idea that various factors influence the success of educational programs, such as the characteristics of students and their environment, the objectives of the program and the tools used, the procedures and mechanisms for implementing the program, and the CIPP evaluation model views the program as a system. If the evaluator team decides that the CIPP model will be used to evaluate the assigned program, then the analysis should be based on its components¹⁷ &¹⁸. The purpose of the CIPP model is not to record the achievement of goals, but to help improve the quality of the program¹⁹.

The CIPP evaluation model consists of four components, which stands for the term CIPP: context, input, process, and product¹⁷&¹⁸.

Context Evaluation

A context evaluation is an attempt to reveal and detail the environment, population and sample to be served, unmet needs, project objectives, and supporting assets. It provides the rationale for justifying a particular type of program intervention. Current needs include all that is necessary or beneficial to achieve achievable goals¹⁷&¹⁸.

Based on the results of the research found at the Teminabuan Health Center in the South Sorong District Health Office Context Evaluation of the Leprosy Program at the Puskesmas, health workers involve cadres to educate the community about the symptoms of leprosy and the importance of examinations at the Puskesmas, with the aim of reducing leprosy cases. Promotive activities outside the building received a positive response from the community, showing support for leprosy prevention. Cross-sectoral cooperation between the sub-district, village head, family welfare empowerment, and cadres strengthens support for prevention programs. The government and Puskesmas cooperate in the procurement of drugs and reagents,

contributing to the reduction of leprosy transmission.

Meanwhile, from the results of document review and observation, it was found that at the Teminabuan Health Center there are leprosy services and monthly routine reports as well as leprosy program activities in the annual activity implementation plan. However, there is no promotional media in the form of posters; only leaflets are available. There is a budget for leprosy program activities and leprosy drugs are available at the Puskesmas pharmacy. There is no evidence of commitment with cross-sectors.

And the results of the source informant from the person in charge of the Leprosy Program at the Health Office support this statement, stating that individual and community empowerment in the leprosy program is carried out by health workers through leprosy cadres for treatment supervision and discovery of new cases. The community response to efforts to reduce leprosy rates is very positive. Cooperation across sectors and with the Health Office is good in services, drug procurement, and examination reagents.

Input Evaluation

An input evaluation will help provide information on the allocation of resources needed for the proposed program. In addition, an input evaluation is useful in determining what is needed to achieve the objectives determined in the context evaluation²⁰&²¹.

Based on the results of the research found at the Teminabuan Health Center at the South Sorong District Health Office, the Input Evaluation of the Leprosy Program at the Puskesmas is that the leprosy health program is managed by health workers with one main person in charge, involving various work units, and supported by a referral system, village cadres, and village heads, as well as adequate facilities and infrastructure. Field constraints

are overcome with sufficient vehicles and Health Operational Assistance for transportation. The budget is managed through non-cash cash directly into the account of the person in charge, ensuring efficient administration and implementation of the program.

Meanwhile, from the results of document review and observation at the Teminabuan Health Center, it was found that the Teminabuan Health Center has a leprosy service and a decree of the person in charge of the leprosy program. However, there was no documentary evidence of cross-sector commitment to the leprosy program. There is a work plan and budget that covers the leprosy program.

And the results of the source informant from the person in charge of the Leprosy Program at the Health Office support this statement stating that in each puskesmas, there should be at least 3 health workers for the leprosy program, but currently there is only 1 officer in charge. The readiness of health workers in 16 puskesmas in South Sorong District is not optimal due to lack of training, although they are still ready to provide services. Facilities and infrastructure for leprosy services are adequate. Financing for the leprosy program comes from the operational funds of the puskesmas as well as special autonomy funds and special allocation funds for the Health Office.

Proces Evaluation

The process focuses on program activities, resources, and stakeholder roles. The aim is to answer questions about the implementation of program activities, the use of available resources, and the acceptance and execution of roles by participants²².

Based on the results of the research found at the Teminabuan Health Center at the South Sorong District Health Office, the Leprosy Program Evaluation Process at the Puskesmas

is Counseling on leprosy is carried out through leaflets and direct discussions. The screening system is done in the field with referral to the health center. The community generally complies with health recommendations, but there are challenges in changing behavior and overcoming stigma. Achievement of health promotion performance was measured based on survey targets and questionnaire distribution to achieve a set annual average score.

From document review and observation, Teminabuan Health Center provides leprosy services and uses leaflets as promotional media. There are operational standards for the leprosy referral system in the field and monthly reports on leprosy.

And the results of the source informant from the person in charge of the Leprosy Program at the Health Office support this statement. Puskesmas do not place posters, but use leaflets and brochures for counseling at posyandu. The leprosy program is implemented in various locations, including schools, health centers, and households for screening of household contacts. Health counseling increases community awareness, which accelerates treatment seeking if leprosy symptoms are found, potentially increasing the number of new cases.

Product Evaluation

In product evaluation, this stage is to evaluate the results achieved at the end of the program. It is an evaluation in which the data of the implemented program, i.e. the product, is examined, and how the program operated and made a profit. An answer is sought to the question of whether the program has achieved the expected or desired results^{23&24}.

Based on the results of the research found at Puskesmas Teminabuan in the South Sorong District Health Office, the Leprosy Program Evaluation Product at Puskesmas is the implementation of leprosy treatment at puskesmas involves examination of household

contacts, drug supervision, and referral to hospital if necessary. Major constraints include drug shortages, denial of service, lack of health worker training, and limited funding. Improvement efforts include mapping, counseling, active screening at the neighborhood level, and community group activities. Health promotion focuses on counseling, prevention, and treatment. Success depends on implementation according to operational standards and accuracy of population data. Performance evaluation is done by comparing real and estimated data, with performance considered maximized if the real data matches the population. Personalized approaches such as "door to door" visits are considered effective, especially for leprosy treatment in certain groups.

From document review and observation, the Teminabuan Health Center provides leprosy services and has operational standards for treatment and a referral system for leprosy. There is one person in charge of the program who is trained through seminars, not formal training. Promotional media in the form of leaflets are available.

Informants from the person in charge of the Leprosy Program at the Health Office stated that the Health Office conducts monitoring and evaluation of the leprosy program at puskesmas to overcome obstacles in reporting and finding new cases. The main constraints are the lack of funding and limited drug stocks, which can cause delays in treatment. Strategies include direct treatment to prevent disability and screening of household contacts to prevent transmission. Cross-sectoral and stakeholder cooperation is essential in managing leprosy cases.

Conclusion

The conclusion in this study is that the evaluation of the implementation of the leprosy program using the CIPP Evaluation Model's in the evaluation context and evaluation process

has gone well, while the evaluation input and evaluation product still have shortcomings such as the lack of program holders, the data processing system that has not been integrated, the lack of availability of drugs and training of health workers.

Suggestions in this study to the Puskesmas Teminabuan South Sorong Regency to be able to add the number of program holders, especially leprosy, so that it can run optimally, increase counseling activities so that people better understand the dangers, potential and transmission of this disease and improve integrated data processing systems. It is hoped that more people will conduct research using the CIPP evaluation model on other programs.

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