

THE ROLE OF THE BINTAN REGENCY GOVERNMENT IN CONTROLLING CASES OF MALARIA (Case Study of Gunung Kijang District)

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Abstract

Keywords:

Malaria,
Disease Control,
Role of Government.

Malaria remains a public health problem in tropical areas, particularly Bintan Regency. This study analyzes the government's role as regulator, facilitator, and dynamizer in malaria control efforts using qualitative case study methodology. Data was collected through in-depth interviews with four key informants: Health Office, Health Center, Malaria Cadre, and Community representatives. Results show that as a regulator, while the government lacks specific malaria control policies, the Health Office develops regional prevention and treatment policies while ensuring budget availability through health programs. As a facilitator, the government provides health facilities and infrastructure including mosquito nets, rapid test kits, and officer/cadre training, while actively conducting public education through counseling and communication media. As a dynamizer, the government establishes cross-sector cooperation and activates community participation through local cadres and organizations to enhance malaria prevention awareness. The study concludes that all three government roles are operational but require strengthening, particularly in cross-sector coordination and program sustainability. Recommendations include improving policy monitoring, continuous training, and active community involvement throughout all malaria control program stages.

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INTRODUCTION

Health is a fundamental need that must be met by the state as a form of protection for citizens from the spread of dangerous diseases. The state has the authority to determine political policies to achieve shared goals, including providing health insurance for its citizens (Arifin, 2023).

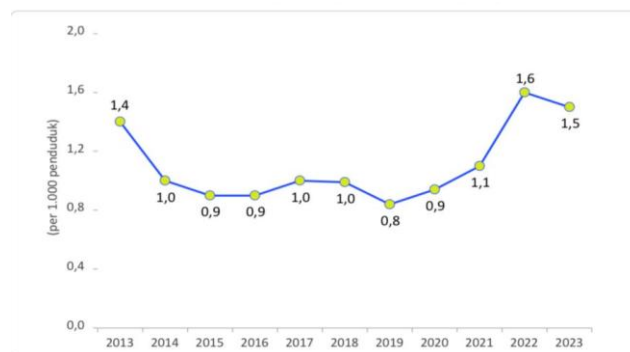


Malaria is an infectious disease caused by the plasmodium parasite, transmitted by infected mosquitoes. A tropical and subtropical disease, malaria infects nearly 250 million people annually, resulting in over 600,000 deaths. This disease is a global health problem that must be eradicated, particularly affecting children, pregnant women, and communities with limited access to health care (Yusuf et al., 2024) .

Anopheles mosquitoes breed in various habitats such as lakes, reservoirs, ponds, ditches, rice fields, and both permanent and temporary bodies of water. These environmental factors significantly influence mosquito populations and the risk of malaria transmission (Handayani et al., 2024) . As an archipelagic country with a diverse climate, Indonesia is vulnerable to climate change, which can affect the spread of infectious diseases. Malaria transmission is related to humans as hosts, the presence of parasites in female mosquitoes, and the environment as a breeding ground for vectors (Supranelfy & Oktarina, 2021) .

The Ministry of Health reported 250,644 malaria cases in Indonesia in 2019, with 86% occurring in Papua (216,380 cases), followed by East Nusa Tenggara (12,909 cases) and West Papua (7,079 cases). A total of 300 districts/cities (58%) have been declared epidemic-free, meaning 77.7% of Indonesia's population (208.1 million people) live in malaria-free areas. The malaria control plan aims for gradual elimination by 2030, with certification assessment from the WHO (Ministry of Health, 2021) .

Although malaria cases increased in 2023, with 3,464,862 tests compared to 3,358,447 in 2022, the number of positive cases actually decreased from 443,540 cases in 2022 to 418,546 cases in 2023. However, the national target of <5% malaria positive cases has not been achieved, with a national score of 12.08% in 2023 (Rokom, 2024) .



**Figure 1 Paracite Incidence)
Per 1,000 Population in Indonesia 2013-2023**

Malaria eradication is a national and regional priority due to its endemic nature. Each district has its own environmental characteristics and priorities, including geographic conditions that influence local health, such as environmental conditions, population behavior, and access to health services (Kinansi et al., 2021) .

Deputy Minister of Health Dante Saksono Hartono stated that the achievement of reducing cases was the result of five strategies implemented in collaboration with local governments: issuing comprehensive policies to increase testing and diagnosis, increasing surveillance, providing treatment, controlling risk factors, and increasing the role of the private sector and the community (Wisnubroto, 2024) .

Malaria elimination is an effort to stop the spread of malaria in a specific area through vigilance and preventive measures to prevent re-infection. Elimination success is

measured by the absence of malaria cases for three consecutive years and the ability to implement effective surveillance (Malino et al., 2023) .

The Ministry of Health issued Regulation of the Minister of Health of the Republic of Indonesia Number 22 of 2022 concerning Malaria Control which states that malaria has an impact on the decline in the quality of human resources and causes socio-economic problems, so that integrated and sustainable control efforts are needed. Article 25 of Regulation of the Minister of Health No. 22 of 2022 stipulates the responsibilities of the Regency/City Regional Government including: creating and implementing Malaria Control program policies in accordance with national and provincial policies; distributing drugs, equipment, and materials to community health centers and other health service facilities; providing support for the provision of needed drugs, equipment, and materials; improving the technical capabilities of human resources; conducting advocacy and cross-program and sectoral collaboration; developing communication, information, and education media according to local conditions; establishing and implementing a quality control system for laboratory networks at the district/city level; implementing monitoring of the efficacy and resistance of anti-malarial drugs and insecticides; implementing malaria surveillance and information systems; and implementing activities to control Extraordinary Events (KLB) of Malaria.

This regulation aims to achieve national malaria elimination by 2030 and maintain it in response to the high health and socioeconomic burden. The elimination target is being implemented in stages using evidence-based strategies including early detection, effective treatment, and control of the *Anopheles* mosquito vector.

Bintan Regency in the Riau Islands Province experienced a drastic decline in malaria cases, from 46 in 2022 to zero in 2023. This success was the result of increased access to health services, strengthened vector control, and public education campaigns.

Table 1. Malaria Cases in Bintan Regency

No	Subdistrict	Year		
		2021	2022	2023
1	Bintan Bay	0	2	0
2	North Bintan	0	0	0
3	Sebong Bay	5	20	0
4	Kuala Lobam Series	0	0	0
5	East Bintan	3	1	0
6	Mount Kijang	8	23	0
7	Mantang	0	0	0
8	Bintan coast	1	0	0
9	Toapaya	0	0	0
10	Tambelan	0	0	0
Bintan Regency		17	46	0

Source: Bintan Regency Health Office, 2025

Gunung Kijang District recorded the highest number of cases in 2022, with 23 out of the 46 cases in the district. Its geographical conditions, including coastal areas, water bodies, stagnant water, and dense vegetation, make it an ideal breeding ground for vector mosquitoes. The majority of residents work as fishermen, farmers, or field workers, with

frequent outdoor activities, especially at night, increasing the potential for exposure to mosquito bites carrying the malaria parasite.

Bintan Regency's success serves as an example for other regions on the road to malaria elimination by 2030. House wall spraying, insecticide-treated bed net distribution, cross-sector collaboration, and education are key to maintaining malaria-free status. Malaria control is a national government strategy for controlling infectious diseases by 2024, with a focus on HIV/AIDS, tuberculosis, and malaria, aiming for eradication by 2030 (Diskominfo, 2024) .

Challenges to maintaining malaria-free status include high population mobility, geographic conditions, and community dependence on the natural environment, which require ongoing management. Research on the Bintan Regency government's role in malaria control is crucial for analyzing implemented strategies and their sustainability, particularly in Gunung Kijang District, the area with the highest number of cases in the previous period.

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Role

(Soekanto, 2007) defines a role as a dynamic process of position or status. A person is said to have fulfilled their role if they exercise the rights and obligations appropriate to their position. A role is essentially a series of specific behaviors resulting from a person's position, where personality influences how the role is carried out, whether by top-, middle-, or junior-level leaders.

(Sutarto, 2009) suggests three components of a role: role conception as a person's belief about what should be done in a particular situation; role expectations as others' expectations of a person's behavior in a particular position; and role implementation as a person's actual behavior in a particular position. When these three elements work in harmony, social interactions become continuous and smooth. Narwoko & Suyanto (2007) state that roles have the function of providing socialization guidance, passing on traditions and values, uniting society, and enlivening control and supervision systems. Rasyid (in Labolo, 2014) identifies three indicators of the government's role in community empowerment: regulators who provide guidance through regulations and supervision; dynamicators who encourage participation and maintain development dynamics through effective guidance; and facilitators who create conducive conditions and provide training, education, and financial support.

Local government

Law Number 23 of 2014 defines regional government as the implementation of government affairs by regional governments and regional people's representative councils according to the principles of autonomy and assistance tasks with the principle of the broadest possible autonomy in the system of the Unitary State of the Republic of Indonesia. In accordance with Article 18 paragraph (7) of the 1945 Constitution, the structure and procedures for the implementation of regional government are regulated by law with the aim of accelerating the realization of community welfare through improving services, empowerment, and community participation (Rahayu, 2022) .

The transfer of authority to regions impacts the autonomy of local governments, providing them with the opportunity and flexibility to manage their own government affairs. This directly impacts the concept of central-regional relations in governance,

where the delegated authority regulates and controls the implementation of government in the regions (Elcaputera, 2021) .

Malaria

Malaria is an infectious disease that can reduce productivity, cause economic losses, and significantly increase infant and adult mortality. It is transmitted through the bite of the Anopheles mosquito and can affect people of all ages, with more than half the world's population living in malaria-endemic areas. In developing countries, including Indonesia, malaria claims a significant toll, resulting in high medical costs and job losses. Infection during pregnancy can lead to miscarriage and low birth weight.

Malaria is influenced by four main factors: environment, behavior, health services, and genetics. Malaria incidence is strongly influenced by local characteristics, namely human and mosquito ecology, as well as economic activity processes (Sutarto & Cania, 2017) . Although the government has implemented various control efforts, malaria prevalence remains relatively high in many areas (Aziz, 2025) . Factors contributing to the increase in malaria cases include seasonal changes, especially the rainy season, which favors the development of disease-transmitting mosquitoes (Wulan et al., 2022) . Indonesia, as an archipelagic country with a heterogeneous climate, is potentially experiencing regional and global climate change that affects the spread of infectious diseases. Malaria is a re-emerging disease due to natural phenomena, including environmental factors such as climate, temperature, and rainfall, with the risk determined by the type of Anopheles mosquito species, human behavior, and the malaria parasite itself (Utami et al., 2022) .

METHOD STUDY

This study uses a qualitative approach with descriptive methods to gain an in-depth understanding of the role of the Bintan Regency Government in controlling malaria in Gunung Kijang District (Moleong, 2014 ; Sugiyono, 2019) . The selection of the research location in Bintan Regency, specifically Gunung Kijang District, was based on the phenomenon of a significant decrease in malaria cases in 2023 compared to other districts in the Riau Islands. Data collection was carried out through in-depth interviews and documentation (Sugiyono, 2013 ; Agustini et al. 2023) . Primary data were obtained from interviews with ten informants consisting of Mrs. Yuliana as an Infectious Disease Analyst at the Bintan Regency Health Office, Mrs. Asnovita Kurniati from the Kawal Gunung Kijang Community Health Center, Mrs. Idawati as a Malaria Cadre in Malang Rapat Village, and seven people who had been affected by malaria (Sugiyono, 2016 ; Siyoto & Sodik, 2015 ; Hermawan, 2016 ; Abdussamad, 2021) . Secondary data were obtained from documents, journals, and related literature (Sugiyono, 2010) . Data analysis used the Miles and Huberman model which includes data reduction, data presentation, and drawing conclusions to ensure the validity and accountability of the research results (Moleong, 2006; Hartono, 2018) .

RESULTS AND DISCUSSION

The Role of Government as a Regulator in Controlling Malaria Cases

The government's role as a regulator in controlling malaria includes the function of formulating, establishing, and implementing policies that regulate the actions of communities, institutions, and various sectors to create order and achieve common goals.

Although regional regulations such as the Regent's Regulation (Perbup) and the Regional Action Plan (RAD) for the management of AIDS, TB, and Malaria are still in the drafting stage, the Bintan Regency Health Office has demonstrated high commitment through the implementation of a comprehensive program that includes education and outreach to the community, larvasiding activities, spraying house walls, cross-sector collaboration, and distribution of mosquito nets. The Kawal Gunung Kijang Community Health Center has even implemented an innovative treatment monitoring system using Google Forms, where people infected with malaria are asked to send photos while taking medication as proof of compliance during the 14 days of treatment.

The success of malaria control in Bintan Regency is evident in the drastic decline in cases from 46 in 2022 to zero in 2023, reflecting the effectiveness of a collaborative approach between the government, health workers, malaria cadres, and the community. Malaria cadres play a vital role in early detection through blood sampling of symptomatic residents and assistance in mutual cooperation activities to clean up *Anopheles* mosquito breeding sites. Active community participation, particularly in Malang Rapat Village, is manifested in routine activities to clean water channels and swamps clogged with sea sand to prevent stagnant water that becomes a habitat for *Anopheles* mosquitoes.

The malaria control program in Bintan Regency demonstrates the success of a public health approach that prioritizes collaboration and innovation. Education and health promotion are crucial pillars, conveying specific prevention information, such as the use of mosquito nets while sleeping and the importance of completing treatment. The achievement of malaria elimination by 2023 demonstrates that well-designed interventions involving various stakeholders can produce significant results in addressing infectious diseases at the regional level, while also reflecting positive changes in community behavior toward malaria prevention and control efforts.

The Role of the Government as a Dynamic Agent in Controlling Malaria Cases

The government's role as a dynamic force in malaria control is realized through efforts to encourage and facilitate change and innovation by mobilizing various elements, including the community and the private sector, to collaborate in case prevention and control. The Bintan Regency Health Office actively provides guidance, supervision, training, direction, and guidance to community health centers (Puskesmas) to ensure effective malaria control. Puskesmas then developed their role not only as providers of medical services, but also as facilitators, encouraging community involvement through malaria cadres with a promotive and preventive approach. The health office also conducted immigration surveys in collaboration with the Port Quarantine Office to monitor people entering Bintan, including conducting surveys of TNI members at bases such as Teluk Bintan, Tanjung Uban, and Sri Bintan as part of a comprehensive, cross-sectoral approach.

Malaria cadres play a strategic role as a bridge between formal health services and the community. Training provided by community health centers not only improves their technical skills but also strengthens their confidence as agents of change in society. The success of cadres is largely determined by consistent support through ongoing training, the provision of work tools such as early detection tools and educational materials, and dedicated mentoring from the community health center. The rapid response of the Health Office and community health centers during a spike in malaria cases by directly working with malaria cadres demonstrates strong synergy between health agencies and the

community, accelerating case detection and breaking the chain of malaria transmission.

Communities have demonstrated a greater understanding of the dangers of malaria as a result of education and direct outreach conducted by health offices, community health centers, and community health workers. This awareness is reflected in their active participation in prevention activities and their openness to visits and guidance from health workers. However, the main challenge is maintaining consistent long-term community behavior change, especially when some people do not participate in outreach. Therefore, regular evaluation and equitable distribution of information throughout the community are necessary to maximize the effectiveness of malaria control programs.

The Government as a Facilitator in Controlling Malaria Cases

The government's role as a facilitator in malaria control is realized through the provision of various supports to create a supportive atmosphere for the control program to run smoothly. The Bintan Regency government provides support facilities in the form of transportation budgets for cadres when carrying out Surveillance-Based Management (MBS) activities and malaria health service operations, as well as providing information media such as banners to support public education. Community health centers also receive support in the form of BOK (Health Operational Assistance) budgets, new health equipment, larvicide, malaria slide books for blood sampling activities, and Rapid Diagnostic Test (RDT) equipment that allows cadres to conduct early detection of malaria cases directly in the community. The availability of larvicide and mosquito nets also strengthens vector control measures in the surrounding environment, so that cadres are more effective in carrying out their responsibilities in the field.

This facility support demonstrates the government's commitment to strengthening the role of community-based health workers as the spearhead of community-based health services. Transportation assistance not only facilitates fieldwork but also serves as official recognition of their contributions to the health care system. Adequate equipment better prepares community health centers (Puskesmas) to support the work of community health workers, particularly in managing blood samples, reporting cases, and coordinating follow-up medical care. The community experiences greater ease in accessing services, particularly for blood sampling, as they eliminate the need to travel long distances to the Puskesmas and simply visit the community health worker's home for an initial examination.

The positive response from cadres and the community demonstrates that these facilities and programs provide tangible, immediate benefits, with local-level health services accelerating the response to malaria symptoms and encouraging community participation in early detection efforts. The presence of cadres in initial services contributes to a sense of security and increases public trust in health services, making access to services more accessible, faster, and more efficient. While current facilities are considered adequate, there is still hope for additional facilities in the future, reflecting the desire to improve the quality and completeness of equipment and supporting facilities for more optimal malaria control efforts.

CONCLUSION

Malaria control efforts in Bintan Regency have shown highly effective results, achieving zero local malaria cases by 2023, a result of synergy between the local government, health office, community health centers, malaria cadres, and the community.

The Bintan Regency Government has successfully carried out its strategic role as a regulator through the formulation of a Regent's Regulation and Regional Action Plan, demonstrating its commitment to making malaria a priority health issue. It has also acted as a dynamic force through guidance, training, and technical direction to ensure effective program implementation with a rapid response to cases. It has also acted as a facilitator through the provision of concrete support such as RDTs, mosquito nets, larvicides, transportation assistance for cadres, and information media. The innovative use of Google Forms to monitor medication adherence and the high level of community participation in environmental cleanup activities reflect the success of building an integrated system involving various sectors and local communities, thus serving as a good example for other regions in achieving the national malaria elimination target by 2030.

To maintain and strengthen the achievement of malaria elimination in Bintan Regency, several strategic efforts are required from various parties. The local government needs to immediately finalize the drafting of the Regent's Regulation regarding malaria control as the legal basis for program implementation, strengthen routine monitoring and evaluation mechanisms, and improve the quality and frequency of training for health workers and malaria cadres. Community health centers (Puskesmas) must maintain and develop innovative Google Form-based monitoring, expand outreach coverage to areas that have not yet been optimally accessed, and strengthen their advocacy function through regular home visits. Malaria cadres need to be more active in early detection, optimize the use of available budgets and supporting tools, and build good communication with the community to strengthen trust and collaboration. Meanwhile, the community is expected to continue to comply with the recommendations of health workers, especially regarding completing treatment, promptly reporting suspicious symptoms, regularly using insecticide-treated bed nets, and maintaining environmental cleanliness, especially in swampy areas and stagnant water that have the potential to become breeding grounds for *Anopheles* mosquitoes.

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