

Study of Successful Malaria Elimination Program at Teluk Bintuni District

Franky Dominggus Mobilala¹, A.L. Rantetampang², Bernard Sandjaja³, Arry Pontiku⁴, Rosmin Tingginehe⁵, Sarce Makaba⁶, Anwar Mallongi⁷

¹Magister Program of Public Health, Faculty of Public Health, Cenderawasih University, Jayapura.

²⁻⁶Lecturer of Master Program in Public Health. Faculty of Public Health, Cenderawasih University, Jayapura

⁷Environmental Health Department, Faculty of Public Health, Hasanuddin University, Makassar

Corresponding Author: Anwar Mallongi

ABSTRACT

Background: Malaria is still a health problem in the world, including in Indonesia. West Papua Province is endemic to malaria. The efforts made by the Bintuni Bay District have been successful in malaria engineering related to malaria control programs that are influenced by the quality, quantity and distribution of health workers, logistical continuity, cross-sector coordination, community participation, malaria control according to early case findings and accurate treatment (early diagnostic accurate treatment), consistency of government policies, financing and surveillance systems.

Objectives: Study Of Successful Malaria Eliminate Program At Teluk Bintuni District

Methods: Qualitatively implemented in November - December 2018. Informants were 26 people. Data obtained using in-depth interviews and analyzed qualitatively.

Results: The quality and quantity of distribution of malaria control health workers has been carried out well with the presence of microscopic energy and energy. The sustainability of malaria logistics in the Bintuni Bay Regency is adequate. Cross-sectoral coordination in the identification of malaria has been carried out properly. Community participation in malaria control is quite good. Malaria control has been carried out well through the EDAT program in the establishment of village malaria interpreters in taking blood and treating malaria. Consistent policy of the

government of Bintuni Bay District is very supportive in eliminating malaria. The surveillance system runs optimally. Malaria coverage is based on regent regulation No. 11 is predicted to reach the set target.

Keywords: *The Succesfull Eliminate, Malaria Program, Teluk Bintuni District*

1. INTRODUCTION

Indonesia targets malaria elimination in 2030 and in the Ministry of Health's Strategic Plan In 2015-2019 malaria elimination is one of the targeted diseases to reduce the illness rate from 2 per thousand population to 1 per 1,000 population. The target of malaria elimination in Indonesia in 2019 from the 2012 results of 212 increased to 300 Regencies / Cities (RI Ministry of Health, 2015). Malaria morbidity in an area is determined by Annual Parasite Incidence (API) per year. API is the number of malaria positive cases per 1,000 residents in one year. National API trends in 2011 (API, 175) to 2015 (API 0.85) continued to decline which can be seen in the graph of the Malaria API trend in Indonesia in 2011 - 2015.

Malaria prevention efforts have been carried out since 1959 which was marked by the launching of the malaria eradication program known as the "Malaria Extermination Command" (KOPEM) by President Soekarno. In 2000 the community movement was known as the Movement to Fight Back Malaria or "Gurgling Malaria" which was followed by various sectors with the slogan "Let's Fight Malaria".

Furthermore, malaria control in Indonesia enters the phase of malaria elimination as stipulated in the Decree of the Minister of Health of the Republic of Indonesia Number 293 / MENKES / SK / IV / 2009 which aims to create healthy living communities, which are gradually free from malaria transmission until 2030 (RI Ministry of Health, 2013).

Research in Bali Province by Roosiermiatie and Rukmini (2013), about the analysis of the implementation of malaria elimination policies in Bali Province showed the success of the API decline. This success is based on an understanding of the malaria elimination policy regarding the procedures for implementing malaria elimination in Bali Province and the Regulation of the Regent of Karangasem No. 2 of 2010 concerning elimination of Malaria in Karangasem Regency is sufficient in accordance with the central strategy. Funding for malaria elimination policies in Bali Province and Karangasem Regency still relies on funds from the APBD. The role of the regional government to support the malaria elimination policy is quite good, local government support in the form of policy / regulatory support, budgeting and socialization activities. Bintuni Bay Regency has declared malaria elimination in West Papua Province in 2020 which can be seen in Figure 1.3 in 2009 - July 2018.

The elimination phase is expected to be achieved by 2020 malaria cases become zero, there are only imported cases or cases from outside the Bintuni Bay Regency area considering the location of the Bintuni Bay Regency which is the gateway to West Papua Province so that population mobility is quite high, and this means difficult to control the entry of malaria cases from outside the Bintuni Bay Regency. Furthermore, at the maintenance stage, if for two years until 2026 local cases remain zero and if there are cases of malaria, these cases originating from outside the area must be quickly detected and carried out so that treatment is not contagious to the residents of Bintuni Bay Regency.

Based on preliminary studies from interviews with the Head of the Bintuni Bay District Health Office, the efforts of the Bintuni Bay government in suppressing malaria cases by making the EDAT program (early diagnostic accurate treatment) invite the participation of the community to actively participate in malaria elimination programs in the area as health cadres or health volunteers who are trained to be able to provide early treatment for malaria, in addition to diagnosing malaria in patients, they are also given provisions in terms of drug administration, prevention and reviving community movements. In addition, some programs are aimed at eliminating malaria with planning management carried out by Bintuni Bay District in malaria elimination.

Based on this, the researchers were interested in conducting research under the title of Study of the Success of the Malaria Elimination Program in the Bintuni Bay Regency of West Papua Province.

2. MATERIALS AND METHODS

2.1. Type of Research

This type of research is qualitative descriptive research. Syaodih (2008) states that descriptive research is the most basic form of research. Aimed at natural or human engineering conditions. According to Syaodih (2008) in Pongtiku, et al (2016) that qualitative research is a study aimed at describing and analyzing phenomena, events, social activities, attitudes, beliefs, perceptions, thoughts of individuals individually and in groups ". This type of research is qualitative with a case study approach, which is a method of research conducted with the aim of describing the problem that occurs to conclude the image objectively (Swarjana, 2013). Focus on research to understand the factors that influence the success of the Malaria Elimination Program in Bintuni Bay District.

2.2. Place and Time of Research

1. Place

This research was conducted at the Bintuni Bay District Health Office.

2. Time of research

The time of the study took place in October 2018.

2.3. Informant

The informants in this study were all policy makers at the Bintuni Bay District Health Office as key informants related to malaria elimination efforts totalling 17 people plus 9 people from community representatives.

The selection of informants is done by using a purposive sampling technique, namely taking selected informants is seen to be more clear about malaria elimination (Saryono and Anggraeni, 2010), and can be trusted to be a good source of data and able to express opinions properly and correctly (Notoadmodjo, 2012) The key informants in this study were the Head of Bintuni Bay District Health Office 1 person, Head of Health Problems Control Division 1 person, Head of Section for Eradication of Communicable Diseases 1 person, Responsible for the Control and Eradication of Malaria 1 person, Head of Community Health Center in 13 work areas of Teluk Bintuni Regency as many as 13 person. Thus the number of informants was 17 people and as many as 9 people from representatives in the Puskesmas working area.

3. RESEARCH RESULTS

3.1. Characteristics of Informants

a. The main informant

Table 1. Characteristics of Main informants

No.	Name	Age (year)	Education	Position
Iu ₁	KL	50	S2	Health of Health Department Regency of Teluk Bintuni
Iu ₂	PS	47	S1	Ka.bid P2M
Iu ₃	WJ	54	S1	Ka. Sie P2M
Iu ₄	NH	44	D3	Malaria Responsibility person

Table 1. Respondents who were the main informants as many as 5 people consisted of the Head of the Bintuni Bay District Health Office, Head of the Health Problems

Control Section, Head of the Eradication of Communicable Diseases section and the person in charge of malaria

b. Supporting Informant

Table 4.2. Characteristics of supporting informants

No.	Name	Position
Ip ₁	DG	Head of Health centre of Farfurwar
Ip ₂	AK	Head of Health centre of Babo
Ip ₃	IL	Head of Health centre of Sumuri (Tofoi)
Ip ₄	AW	Head of Health centre of Sumuri (Tanah Merah)
Ip ₅	NT	Head of Health centre of Aroba
Ip ₆	TM	Head of Health centre of Kaituro
Ip ₇	MR	Head of Health centre of Kuri
No.	Name	Position
Ip ₈	HS	Head of Health centre of Wamesa
Ip ₉	SS	Head of Health centre of Bintuni
Ip ₁₀	SA	Head of Health centre of Manimeri
Ip ₁₁	OW	Head of Health centre of Tuiba
Ip ₁₂	HM	Head of Health centre of Dataran Beimes
Ip ₁₃	LG	Head of Health centre of Tembuni
Ip ₁₄	PR	Head of Health centre of Aranday
Ip ₁₅	HN	Head of Health centre of Kamundan
Ip ₁₆	AW	Head of Health centre of Werigar

Table 2 shows that the number of informants who were used as supporting information sources as many as 16 heads of Puskesmas from the 24 heads of Puskesmas was caused by not being present in focus group discussions.

c. Ordinary Informant

Table 3. Characteristics of ordinary informants

No.	Name	Living address
Ib ₁	UM	Community in Health centre area of Farfurwar
Ib ₂	IG	Community in Health centre area of Babo
Ib ₃	FA	Community in Health centre area of Sumuri (Tofoi)
Ib ₄	DRN	Community in Health centre area of Sumuri (Tanah Merah)
Ib ₅	FI	Community in Health centre area of Aroba
Ib ₆	SE	Community in Health centre area of Kaituro
Ib ₇	HI	Community in Health centre area of Kuri
Ib ₈	AS	Community in Health centre area of Wamesa
Ib ₉	HS	Community in Health centre area of Bintuni

Table 3 shows that the number of informants used as regular sources of information was 9 people representing each region, namely 9 Puskesmas.

Based on Table 4 shows that the quality of microelectric power with the level of Chemistry Analysis Secondary School education still does not meet the requirements because the level of education should be at least Diploma Three (D3) and if viewed in terms of quantity of micropic power and Survilans is still very lacking because there are 10 health centers that only

have 1 microelectric power and 1 the whole microscopist and surveillance surveillance staff and even distribution. On staffs have received training.

d. Quality and Quantity of Distribution of Health Workers for malaria control

Table 4. Distribution of Health Workers in Each Health Service Unit in the Bintuni Bay Regency in 2018

No	District / Health Centre	Microscopis	Education	Survey lan/ Malaria program	Education
1	Health Centre Farfurwar	2	D3	1	D3
2	Health Centre Babo	1	SMAK	1	D3
3	Health Centre Sumuri (Tofoi)	2	SMAK	1	D3
4	Health Centre Sumuri (Tanah Merah)	1	D3	1	D3
5	Health Centre Aroba	2	SMAK	1	D3
6	Health Centre Kaituro	2	SMAK	1	D3
7	Health Centre Kuri	2	SMAK	1	D3
8	Health Centre Wamesa	2	SMAK	1	D3
9	Health Centre Bintuni	1	SMAK	1	D3
10	Health Centre Manimeri	2	SMAK	1	D3
11	Health Centre Manimeri (Muturi)	1	D3	1	D3
12	Health Centre Tuiba	1	SMAK	1	D3
13	Health Centre Dataran Beimes	1	SMAK	1	D3
14	Health Centre Tembuni	1	SMAK	1	D3
15	Health Centre Aranday	2	SMAK	1	D3
16	Health Centre Kamundan	1	SMAK	1	D3
17	Health Centre Weriagar	1	SMAK	1	D3
18	Health Centre Moskona Selatan	1	D3	1	D3
19	Health Centre Meyado	2	SMAK	1	D3
20	Health Centre Moskona Barat	2	SMAK	1	D3
21	Health Centre Merdey	2	D3	1	D3
22	Health Centre Masyeta	2	SMAK	1	D3
23	Health Centre Moskona Utara	2	D3	1	D3
24	Health Centre Moskona Timur	2	SMAK	1	D3
Number		38		24	

e. Continuity of Logistics

Table 5. Data on Acceptance, Use, Stock of Medicines and Materials Consumed by Bintuni Bay Regency in 2018

No.	Medicine name	Packet	Initial Stock 1 Jan 2018	Acceptance 2018	Usage 2018	Remain Desember 2018
1	ACT tablet	Paket	60	12,214	10,269	2005
2	Kina Tablet	Btl 1000 tablet	6	32	38	6
3	Kina Tablet	Kotak 60 tablet	0	300	198	102
4	Primakuin tablet 15 mg	Btl 1000 tablet	231	548	244	535
5	Pyrimetamin + Sulfadoksin tablet	Ktk 100 tablet	100	0	55	45
6	Qunine Dhcl inj	Ktk 30 tablet	354	300	302	352
7	Quinine Antipyrin Injeksi	Ktk 100 ampul	91	71	14	148
8	Artesunat Injeksi	Ktk 8 ampul	392	68	398	62
9	Artemeter Injeksi	Ktk 6 ampul	375	10	385	0
10	Doksisiklin kapsul 100 mg	Ktk 100 kapsul	312	296	289	319
11	Tetrasiklin kapsul 250 mg	Btl 1000 kapsul	378	672	484	566
12	Tetrasiklin kapsul 500 mg	Ktk 100 kapsul	313	235	273	275
13	RDT	Ktk 25 buah	0	2,920	560	2,360
14	Larutan Giemsa Stain	Btl 100 ml	54	35	2	87
16	Blood Lancet	Ktk 200 buah	268	378	284	362
17	Objek Glass	Ktk 72 lembar	390	125	71	444
18	Kelambu		32.000	32.000	30.000	2.000

Based on table 5, it can be seen that the use of medicines and consumables is generally sufficient, with the use of the most anti-malarial drugs being Arterakin (ACT) of 10,269 packages, except for those using injection artemether who experience a stock vacuum. While tools and consumables are available.

f. Cross Sector Coordination

Table 6. Cross Sector Coordination Data in the Malaria control program for 2018

No	Health development management policy program	Target	Realisasi (%)
1	Malaria Control Coordination Meeting	4	4 (100)
2	Technical Meeting on Malaria Control	4	4 (100)
3	Revised Meeting of the Malaria Control Plan	4	4 (100)

Table 6 shows that cross-sector coordination from the malaria control coordination meeting, the nature of malaria control, and the revision of the malaria control plan from 4 targeted meetings were carried out 4 times a year (100%).

The results of the interview concluded that in completing malaria in a year there were 4 meetings discussing technical matters and implementing malaria control and evaluating activities that had been carried out.

g. Community Participation in EDAT

Table 7. Cross Sector Coordination Data in the Malaria control program for 2018

No	Health Service Improvement Partnership Program	Target	Realisasi	%
1	Formation of Posmalkam	7	13	185,71
2	Village TOT - PLA Training	11	9	81,82
3	Malaria counseling from and for the community	17	3	17,65
4	Vector eradication (Community service, closing mosquito breeding sites, cleaning sewers and standing water	14	7	50
5	Healthy environment arrangement	12	8	66,67
6	Training on Advocating Malaria control for DHO and head of Puskesmas	6	4	66,67
7	Advocacy for malaria control to the Bupati, DPRD, Bappeda, DP2KA, ka. District and other decision makers	5	5	100
8	Socialization of mosquito repellent plants and mosquito predators	0	0	0
9	The implementation of a healthy environment competition to commemorate World Malaria Day	1	0	0

Table 7 shows that community participation in 2018 that met the target was the establishment of Kampung Malaria Post (Posmalkam) (185.71%) and malaria control advocacy to the Regent, DPRD, Bappeda, DP2KA and decision makers by 100%. Whereas those who did not reach the target were malaria counseling from and for the community (17.65%), vector eradication (Collaboration, closing mosquito breeding sites, cleaning gutters and standing water (50%), structuring healthy environment (66.67%), Training on Advocating Malaria control for DHO and Puskesmas heads (66.67%) While socialization of mosquito repellent plants and mosquito predators and the implementation of healthy environmental competitions to commemorate World Malaria Day, have not been implemented properly.

The results of interviews with ordinary informants show that the community participation program by forming village malaria interpreters in the PLA (Participatory learning of Action) by providing community participation learning with measures to control malaria by forming community groups. This shows that the PLA has been running well through the village malaria interpreter.

Table 8 shows that the Teluk Bintuni Regency government through the Health Office has planned and carried out activities in malaria control but that these activities have not all reached the target. The activities that were not realized were Entomological / Entomological Assistants and Outbreaks and Outbreaks (Training for Outbreaks of Malaria) which were not fully implemented), crosheker training (33%) and those who succeeded in achieving the targets were training Malaria management Puskesmas including interpreters of malaria kampung (100%), providing Malaria protection and reporting recording format (100%), spraying houses and the environment (150%), meeting data validation (100%) and monitoring evaluation (100%) while the target achieved in other activities is cross check slides in stages (53.85%), screening and treatment of malaria in pregnant women, infants and toddlers (89%), monitoring and evaluation Implementation of a referral system for handling malaria in accordance with the protocol, management of malaria cases (66%), training for spraying training recording of malaria data reporting (81.82%)

h. Malaria Control (EDAT)

Table 8. Data on malaria control through strengthening management in the Malaria control program in 2018

No	Program for Prevention and control of infectious diseases	Target	Realisation	%
1	There is the provision of Malaria protection and the Mass Blood Survey (MBS) reporting format, Mass Fever Survey (MFS)	19	19	100
2	Spraying homes and the environment (larvaciding, including the use of bacillus thuringiensis)	8	12	150
3	Cross check slides in stages	13	7	53,85
4	Screening and treating malaria in pregnant women, infants and toddlers	19	17	89 %
5	Monitoring and Evaluation (Implementation of a referral system for handling malaria in accordance with the protocol, management of malaria cases, etc.)	36	24	66 %
6	Malaria case management training for doctors, paramedics (Midwives, nurses)	4	2	50 %
7	Training of malaria program management staff for puskesmas including village malaria interpreters	24	24	100 %
8	Microscopic and croschecker training for laboratory personnel	3	1	33,33
9	Training of entomological / entomological assistants	0	0	0
10	Training for spraying workers Training on recording malaria reporting	11	9	81,82
11	Data validation meeting	6	6	100
12	Surveilans entomologi	4	2	50 %
13	Research on the results of the 2015 - 20178 malaria control program (included spleen rate survey)	2	2	100
14	Outbreaks and Outbreaks	0	0	0
15	Monitoring and Evaluasi	4	4	100

4. DISCUSSION

4.1. Quality and quantity of distribution of malaria control health workers

The adequate number of health workers and the knowledge of health workers is the ability of health workers to understand, diagnose and provide the right dose of treatment for people with malaria. The indicators that were assessed were the ability of health workers to diagnose and provide treatment doses quickly and precisely and counseling patients to improve compliance with malaria patients. If health workers understand, diagnose and provide appropriate treatment doses of patients with malaria (Hamzah, 2008).

In accordance with Permenkes No. 370 of 2014 regarding the standard microscopic D-III analyst, this was also referred to by the Decree of the Regent No. 11 of 2010 that the level of education of microscopists and malaria-level personnel was at least D-III. From the decision that the quality and quantity of the distribution of health workers to control malaria has not reached the target until 2018, with a lot of energy shortages and of course the number of energy needs for 2020 is difficult to achieve according to the target.

The results of the study are in line with those conducted by Rahmawati (2012), that evaluating malaria elasticity in the city of NTT for aspects of personnel / staff

management of malaria is still very minimal (2 people) even though the tasks and workload are quite large. In addition, Entomologists have not yet been in the puskesmas, even though Entomologist has an important role in efforts to break the chain of malaria transmission. Malaria eradication management staff consists of health workers and cadres who have participated in training at the level of Ternate City, North Maluku and regional provinces (Eastern Indonesia), then according to the parameters of evaluating the implementation of malaria eradication programs in Ternate City, the personnel / workforce aspects are assessed included in the bad category because the number of Ternate City DKK technical staff, Puskesmas, cadres and other agencies is not enough to implement a malaria eradication program, the number of personnel involved in malaria control cannot cover all target areas (not spread evenly) and all DKK City technical personnel Ternate, Puskesmas, cadres and other agencies are workers who do not have the appropriate educational background and all evaluate environmental management.

Attempts to achieve malaria elimination are many obstacles encountered in various places in the world such as in achieving malaria elimination in Ethiopia according to (Woyessa, 2013) a decrease in

malaria incidence observed in the past 3-4 years has not achieved the goal of malaria elimination due to individual awareness of environmental health risks reduce the occurrence of malaria infections. In Russia, technical problems occur in the final stages of the elimination program, namely difficulties in identifying patients and the absence of a very effective method for detecting malaria parasites and requiring the use of different treatment regimens and antimalarial drugs. Uncontrolled population migration is very important in the spread of infection in malaria-free areas. The urgent solution is to improve existing methods and develop new ones for infection detection and treatment and antimalarial policy packages.

In Indonesia the Government issued a Decree of the Minister of Health Number 293 of 2009 concerning Elimination of malaria in an effort to support the malaria elimination program. But as is the case in the Bintuni Bay District In an effort to achieve malaria elimination there are many obstacles that are encountered where there is a shortage of health workers and malaria experts. Lack of trained human resources and personnel is a major challenge to carry out malaria elimination planned for 2025.

Thus, the quality and quantity of the distribution of malaria control health workers in Bintuni Bay District has not been implemented properly and it is very likely that the target achievement cannot reach the target set by 2020.

4.2. Continuity of Logistics

The results showed that the sustainability of logistics in Bintuni Bay Regency was calculated in 2018 that the use of medicines and consumables was generally sufficient, with the most use of anti-malaria drugs being Arterakin (ACT) of 10,269 packages, except for those using injection artemethers who experienced stock vacancies. While tools and consumables are available. The vacancy is not constrained because it runs out in the allotted time, so that the logistical combination in Bintuni Bay Regency is adequate. This shows the

seriousness of the Bintuni Bay Regency Government in eliminating malaria by strengthening health services in combating malaria.

The results of the study are different from Rahmawati (2012) in Ternate City. For logistics, it is still considered to be lacking, this is due to limited funds. Two-wheeled vehicles at the Ternate City Health Office are limited enough to hamper operational activities considering that two-wheeled vehicles are very useful for use in areas that are quite difficult to reach using four-wheeled vehicles. The absence of computers at the puskesmas makes staff use more personal laptops in malaria eradication work, so the aspects of facilities and infrastructure are considered included in the medium category because the facilities used in implementing the program consist of program operational vehicles, spraying vehicles, spraying machines, laboratory materials, insecticides and equipment needed for malaria eradication are available, insufficient and in good condition.

According to the Indonesian Ministry of Health (2011), the Ministry of Health serves logistics in the form of drugs, reagents, medical devices, insecticides. To support the quality of services, the logistics mechanism needs to be present. This matrix also considers the number and quality of personnel who will regulate the entry and exit of goods, maintain the quality of goods, and control the presence or absence of puskesmas / pustu / polindes areas that run out of drugs or other items. In addition to the power factor, it is also necessary to have a warehouse that is feasible and meets the requirements for storing goods consisting of 2 parts, namely the drug warehouse and insecticide warehouse.

Statement from the main informant (Iu1), that: the efforts made, namely planning logistics based on reports from service facilities, then we predict in what year will the use of logistics be increased by ten to twenty percent, and include buffer stocks that must be prepared by the service. This is also stated by supporting information

(IP1) that "efforts in the procurement of logistics that have been carried out, namely through timely and correct reports for tools and reagents, are still dependent on the health department to procure it" The Bintuni Bay Regency Government based on Regent Regulation No. 11 of 2010 has been well implemented, by improving health services in treating the community by providing adequate logistics.

4.3 Cross Sector Coordination

The results of the study found that cross-sectoral coordination in malaria eradication was done by collaborating with the Coordination Meeting on malaria control, a technical meeting on malaria control and a meeting to revise the malaria control plan held every 4 years. The purpose of the implementation is to examine the results of cross-sectoral cooperation activities and the arrangement of the next quarter work plan Cross-sector specific objectives are discussions and are resolved jointly across sectors and the obstacles faced. New cross-sectoral work mechanisms / plans are formulated for future work plans (Bustami, 2011).

Cross-sector activities when linked to malaria elimination policies, activities are related to vector control efforts, environmental health management and health promotion. Malaria transmission can be minimized by controlling *Anopheles* Sp mosquitoes as malaria transmitting mosquitoes. Some vector control efforts that can be carried out in the malaria program are larvaciding (the controlling action of *Anopheles* larvae chemically using insecticides), biological controls (using larvae-eating fish), environmental management and others. Control of adult mosquitoes is done by spraying the walls of the house with insecticides (IRS / Indoors Residual Spraying) or using an insecticide-treated mosquito net. But it needs to be emphasized that vector control needs to be REESAA (rational, effective, efficient, sustainable, affective and affordable) given Indonesia's vast geographical conditions and diverse bionomic vectors so that mapping of

breeding places and mosquito behavior is very important (Pusdatin Kemenkes RI, 2011) . For this reason, the role of the government, all stakeholders and the community is needed in controlling malaria vectors.

The results of this study were not different from those of Roosiermiatie and Rukmini (2012) regarding malaria elimination policies in Bali Province, that cross-sectoral coordination was still lacking, even the cross-sectoral coordinators did not know the malaria elimination policy from the Governor of Bali. Cross-sectoral coordination in Teluk Bintuni Regency from informant interviews (Iu4), that "cross-sectors are still needed by comrades from other sectors to also participate in coordinating efforts to control malaria". This shows that cross-sector coordination in Bintuni Bay District shows a lack of commitment from policy makers in the Bintuni Bay Regency. This is also supported by the statement of all supporting informants that: Cross-Program coordination is carried out by Malaria Integration activities, both immunization and MCH, namely for KIA Skring Malaria activities for pregnant women and distribution of bed nets and for immunization for providing mosquito nets for those who finish measles immunization, across sectors do PLA activities

4.4. Community Participation

The results showed that community participation in 2018 that met the target was the establishment of Kampung Malaria Post (Posmalkam) (185.71%) and malaria control advocacy to the Regent, DPRD, Bappeda, DP2KA and 100% decision makers. Whereas those who did not reach the target were malaria counseling from and for the community (17.65%), vector eradication (Collaboration, closing mosquito breeding sites, cleaning gutters and standing water (50%), structuring healthy environment (66.67%), Training on Advocating Malaria control for DHO and Puskesmas heads (66.67%) While socialization of mosquito repellent plants and mosquito predators and

the implementation of healthy environmental competitions to commemorate World Malaria Day, have not been implemented properly.

The results of the Lestasri study (2012), before the Malaria Center was formed, the health office in North Maluku Province carried out health promotion efforts including advocacy, partnership, and community empowerment. Community empowerment uses a Participatory Learning and Action approach that involves active community participation in an effort to increase public awareness to be able to recognize environmental conditions such as enabling conditions for mosquito breeding sites, recognize the symptoms of malaria infection, and recognize malaria prevention and control efforts. However, community empowerment efforts have not gone well, especially awareness of environmental cleanliness that is still lacking. Though transmission of malaria involves the Anopheles mosquito vector so that vector eradication needs to be done. So far, the implementation of malaria control efforts has focused more on human medicine, while the vector eradication approach is rarely done.

Community participation is very much needed in malaria control programs in Indonesia. In Indonesia there are various kinds of ethnic groups with various influential habits in supporting community participation in malaria control programs. Several studies conducted in Central Java, West Java, NTB, Papua (Timika), show that some behaviors that do not support malaria control efforts are the habits of people who seek self-medication by buying drugs at the nearest shop and using drugs at inappropriate doses, habits be out of the house or have nighttime activities without protection from mosquito bites and the logging of mangroves by the community which will cause new breeding grounds for malaria vectors (Ferdinand, 2011). Community participation is low because there is a lack of socialization that invites community participation independently with

the formation of malaria groups. Community participation aims to enable the community to protect themselves and their families by actively eradicating anopheles mosquitoes.

4.5. Malaria Control through the EDAT program

The Bintuni Bay District Government through the Health Office has planned and carried out activities in malaria control but these activities have not all reached the target, while the activities that were not realized at all were training entomologists / Entomological Assistants and Outbreaks and Outbreaks (Outbreaks of 2015-2018 Malaria), training of Puskesmas Malaria management staff and village malaria interpreters (100%) and crosschecker training (33%), reporting recording format (100%), house and environment spraying (150%), data validation meetings (100%) and Monitoring evaluation (100%) while the target achieved in other activities is Cross check slides in stages (53.85%), screening and malaria treatment for pregnant women, infants and toddlers (89%), Monitoring and Evaluation Implementation of referral treatment systems for severe malaria according protocol, management of malaria cases (66%), training for spraying staff Training in recording data reporting malaria (81.82%)

The Bintuni Bay Regency Malaria Control Program Plan for 2010-2020 is prepared in line with the Strategic Plan of the Bintuni Bay District Health Office for 2010-2020. The Strategic Plan for the Bintuni Bay District Health Office for 2010-2020 is the elaboration of Vision-Mission, Development Policy and Strategy in the health sector, which is based on the Ministry of Health's Strategic Plan and the Bintuni Bay Regency RPJM / Strategic Plan for 2010-2020. The implementation of the Bintuni Bay malaria control program plan is outlined in the Annual Work Plan for the Malaria Control Program in Bintuni Bay Regency in the form of technical instructions or fixed procedures and an increase in human resources through

training for microscopic, cross-sectoral and entomological surveillance personnel. The malaria control program has not been implemented properly, specifically training entomologists / entomological assistants and overcoming outbreaks and outbreaks.

In addition, a village defense program was established in the Early Diagnostic And treatment (EDAT) program, which is a system of cooperation between local governments, non-governmental and private organizations to establish village malaria interpreters (JMK) or malaria specialists in remote areas who have difficult access to health care facilities. The village malaria interpreter is not a medical staff, but the people chosen to raise awareness and education of the community so that they are able to identify, prevent and treat malaria, namely the village clerk is trained skilfully in taking blood for examination and coloring for examination which will then be taken to the service health for inspection by crosschecker personnel.

To repeat the same success, the West Papua Health Office has also recently created a program called Bela Kampung which is a program that aims to free the village from malaria within two months and so on, from village to village, gradually, thoroughly and sustainably. Bela Kampung is deliberately taken from the learning of the success of EDAT in Bintuni Bay, so that it is expected to be easy to run in all districts.

Bela Kampung also involved the community directly in the village together with officers taking blood or checking blood. There are malaria cadres who have the same duty, namely to be trained to examine blood, educate and make people aware of the importance of malaria prevention and treatment to completion. After being examined, for example positive malaria, there are health workers who give the drug completely. Besides the village malaria interpreter besides socializing 3M (closing, draining and stockpiling), the malaria cadres are also tasked with

monitoring the mosquito nets that have been distributed by the government.

4.6. Consistency of Government Policy

The consistency of government policies in eliminating malaria due to adequate operational costs. Government consistency is seen by financing the malaria budget. Health financing in Teluk Bintuni Regency in 2015-2018 originated from the district budget funds and the Ministry of Health Fund and other sources of funds from UNICEF, used for health costs, eradication and use of malaria. From the budgeting provided by the Bintuni Bay Regency Government specifically for malaria. Health financing for 2015-2018 comes from the district budget funds and the Ministry of Health funds and other funding sources, namely from UNICEF, used for health costs, eradication and use of malaria. The results of the research conducted by Roosiermiatie and Rukmini (2012) in Bali Province said that funding with a reduction in the budget would increase the reduction of malaria program in the field, especially preventive and promotive efforts. Regarding the Global Malaria Program, malaria is a disease that must continue to be carried out, monitoring and evaluation as well as the formulation of appropriate policies and strategies. Because of the importance of controlling malaria, some international, one of which is the Global Fund, provides assistance for malaria control in Indonesia (Pusdatin Ministry of Health RI, 2011).

This is in line with the statement of Iu3 ": the consistency of the government in budgeting if needed in the budget plan (Renstra) has not been fulfilled, but every year the funds for malaria are still in accordance with the financing plan for fairly large mosquito nets and spraying ...Health costs from the point of view of service providers are providers of funds that must be provided for health assistance. With the understanding that this raises health costs from the point of view of service providers, most of the government and the private sector, the parties who will carry out health efforts (Aswar, 2010).

The main requirements of health care costs must be available in sufficient quantities in the sense that they can finance the implementation of all the necessary health efforts and not make it difficult for the people who want to use them. Another requirement that must be fulfilled is the distribution of funds that must be in accordance with needs. If the available funds cannot be allocated properly, it will make it difficult to carry out any health efforts. Utilization of funds, because if the amount and distribution of funds are good, but if the implementation does not get a thorough arrangement, more problems will arise, which if sustainable will make it difficult for people who need health services (Aswar, 2010). The consistency of the Bintuni Bay Regency government in order to eliminate malaria based on Regent Regulation No. 11 of 2010 showed seriousness in eradicating malaria.

5. CONCLUSIONS

Based on the results and discussion, it is concluded as follows

1. The quality and quantity of distribution of malaria control health workers has been carried out well with the presence of microscopic energy and energy
2. The sustainability of malaria logistics in Bintuni Bay Regency is adequate
3. Cross-sector coordination in the identification of malaria has been well implemented
4. Community participation in malaria control is quite good
5. Malaria control has been carried out well through the EDAT program in the formation of village malaria interpreters in taking blood for examination and getting malaria treatment.
6. Consistent policy of the government of Bintuni Bay District is very supportive in eliminating malaria.

REFERENCES

- Aswar, 2013. *Metode Penelitian Kesehatan*. Bina Rupa Aksara Publisher, Tangerang.
- Ayuningtyas Dumilah, 2014. *Kebijakan Kesehatan Prinsip dan Praktik*. Jakarta : Raja Grafindao Persada.
- Betty Roosiermiatie dan Rukmini, 2013. Analisis Implementasi Kebijakan Eliminasi Malaria di Provinsi Bali
- Bustami 2011. *Penjaminan Mutu Pelayanan Kesehatan dan Akseptabilitasnya*. Erlangga, akarta
- Chin James, 2007. *Manual Pemberantasan Penyakit Menular*. Editor I Nyoman Kandu. Infomedika, Jakarta.
- Dinas Kesehatan Kabupaten Teluk Bintuni, 2017. *Profil Kesehatan Kabupaten Teluk Bintuni*, 2017.
- Dinas Kesehatan Provisnsi Papua Barat, 2017. *Profil Kesehatan Papua Barat*, 2017.
- Ferdinand JL, 2011. *Pengendalian Malaria dalam Era Otonomi dan Desentralisasi Menuju Eliminasi Malaria 2030 di Indonesia, dalam Bulletin Jendela Data dan Informasi Kesehatan, Triwulan 1 2011*. Pusat Data dan Informasi, Direktorat Pengendalian Penyakit Bersumber Binatang Kementerian Kesehatan RI.
- Harijanto, 2012. *Malaria dari Molekular ke Klinis*. EGC, Jakarta.
- Jikwa Y, Rantetampang AL, Zainuri A et.al. The factors affecting of health employee at public health centre, Sentani sub province Jayapura. *International Journal of Science & Healthcare Research*. 2019; 4(1): 109-120.
- Kemenkes RI, 2013. *Informasi Pengendalian Penyakit dan Penyehatan Lingkungan*. Dirjen P2PL, Jakarta
- Kemenkes RI, 2015. *Rencana Strategis Kesehatan Indonesia*. Kemenkes RI, Jakarta.
- Kemenkes RI, 2017. *Informasi Pengendalian Penyakit dan Penyehatan Lingkungan*. Dirjen P2PL, Jakarta.
- Kusumanegara Solahudin, 2013. *Model dan Aktor Dalam Proses kebijakan Publik*. Gava Media, Yogyakarta.
- Lestari, T R P, 2012. *Pengendalian Malaria dalam Upaya Percepatan Pencapaian Target Millennium Development Goals*. Pusat Pengkajian Pengolah Data dan Informasi Sekretariat Jenderal Dewan Perwakilan Rakyat Republik Indonesia. *Jurnal Kesehatan Masyarakat Nasional* Vol. 7, No. 1, Agustus 2012.
- Linggar F, Rantetampang AL, Tingginehe R et.al. The factors influencing defecation

- behavior in toilet Pasca community led total sanitation at Wamesa sub district Manokwari Selatan district. *International Journal of Science & Healthcare Research*. 2019; 4(1): 88-99.
- Marthen A. L. Ayatanoi, 2013. Evaluasi Program Pengendalian dan Pemberantasan Malaria di Puskesmas Harapan Distrik Sentani Timur Kabupaten Jayapura
 - Nawawi Ismail, 2013. *Public Policy. Analisis Strategi Advokasi Teori dan Praktek*. PMN, Surabaya.
 - Pongtiku A., Kayame, R., Rerey, VH., Soeprpto, T., Rsubun Y., 2016. *Metode Penelitian Kualitatif saja*. Nulisbuku.com.
 - Putu, S. 2014. *Malaria Secara Klinis : dari Pengetahuan Dasar Sampai Terapan*. Jakarta: EGC.
 - Renwarin VMV, 2012. *Analisis Pelaksanaan Program Eliminasi Malaria di Kota Tomohon. JIKMU, Suplemen Vol. 4, No. 4, Oktober 2014*.
 - Roosihermiatie, B. dan Rukmini 2012. *Analisis Implementasi Kebijakan Eliminasi Malaria di Provinsi Bali*. Pusat Humaniora, Kebijakan Kesehatan dan Pemberdayaan Masyarakat, Badan Penelitian dan Pengembangan Kesehatan Kementerian Kesehatan RI.
 - Saryono dan Anggraeni. 2010. *Metode Penelitian Kualitatif dan Kuantitatif*. Yogyakarta: Nuha Medika.
 - Shanty, Msen Y, Rantetampang AL, Mallongi A. The factors affecting performance of nurse in health care giver at internal room hospital public Jayapura. *International Journal of Science & Healthcare Research*. 2019; 4(1): 20-26.
 - Sucipto Syaodih SN (2008). *Metode Penelitian Pendidikan*. Remaja Rosdakarya, Bandung.
 - Tanan T, Makaba S, Rantetampang AL, Mallongi A. Drug management in pharmaceutical installation of health office at Jayapura district. *International Journal of Science & Healthcare Research*. 2019; 4(1): 3744.
 - Notoadmodjo, 2012, *Metode Penelitian Kesehatan*, Rineka Cipta Jakarta
 - WHO, 2017. *World Malaria Report*. www.who.com. diakses 20 September 2018.
 - Woyessa, A., Hadis M., Kebede A. 2013. *Human resource capacity to effectively implement malaria elimination: a policy brief for Ethiopia*. *Int J Technol Assess Health Care*. 2013 Apr;29(2):212-7.
 - C. D. 2015. *Manual Lengkap Malaria*. Gosyen Publishing, Yogyakarta.
 - Sugiyono. 2013. *Metode Penelitian Administrasi*. Bandung: Bina Pustaka.
 - Santjaka. 2012. *Model Kausalitas Malaria*. Surabaya: Graha Ilmu.
 - Suharto Edi, 2014. *Kebijakan Sosial Sebagai Kebijakan Publik*. Alfabeta, Bandung.
 - Swarjana, 2013. *Metodelogi Penelitian*. Andi, Yogyakarta.

How to cite this article: Mobilala FD, Rantetampang AL, Sandjaja B et.al. Study of successful malaria elimination program at teluk Bintuni district. *International Journal of Science & Healthcare Research*. 2019; 4(1): 232-243.
