

## IMPLEMENTATION OF FOGGING AS AN EFFORT TO ERADICATE MOSQUITO THE CAUSE OF DENTAL FEVER IN SOUTH WEST ACEH DISTRICT

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### Abstract

*Fogging or fogging is the process of spraying mosquitoes, especially pesticides, to kill carriers (vectors) of dengue hemorrhagic fever (DHF). The purpose of this study was to find out the implementation of fogging as an effort to eradicate mosquitoes that cause dengue fever in Aceh Barat Daya district. The method used by researchers in this research is qualitative and can be called a natural research method because it was carried out in a natural environment. The results showed that the implementation of fogging as an effort to eradicate mosquitoes that cause dengue fever in Aceh Barat Daya District has not been effective in reducing the number of DBB sufferers due to inadequate socialization of DHF control.*

**Keywords:** *Implementation, fogging, dengue fever.*

### 1. INTRODUCTION

Dengue hemorrhagic fever (haemorrhagic fever), which is an acute infectious disease which is currently still a source of health problems in 34 provinces in Indonesia. This incident is due to the spread of the disease which is quite massive and often causes epidemics that triggers the sufferer to die. In some patients, dengue fever can develop into one of two forms which pose a risk to life. First, namely dengue fever which triggers bleeding, leaky blood vessels (tubes that carry blood), and low platelet counts (which help blood to clot). Second, dengue shock syndrome results in low blood pressure which is at risk. Various ways to eradicate the government and society have done. Generally, Eradicating dengue hemorrhagic fever is carried out through approaches or methods that are often used to eradicate other infectious diseases. One thing we emphasize is that so far there is no vaccine to prevent this virus or drugs to eradicate it. The eradication of dengue hemorrhagic fever was carried out by killing the transmitting mosquitoes.

Southwest Aceh District is a South West District of Aceh Province with relatively high dengue cases in Aceh. The 2022 Dengue Hemorrhagic Fever (DHF) Case Report in the District shows that there were 16 people in total consisting of 5 people in Tangan-Tangan District, 9 people in Blang Pidie District, 1 person in Susoh District and 1 person in Jeumpa District. Efforts that have been carried out by the government related to the handling of DHF incidents, namely promoting health, maintaining health, carrying out fogging. It's just that, the government considers fogging not to be the main effort to prevent the spread of disease, but with environmental hygiene and community involvement to control mosquito vectors (Dinkes Abdy, 2022).

According to Hadriyati's (2016) study at the Jambi City Health Center, it was clear that 39 respondents (41.1%) had poor clean water reservoirs because there were mosquito larvae with a value ( $p=0.006 \leq 0.05$ ), and there were 43 respondents (45.3%) did not have a landfill with a value ( $p=0.002 \leq 0.05$ ). These results make it clear that clean water reservoirs and provision of trash bins have a significant relationship with the incidence of dengue hemorrhagic fever. Marali's study (2018) at the Sudiang Health Center emphasized that there were 24 case respondents (85.7%) and 16 control respondents (57.1%) who did not try to eradicate mosquito nests (PSN) with a value

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(p=0.018). In accordance with the explanation above, the researcher aims to conduct a study entitled "Implementation of Fogging as an Effort to Eradicate Mosquitoes that Cause Dengue Fever in Southwest Aceh District.

**2. RESEARCH METHOD**

**2.1 Method**

The method used by researchers in this study is qualitative or scientific research because it is carried out in natural conditions: the behavior of the researchers will be observed by means of objective sampling. In addition, this method was carried out according to descriptive textual data. Researchers also use a qualitative approach to observe or understand problems or find appropriate data to see the problem. Qualitative research, namely the research stage by methodologically understanding social phenomena in society, namely an overview regarding the implementation of fogging as an effort to eradicate mosquitoes that cause dengue fever in Southwest Aceh District.

**2.2 Data processing analysis**

To obtain data according to this study, the researchers collected the data by observing and interviewing.

1. Observation/observation, namely the daily activities of people using the five senses to see activities directly.
2. Interviews, namely interviews for specific purposes. Interviews were conducted by two people. The interviewer asks questions and the interviewee answers the questions.
3. Documentation is the search for data related to things or variables through notes, books, transcripts, newspapers, and so on. Documentation in this study is in the form of photographs/documentation related to interviews and other research activities.

**2.3 Research informant sources**

Informants, namely people who are used as information (main source of information) in research. Sources of information in this study include:

**Table .1.** Names of study participants

No	Source name	Information	Amount
1	Deputy Superintendent of Dengue Fever	key informant	1 person
2	Head of health service	main informant	1 person
3	Health Center DHF Manager	Supporting Informants	2 persons
4	Geuchik	Supporting Informants	2 persons
<b>Total 6 people</b>			

**3. RESULTS AND DISCUSSION**

Fumigation is carried out by special officers at the request of the head of the health service. This activity is also a form of supervision of the activities of the Health Service in the field of larva research, as paramedics are asked to work with the community to eradicate dengue outbreaks by eradicating mosquito vectors and this is also a form of responsibility from the relevant agencies.

Based on the results of an interview with IK he said that:

"There are at least four methods to break the chain of transmission of dengue fever, namely eliminating the virus, isolating sufferers, preventing mosquito bites and controlling vectors. Vector control is carried out in two ways, including chemical methods and environmental management with mosquito nest eradication activities (PSN), namely by closing, burying and draining (3M). Not only using chemicals, other efforts that can be carried out are increasing community involvement in controlling vectors by eradicating mosquito nests through 3M. The second is by fogging carried out

by special officers at the request of the head of the local health office. In addition, this activity is also one of the activities that must be carried out immediately if there are reports of people affected by DHF."

According to IU said, "Efforts to socialize related to dengue control in Aceh Barat Daya District have been carried out in various ways. Community health centers in all Aceh Barat Daya districts need to have the right strategy so that the community can really understand socialization or outreach materials about DHF, so that 3M activities can be carried out according to plans and policies in controlling dengue hemorrhagic fever. Coordination of DHF control has been carried out by the internal parties of the puskesmas, including the health office and hamlet-level stakeholders as well as health forums. However, the quality has not been as desired due to coordination being just a formality: counseling seems to be the responsibility of the local puskesmas."

Then, the statement of the supporting informant (IP) said, "The coordination and outreach regarding DHF control has been carried out well, although it is necessary to find a new method. The socialization method that is often used is counseling by gathering the masses which is no longer effective. The majority of the people who were the target of the socialization were not present so that knowledge about 3M was not understood in detail. This condition resulted in consistency in carrying out DHF control with 3M activities in the community not running as expected. However, we suggest to the community that if there are people who are affected by DHF, they should immediately report it to the nearest health center, so that we can immediately fog the village with the aim of eradicating the mosquito vector."

The statement of the supporting informant (IP) said that "The consistency of the puskesmas in socializing DHF control, in the opinion of some people, is still lacking. The counseling method that was used simply door to door during abatization, distribution of leaflets and counseling at village community deliberation meetings (MMD) had not been effective to make the community as a target obtain clear information on prevention of DHF, and understand the actions that need to be taken to control DHF in household and neighborhood level. DHF socialization methods that can provide clear information related to DHF prevention that the community is obliged to do, such as 3M do not reach all levels of society in the working area of the puskesmas. This condition triggers people to tend to wait for instructions after suffering from DHF. In fact, extension models can vary and are relevant to the level of community education. This method can be in the form of empowering school children, forming pilot PHBS, larva-free areas, jumantik cadres and others. The infrastructure that was asked, yes, of course there is. There are motorbikes, there are puddle cars to get off, computers are also there even though they are integrated with the sling and surveillance programs. Abate wants how much there is. unlimited. The problem is fogging. The tools are the same as the materials in the service. So, if there is a request or a case report at the puskesmas, it is only PE, waiting for the fogging from the office. That's why schools or villages ask for fogging because many students have dengue fever. Yes, we can't do anything about it, yes, the agency has the tools. The tools are there, the materials are there too. We report, write too. However,

Fogging is carried out by a trained PSN. DHF eradication can be achieved more quickly if this method is applied evenly to all residents in different areas, that is, not only in one hamlet but in all areas. If only one area has a program and the others don't, it is possible that people who were bitten by *Aedes aegypti* who visited free areas could be infected with DHF, but cases of DHF still persist. According to the study of the assessment results, no dengue cases were detected after

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fogging was carried out in Aceh Barat Daya District, this was also supported by cleaning mosquito nests as a follow-up to the atomization process from this activity.

According to the results of the study that the researchers conveyed, it is clear if fogging is an attempt to control chemically with the intention of killing adult mosquitoes. According to the Ministry of Health (2008), fogging was carried out after the results of epidemiological investigations showed that if the *Aedes aegypti* mosquito is a vector of DHF, it is positive in the environment which is indicated by the presence of larvae (+) and adult mosquitoes (+). Surveillance is very important because if carried out quickly, it can kill adult female mosquitoes so that it can reduce the density of *Aedes* mosquitoes.

Mosquito density is the most important indicator for vector control, considering that mosquitoes are insects that transfer the dengue virus from the bodies of sick patients to healthy patients. By transferring the virus, it triggers the transmission of dengue hemorrhagic fever. The higher the mosquito density, the faster the transmission of dengue hemorrhagic fever. Resources in the form of financing in efforts to control dengue hemorrhagic fever, among others, funding for counseling, PSN movement and abatization, larva surveys, and fumigation. The funding was obtained through health operational assistance funds at the puskesmas to carry out counseling, PSN movement and abatization, as well as APBD funds from the Southwest Aceh District Health Office's DPA for larvae surveys and fumigation. According to the implementer informant, the budget is still not sufficient if it is allocated for larvae and fogging survey activities. According to the informant's explanation, the limited funds for DHF control have been going on for a long time.

According to the guidelines of the Indonesian Ministry of Health (2011), ideally the spraying should be done twice one week apart. However, its implementation is not in accordance with existing guidelines. This information was given to researchers by residents when filling out the questionnaire that fogging was only done once at intervals of one week or more. In addition, local residents also said that fumigation in their area was carried out at sunrise, namely at 09.00 because it could increase the evaporation of burst smoke so that the results of eradicating *Aedes aegypti* were not optimal. Temperature is also an issue when nebulizing. Nebulization should ideally be carried out at a temperature of 18°C and a maximum of 28°C (Ministry of Health, 2012). This gap can be caused by ignorance of the community or confusion of officials who are weak in implementation. The results of this study are also consistent with Anur et al. (2015) did not find a relationship between fogging activities and the incidence of dengue outbreaks in Virinkanaya District, Makassar City. This may be caused by several factors. So, even though the aim of spraying is only to eradicate the *Aedes aegypti* mosquito, there are still many people who believe that spraying is the most appropriate way to prevent dengue fever.

#### **4. CONCLUSION**

Based on the results of research on the implementation of fogging as an effort to eradicate mosquitoes that cause dengue fever in Aceh Barat Daya District, it is concluded that the implementation of fogging as an effort to eradicate mosquitoes that cause dengue fever in Aceh Barat Daya District has not been maximal in reducing the number of dengue fever sufferers due to factors socialization in controlling dengue hemorrhagic fever which is not carried out consistently, and transmission is not maximized and budget allocation is limited, as well as centralized mosquito control tools. The bureaucratic structure is a cross-program that is not responsible for controlling dengue hemorrhagic fever.

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