

# Control of Zoonotic Rabies Disease by Providing Rabies Vaccine To Pets in Sario Tumpaan District, Manado City

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## ABSTRACT

*Cases of zoonotic rabies in Manado City throughout 2018 - 2022 amounted to 11 cases. The highest cases occurred in 2018 with 6 cases, and every year there are cases of Rabies. Most of these cases occur due to bites from pets, whether dogs or cats. In the world, this case often affects children. Some cases of bites can cause death due to severe bite wounds and poor wound management. Community Service Program regarding public awareness of Rabies and Rabies vaccination in pets. This program will carry out socialization on the importance of Rabies vaccination and Rabies injections for dogs and cats in the Sario Tumpaan Village area, Manado City. This program will carry out socialization on the importance of Rabies vaccination and Rabies injections for dogs and cats in the Sario Tumpaan Village area, Manado City. The method used in this program is by vaccinating pets against Rabies and providing education on the dangers of Rabies and protecting pets against the Rabies virus. The Rabies vaccination program succeeded in inoculating 32 pets, consisting of 28 dogs and 4 cats. There were 3 dogs that had been vaccinated and 25 dogs had never been vaccinated. The age of the animals most frequently vaccinated was 9 animals (28%) under 1 year old; and the least number was 7 animals (22%) aged 1 - 2 years. The results of the Rabies vaccination still do not cover the majority of the pet population in Sario Tumpaan Village, but are enough to protect the surrounding pet groups. Thus, community protection against the zoonotic disease Rabies is quite high.*

**Keyword** : pets, rabies, vaccination

## 1. INTRODUCTION

### Situation Analysis

The Sario Subdistrict in Figures 2023 indicates that Sario Tumpaan Village is one of seven villages in the Sario Subdistrict. This village covers an area of 0.34 hectares and consists of five neighborhoods. The total population of Sario Tumpaan Village is 3,600 inhabitants, comprising 1,676 males and 1,924 females. As is common in urban settings, residents carry out their activities within relatively dense settlements, and many households keep domestic animals as pets. This condition significantly influences community health, particularly regarding zoonotic infectious diseases such as rabies. These diseases are zoonotic in nature, with rabies predominantly transmitted through bites from rabid dogs and cats (Ditjen Pencegahan dan Pengendalian Penyakit, Kemenkes RI, 2017).

Rabies in humans is fatal. The main clinical symptoms include: (1) pain and fever accompanied by tingling at the bite site; (2) increased sympathetic muscle tone with hypersalivation (excessive drooling), hyperlacrimation, and pupillary dilation; and (3) hydrophobia. Once clinical symptoms appear, the disease almost invariably ends in death (Khairiyah, 2011).

### Partner Problems

Data from the Rabies Case Distribution Center in North Sulawesi, Ministry of Health of the Republic of Indonesia (Pusat Data dan Informasi Kementerian Kesehatan RI, 2017), shows

that North Sulawesi Province has had the highest rabies incidence in the past five years (2018-2022), with a total of 11 cases. In Manado City (2), rabies cases due to dog bites were reported in 2022. Most of these cases were caused by bites from domestic animals, such as dogs and cats.

Many residents in Sario Tumpaan Village keep dogs and cats as pets. These animals are closely associated with children, serving as playmates and companions. Additionally, stray dogs are frequently found wandering outside homes. Evidence from WHO indicates that rabies often affects children due to their close contact with pets that serve as play companions. On the other hand, these pets often lack protection from the rabies virus, which remains endemic in Manado City. In 2018, there were 199 deaths due to rabies in North Sulawesi, with South Minahasa reported as the district with the highest number of cases, while Manado was also categorized as an area with a high number of rabies-related deaths (Wolajan, 2018; Notoadmodjo, 2011).

### **Objectives and Benefits of the Activity**

In accordance with the planned program, the expected outputs of this community service activity are:

- a) Increasing community awareness regarding the importance of protecting their pets from the dangers of rabies; and
- b) Applying academic competencies to analyze the epidemiology of rabies in Manado City, particularly in controlling the zoonotic transmission of rabies.

## **2. METHODS**

This community service activity employed two main methods: providing education to the community regarding the zoonotic nature of rabies and administering rabies vaccinations to domestic animals such as dogs and cats.

### **Target Population**

The target population of the educational and vaccination activities consisted of dogs and cats aged over three months, as well as their owners.

### **Location and Time of Implementation**

The program was carried out in Sario Tumpaan Village, Sario Subdistrict, Manado City, on Saturday, 11 October 2025.

### **Implementation Techniques**

The methods used in this activity included:

- a) Health education for the community on the importance of protecting pets from rabies; and
- b) Administration of rabies vaccinations to dogs and cats.

## **3. RESULTS AND DISCUSSION**

The outcomes of the activity are summarized as follows: health education was provided to the community through a public awareness session regarding rabies, a fatal zoonotic disease transmitted to humans primarily through bites from infected dogs or cats. The participants consisted of 21 residents who brought their pets, and the activity also included direct home visits. A total of 32 animals were recorded, consisting of 4 cats and 28 dogs.

Data on the number of vaccinated dogs and cats are presented in diagram form as follows:

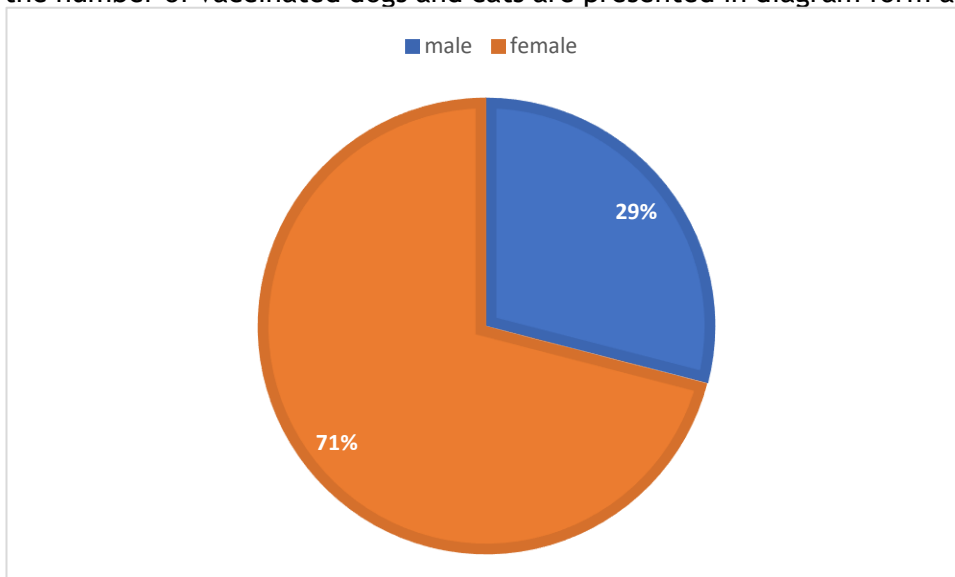


Figure 1. Distribution by Sex

Figure 1 shows that among the vaccinated dogs and cats, 18 (56%) were male and 14 (44%) were female. These findings indicate that most owners have male pets and tend to bring them for vaccination. From a biological or virological standpoint, sex does not have a significant direct influence on rabies transmission. The rabies virus (family Rhabdoviridae, genus Lyssavirus) is primarily transmitted through biting, where saliva containing the virus comes into contact with broken skin or mucosal surfaces. The virus replicates and is shed in saliva at similar rates in both male and female dogs.

However, indirectly, sex can influence transmission risk due to behavioral and reproductive factors. Male dogs tend to be more aggressive, roam more frequently, and are more likely to be involved in territorial fights, increasing their likelihood of exposure to wild rabies sources.

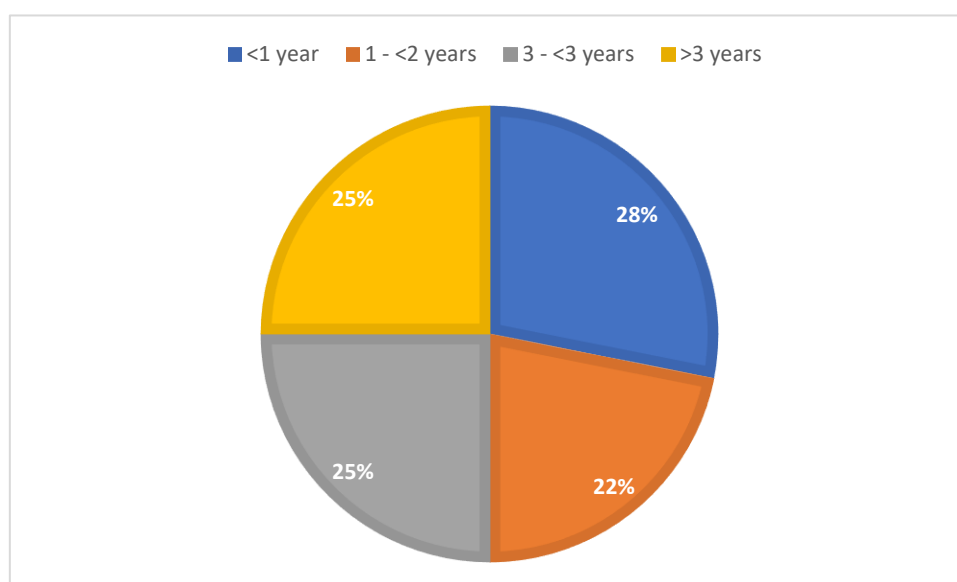


Figure 2. Distribution by Age Group

Figure 2 illustrates that the highest number of vaccinated pets belonged to the age group under 1 year, totaling 9 animals, while the lowest number was in the age group of 1 to <2 years, with 7 animals.

Age is a significant factor influencing susceptibility to rabies infection and the potential to transmit the virus to humans or other animals. This influence is attributed to immunological development, behavioral characteristics, and environmental exposure. Young dogs aged 3-12 months represent the highest transmission risk group, as they are already active and mobile but have not yet developed strong immunity and may not have received complete rabies vaccination (Balai Vektor dan Reservoir Penyakit, 2016).

#### **4. CONCLUSION**

The Community Partnership Program (Program Kemitraan Masyarakat/PKM) successfully increased public awareness and concern regarding the dangers of rabies transmission in companion animals. As a result, community members were encouraged to bring their pets for rabies vaccination.

#### **5. RECOMMENDATIONS**

Considering the epidemiological pattern of rabies in Manado, where rabies cases from dog and cat bites continue to occur annually and the disease remains endemic routine re-vaccination is strongly recommended. Ideally, vaccinations should be administered yearly, or every six months in high-risk areas.

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