

**Title:** EFFECT OF RABIES CONTROL PROGRAMME IN RURAL WEST BENGAL - A APPROACH TOWARDS RABIES FREE INDIA BY 2020

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**Keywords** Rabies, control and surveillance, community participation, spraying of dogs, health education

**Abstract** To control rabies, humane control of stray dog population with anti rabies vaccination and awareness programme was undertaken with the active participation of rural community covering an area of about 1100 sq. km. un Howrah, West Bengal. Emphasis was given to Health education (KAP) of the target community and gradually some practices of rural folk have changed.

## Original Article

# Effect of Rabies Control Programme in Rural West Bengal – an approach towards Rabies Free India by 2020

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**ABSTRACT**

To control rabies, humane control of stray dog population with anti rabies vaccination and awareness programme was undertaken with the active participation of rural community covering an area of about 1100 sq.km. in Howrah, West Bengal, India. Emphasis was given to Health Education (KAP) of the target community and gradually some practices (eg. improper primary management of biting wound etc.) of rural folk have changed. The reported cases of animal as well as human rabies along with dog bite were recorded throughout the five years of study since 2003-04 and were analyzed. Decreasing trend of rabies and dog bite cases both in man and animal with more or less static stray dog population are the unique findings of this study. This programme may be modeled in this country towards our goal of Rabies Free India by 2020.

**Key words :** Rabies, control and surveillance, community participation, spaying of dogs, health education.

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**INTRODUCTION**

West Bengal is regarded as a rabies endemic state in India along with Maharashtra, Andhra Pradesh and Tamil Nadu (Poddar, 2003). In India stray dog bite is the principal mode of transmission of rabies and the rural people is mostly affected (Sudarshan, 2007). The population of stray dogs are estimated to increase by 10% annually. For the effective control of rabies in livestock and human beings, the stray dog population should be controlled first (Kachawaha et.al, 2006). Hence to reduce stray dog population vis-à-vis rabies incidence in the villages, there is no alternative, but to involve rural community. The present study was carried out to control rabies in a specified geographical area by humane control of stray dog population with different awareness programmes keeping the record of common practices and incidences of dog bite cases during 2003-2008.

**MATERIAL & METHODS**

A programme was chalked out covering 1100 sq .km .area of Udaynarayanpur block in rural Howrah involving 11 Gram-Panchayets with the assistance of a NGO. Group meetings, awareness campaigns were organized in villages, local markets and schools for health-education of the community people involving students and traditional-healers to improve their knowledge regarding solid waste disposal, thorough washing of dog-bite wounds with soap and water,

early reporting to the health centre following dog bite, co-operation with dog-catcher for immunization and sterilization of community and stray dogs. Animal owners were also advised that they should not put their naked hand in the mouth of animals showing salivation and that animal should be segregated from others with careful management. All possible efforts were made to increase the awareness of rural people specially students and traditional-healers regarding their duties to prevent rabies. Data was collected either directly by interview technique or indirectly from the records of Animal and Human Health Centres regularly. Relevant statistical test was used whenever needed. Stray dog catching programme was taken in different villages with prior intimation to the respective panchayets and subsequently spaying was undertaken in the usual manner at Animal & Bird Welfare Society (AWBS) Hospital, Singhti, Udaynarayanpur, Howrah.

**RESULTS & DISCUSSION**

Inspired by the different awareness programmes, rural people expressed their willingness to involve, participate and work in this study .They were trained for awareness programme, dog catching and data collection. To ascertain the outreach of the programme, the collected data was assembled regularly from the volunteers. The most interesting feature of this programme was the active involvement of ten rural volunteers.

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**TABLE I**  
Year wise Human Rabies Cases

Year	Human Rabies
2003-04	2
2004-05	3
2005-06	1
2006-07	0
2007-08	0
<b>TOTAL</b>	<b>6</b>

**TABLE II**  
Age & Sex Distribution of Human Rabies Cases

Age Group (Years)	No. of MALE cases	No. of FEMALE cases	Total no. of cases
0 - 15	1	1	2
15 - 30	3	0	3
Above 30	1	0	1
<b>TOTAL</b>	<b>5</b>	<b>1</b>	<b>6</b>

**TABLE III**  
Year wise Dog Bite Cases in Man

Year	Human Rabies
2003-04	50
2004-05	62
2005-06	53
2006-07	52
2007-08	39
<b>TOTAL</b>	<b>256</b>

**TABLE IV**  
Age & Sex Distribution of Dog Bite in Man

Age Group (Years)	No. of MALE cases	No. of FEMALE cases	Total no. of cases
0 - 15	45	24	69
15 - 30	56	29	85
Above 30	68	34	102
<b>TOTAL</b>	<b>169</b>	<b>87</b>	<b>256</b>

During the period of 5 years of study, 6 human cases of clinically diagnosed rabies had reported to Primary Health Centres (Table 1). Of them, 2 cases were children under 15 years of age and 5 were males. Only one man was above 30 years of age group (Table 2).

All were either illiterate or had primary education and occupationally all the people above 15 years of age were involved in agriculture. The study revealed that all the 6, i.e. 100% cases had been exposed to stray dog without any provocation and the biting dog either had become untraceable or had been killed by

**TABLE V**  
Year wise figure of Victimized Domestic Animals

Year	Cattle	Goat	Total
2003-04	56	69	125
2004-05	63	78	141
2005-06	51	60	111
2006-07	47	61	108
2007-08	31	51	82
<b>TOTAL</b>	<b>248</b>	<b>319</b>	<b>567</b>

**TABLE VI**  
Year wise Rabies Cases in Domestic Animals

Year	Cattle	Goat	Total
2005-06	6	2	8

**TABLE VII**  
Effect of Spaying on Stray Dog Population

Year	Dog Population
2003-04	5667
2007-08	5879

**TABLE VIII**  
Year wise Spaying & Anti Rabies Vaccination in Dogs

Year	No. of Spaying Dog	No. of Spaying Bitch	Total	No. of ARV given
2003-04	59	51	110	110
2004-05	212	150	162	931
2005-06	374	355	729	3212
2006-07	252	175	427	786
2007-08	276	211	487	487
<b>TOTAL</b>	<b>1173</b>	<b>942</b>	<b>2115</b>	<b>5826</b>

the villagers due to its abnormal behaviour. Here, cent percent human rabies cases were by dog bites, whereas Park (2005) reported the same as 95%. In all cases, the prodromal signs as recorded were low grade fever, headache and pain over the limb of exposure along with body-ache, tingling sensation at the site of bite, nausea and vomiting. The cases were referred to I.D. and B.G. Hospital, Beliaghata, Kolkata and at that time consciousness was intact and the patients could be assessed about their exposure to dog bite.

Proper primary care of the wound had not been reported to be in practice during the first couple of years, rather traditional herbal preparations as turmeric with oil paste, paste of Karela leaves, chilly, cow dung, antiseptic (Dettol) and lime application, cutting of another side in the hope of bleeding away toxins of dog bite, application of armlets were some

of the common forms of the traditional system of treatment noted from the cases (Das, 2010). All practices, myths and the beliefs were undoubtedly wrong. But just after 2 years, gradually the attitude and practice had been changed and it was a healthy sign of the awareness (KAP) Programme.

Total dog bite cases in human enrolled in this study were 256 (Table 3). Out of these, 169 were males and 87 were females. 69 victims were 0-15 years of age followed by 85 from 16-30 years of age (Table 4).

More reporting of male cases and cases in the age group of 0-30 years is mainly because of vulnerability to exposure. The findings are similar to Agarwal & Reddaiah (2003). Maximum dog bites were by stray dogs (96%), whereas Sekhon et.al (2002) and Sharma et.al (2007) observed 58% and 38% respectively. This deviation may be due to the difference of geographical location and rural involvement of the present study.

Incidence of bite among cattle was significantly ( $P < 0.05$ ) lower than the goats. Out of 567 cases, 248 cattle and 319 goats were bitten (Table 5). This might be due to the fact that goats are easily accessible for attack than cattle, by dogs. In only two instances, cattle were affected by jackal and mongoose respectively. Only 6 goats and 2 cows died showing the clinical signs of rabies during 2005-06 (Table 6).

Dog bite cases in man as well as in domestic animals showed a decreasing trend since 2005-06, which could be a good indicator of the success of this programme. Sterilized dog having docile nature did not feel disturbances by the human beings during their mating session and this factor might also play a major role in this decreasing trend of dog bites.

The stray dog population in 11 Gram Panchayets was estimated to be 5667 during the outset of this programme i.e. in 2003-04 and after 5 years, the figure reached to 5879 even after the sterilization of 2115 dogs (Table 7 & 8). Only due to intensive sterilization programme, the geometric progression rate of dog population was not increased; otherwise naturally the figure might be raised above 8000. Review of literature revealed no such recorded report in this aspect and probably this study is the first of its kind with such unique findings.

In each year, this programme was affected due to the flood of the river Damodar (Western side). As in 2005-06, there was no flood and hence the number of spaying and anti-rabies vaccination (ARV) was increased (Table 8).

Community participation is the cornerstone of any health care system. Health education, especially of the traditional healers and students, meeting at markets and active involvement of the rural volunteers have great potential in dissemination of health messages. Enumeration of stray dogs, from humane capturing to surgical spaying, aftercare, anti-rabies vaccination and releasing of dog where they had been caught, along with annual mass immunization were all incentive based and part of ABC-AR programme. Moreover, the participation of the community made it possible as well as sustainable to translate the idea into action. A total consensus has been reached and people have been fully aware to be responsible for their health. 'Health for All' and 'All for Health' are the two slogans – the former one is given by W.H.O. and the latter is achieved by involvement of the community. In this programme, no resistances were faced from the community for catching of stray dogs and full cooperation was found in every respect. Also, in this regard, oral rabies vaccination of large stray dog population is suggested as a supplementary method to increase the overall vaccination coverage. As this programme is a continuous one, control and surveillance of rabies through this path of approach will pave the way for a 'Rabies Free India' in the near future.

#### ACKNOWLEDGEMENT

Authors are grateful to Mr. Badal Jana and his team of Animal and Bird Welfare Society, Singti, Udaynarayanpur, Howrah and the incharge doctors of Animal Health Centres and Primary Health Centres with the Gram Panchayet members and villagers of the study area for their assistance and active cooperation.

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