



PRINCIPLES FOR PUBLIC EDUCATION<sup>1</sup>  
AND COOPERATION IN DOG RABIES CONTROL



This document should help programme coordinators at all levels - national, district and community - to plan public education in rabies control. A detailed technical guide is in preparation. WHO welcomes critical discussions on this basic document and invites readers to send their comments by January 1990 to Chief VPH at the address given below.

1. BACKGROUND

Urban rabies is essentially maintained by dogs wherever it is endemic worldwide. It is a problem which occurs because of the relationship which exists between humans and dogs. Theoretically, dog rabies could be eliminated if rabid animals succumbed to the infection before having contact with unvaccinated (susceptible) dogs.

Three approaches to preventing contact between infected and susceptible dogs may be applied. Basically, they are dog immunization, dog restraint by confinement or leashing, and removal of unrestricted dogs from public localities. Each approach, alone or in combination, can break urban transmission cycles and achieve the elimination of rabies from the community.

The application of these approaches, individually or in combination, must be compatible with the ecology of the dog population and be well adapted to current social attitudes to ensure a high level of acceptance of the control activities by the public and to stimulate their active participation in comprehensive implementation. Community education for rabies control must be developed in local cultural terms.

2. JUSTIFICATION

Dogs remain overwhelmingly the prime source of human exposure to rabies in urban areas where they act as reservoirs, and in other settings where they act as intermediary hosts between animal reservoirs and the human population. Dog rabies control programmes are, therefore, the first priority for human rabies control in urban areas. The principle is simple: interrupt the exposure of susceptible dogs by infected dogs or other mammals.

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Rabies control programmes based on compulsory registration/vaccination programmes or on the reduction of populations of poorly controlled "street" dogs, are likely not only to fail, but to create adverse reactions from the community towards the rabies control project. The best cooperation can only be achieved if the role of dogs in human rabies and the principles underlying the control programme are accepted by the community because of its partnership in the programme. Only in this way can control programmes be made sufficiently comprehensive to achieve and maintain successful rabies control.

As an illustration of the above, dog vaccination campaigns in Sri Lanka between 1985 and 1987 reached an overall coverage of only 30-40%, in Tunisia during the same years, 35-45%, and in Ecuador before 1985, less than 30%. In addition, attempted reductions in the number of street dogs in Sri Lanka achieved only a 5% reduction, and although a higher proportion of the dog population (12-25% annually between 1982 and 1984) was eliminated in Ecuador, these measures in the three countries proved to be insufficient to achieve any long term lowering of the incidence of rabies in these areas. In Guayaquil, Ecuador, public cooperation was achieved when systematic mass dog vaccination campaigns were conducted annually in conjunction with the discontinuation of earlier sporadic attempts at dog elimination (except specifically dangerous animals). These campaigns reached dog vaccination levels of 81.3-90% of the total population, and brought rabies under control.

### 3. OBJECTIVES

#### Problem definition

This section underlines the necessity for veterinarians, health educators and health officials to work together with the community to develop a holistic picture of rabies epidemiology and community-specific ecological and sociological factors that are maintaining it. The key element in successful control of dog rabies is the thorough understanding of the relationships between the dog population and human society at the community level. Only when they are clearly discerned can a successful intervention be designed and applied.

Dog population immunization is highly effective only when a sufficient level can be achieved and maintained. At least 80% immunization must initially be reached and when the population immunity level drops below 60%, community-wide vaccination must be reinstated. In many areas, this will require an annual mass vaccination of all dogs above three months of age, whether claimed by householders or not. These campaigns are only feasible if undertaken without direct expenses for the dog-owners. Vaccination carried out on the owners' initiative will not reach the required coverage.

#### Main objectives

To achieve and maintain a maximum immunization coverage of the dog population, to reduce the production rates of dog populations and to minimize dog movement and interactions, with minimal disruption of the dogs in a community.

### 4. ACTIVITIES

The epidemiologist will define the extent of the rabies problem, establish the size, distribution and dynamics of the target dog population, and the expert in communication will need to survey the human target audiences to determine their knowledge of rabies, their literacy, their mass media habits, other socio-economic effects such as religion,

and the reasons why they keep and value their dogs (e.g., as pets, guard dogs). Such analyses will also help to define the need for educators and communicators to understand community organizational and learning systems before launching motivational campaigns. Sufficient lead time must be allowed for information to spread through local channels.

#### 4.1 Public Education

Educational programmes must be based on an intimate knowledge of the communities involved - their values, strengths and needs. Educational messages should be sensitive to local social variation and should be in locally familiar terms.

This concerns in particular:

- area dog vaccination programmes should be preceded by intensive local publicity, including displays in pet food shops, through the local "village pump" mechanisms and through loudspeaker vans touring the target areas;
- vaccinators going house to house in dog vaccination campaigns can function as highly effective educators;
- children should receive special attention as targets because of their unique bond with pet dogs and their ability to provide a pathway into the family unit. This was illustrated by Beran and Frith in Ecuador;
- specific education programmes tailored for influential groups, e.g., veterinary practitioners, government departments, service clubs (Rotary, Lions), school teachers, police, religious organizations, animal welfare and wildlife organizations and the environmental lobby groups;
- "progress" news releases for both electronic and written media, identifying the steps already taken and benchmarks which have been reached;
- radio and television interviews for news and current affairs programmes, also in conjunction with paid advertising;
- feature stories, if funding permits, in association with paid advertising, in local and national press.

#### 4.2 Identification of vaccinated dogs

Identification of vaccinated dogs should be undertaken wherever feasible. Collars provide a visible record for vaccinators and can build public confidence in the vaccination programme. Collars of low-cost materials should be used where leather tags and collars in sufficient quantities for the entire dog population would be excessively costly. Coloured plastic, incorporated into the collar design, can additionally be used as highly visible annual vaccination codes.

#### 4.3 Dog population management

A stabilization of the dog population can be achieved through:

- (a) Confinement of dogs to owners' premises, or restriction to leashes while off the premises, can be highly effective when it is both feasible and scrupulously maintained. In most communities where the principal social role of dogs is as

guards, or where their main ecological function is as scavengers, achieving confinement of a sufficient proportion of dogs is highly problematic. Temporary effective confinement may, however, be possible during a rabies epidemic or in the immediate foci of rabies outbreaks.

(b) Dog removal is costly and frequently raises public opposition both to dog removal and, in some cases, to rabies control as a whole. Even though relatively cheaper, dog poisoning in streets equally raises public opposition. Unless removal were to be applied thoroughly and simultaneously to large areas, it will not prevent the migration of dogs from areas with a population surplus into depopulated areas where feed and harborage remain.

(c) A method should be provided for the removal of dangerous dogs and dogs unwanted by neighbourhoods. Dogs may be removed by wardens from outside the neighbourhoods or by neighbourhood residents.

(d) Promotion of proper dog population management techniques. The most effective reduction in the urban dog population can be achieved by storage of garbage in closed containers, regular garbage removal and management of other adventitious food supplies. Second in importance is removal from the community of materials usable by dogs for harborage and denning sites. Additional population controls include the confinement of bitches in oestrus. Neutering may be applied in communities with the facilities and sufficient resources. Where the practice is socially acceptable, and where the proportion of unrestricted dogs is low, population control management by owners, dog breeder associations and societies for the protection of animals may further reduce and help to maintain dog populations at lower levels.

#### 5. FINANCIAL REQUIREMENTS

A minimum of two m/m months and US\$ 15,000 operating funds is required to develop, test and implement a programme on a trial basis in a country such as Nepal.

#### 6. EXPECTED RESULT

A successful programme will eliminate dog rabies from the subject population. Provided that an adequate buffer can be established, and that no unvaccinated dogs are brought into the community, rabies elimination can be maintained. Consideration could be given to discontinuing vaccination of dogs and cats after an appropriate period of freedom.

Similarly, after a suitable interval, routine "postexposure" treatment of humans experiencing dog bites or scratches could be accepted as no longer necessary.

People would then be able to interact confidently both with their pets and with other animals.

#### 7. INDICATORS OF SUCCESS

The success of a programme of this nature can be measured by:

##### (a) Health indicators

- the decrease of rabies occurrence in dogs and people
- the proportion of people knowing about rabies and of proper actions to be taken following animal bites (e.g., measurable through questionnaires)

(b) Service indicators

- the number of persons receiving antirabies treatment following exposure to suspected and proven rabid animals
- the number of doses of rabies-vaccine produced locally versus imported
- the potency, safety and effective immune period of the vaccine(s)

(c) Dog population indicators

- the proportion of the dog population registered and/or vaccinated
- a gradual reduction in feed and harborage available for scavenging dogs as measured through, e.g., number of fenced dumping sites and waste collection containers, and a concurrent reduction in the dog population
- an increase in the proportion of dogs considered as pets by owners
- an increase in the proportion of the dog population provided all food by owners
- an increase in the proportion of the dog population restricted and kept under supervision by owners
- a rise in the age structure of the dog population with an increase in life expectancy of dogs in the community

(d) Managerial indicators

- establishment and number of meetings of the national coordinating committee
- formulation and modification of national rabies control plan
- establishment of institutional framework
- dates and amounts of resource allocations, e.g., staff, equipment and resources
- regular reports of local and central programme coordinators

8. POSSIBLE APPLICATIONS FOR OTHER HEALTH/COMMUNICABLE DISEASE PROGRAMMES

The learning and organizational processes that emerge from a rabies control programme based on community participation will be applicable to socio-economic development and the control of many other diseases, e.g., hydatidosis, leishmaniasis, larvae migrans, toxoplasmosis, giardiasis, salmonellosis and other enteric infections.

Rabies is a disease focus for the introduction of Primary Health Care in Veterinary Public Health. The community would be organized to deal with an object of universal fear (rabies) and the action (vaccination) is taken on dogs rather than people. Rabies control presents an opportunity to redirect the emotion of fear into a positive and relatively non-threatening joint action to improve the collective quality of life.

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