

SUITABILITY OF THE NEUTER-RELEASE APPROACH AS OFFICIAL POLICY FOR DOG POPULATION AND CANINE RABIES CONTROL IN INDIA

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INTRODUCTION

India has 80% of the world's rabies fatalities according to the World Health Organization (WHO). This figure has changed little in the last couple of decades. The WHO identifies the largest reservoir of rabies in India and the world as the dog population.

India's only Program for dog population and canine rabies control has been under the purview of three distinct ministries i.e. Ministry of Environment and Forests, Ministry of Social Justice and Empowerment and now, most surprisingly, the Ministry of Culture.

WHO recommendations for the control of dog populations and rabies incidence in dogs are stated in a single sentence: *promote and enforce pet control laws, undertake sustained re-immunization and eliminate unwanted dogs*^[i]. In India, because we concentrate on neutering the very dogs for which the WHO recommends elimination, we have hopelessly lost track of the very source of the problem. What we are following in India is in fact not the WHO Program.

The 'stray dog' issue has unfortunately become one of people against dogs and it is a common misconception that only one can benefit from a dog control program. The WHO recommended Program was designed to serve both. There are three separate problems that dog control strategies must deal with - dog populations, dog bites/attacks and rabies incidence. Merritt Clifton^[ii], who has been editing ANIMAL PEOPLE for more than a decade, explains this best:

"Rabies prevention, dog population control, and dog attacks are three totally separate issues, which should never be confused, even though they can be controlled by partially overlapping means. Here is why:

Rabies prevention is effectively achieved only by vaccination. If you can vaccinate the whole dog population, you can totally prevent rabies, even if the dog population consists entirely of obsessive biters who breed like rabbits.

Dog population control requires sterilization. You could sterilize every dog in the universe and they could still transmit rabies if not vaccinated.

Rabies is only one very minor cause of dog attacks. Sexual aggression and/or defense of litters are more common causes, but are still minor compared to the two major causes: territoriality and fear. Owned and confined dogs are many times more likely to bite than free-roaming dogs. You can totally eliminate rabies, sexual aggression, and litter defense, and still have a tremendous amount of biting--and that is more-or less what has happened in the U.S."

Dog Control Programs around the world, therefore, involve all dogs. The primary objective of a dog control program must be to contain canine rabies and control dog population densities. Animal Welfare is a goal all good Dog Control Programs achieve. Dog attacks are a complex issue and must be dealt with through extensive public education. The WHO in 1992 issued detailed Guidelines on achieving population and rabies control objectives by managing dog populations.

BACKGROUND

Dog population density is influenced by different habitats, cultures, social and epidemiological situations. According to the WHO, most American and European countries report a dog to human ratio of between 1:10 or 1:6. The WHO estimated India's total dog population at 25 million in 1998ⁱ, and 50 million in 2001 revealing a dog to human ratio of close to 1:20. A study conducted by KIMS, Bangalore^[iii] reported a ratio of 1:12 based on cluster sampling and our estimate in Pune^[iv] based on the Petersen-Lincoln method revealed a ratio of 1:22.

The WHO^[v] categorizes dog populations as follows:

1. **Restricted or supervised dogs** which are totally dependent on their owners and whose movements are restricted: pets.
2. **Family dogs** that are wholly dependent on their owners but whose movements are only partially restricted.
3. **Neighborhood or community dogs** that are partially dependent on humans but whose movements are unrestricted.
4. **Feral dogs** that are independent (or dependent on human waste/garbage alone) and whose movements are totally unrestricted.

The WHO goes on to state:

In general, there are very few areas where dogs have no referral household and no attachment to at least one person but the levels of human supervision and neglect may be very variable, putting in to question what is meant by the term 'stray dog'. Dogs kept in houses [sic] during the day may be stray animals during the night. Exceptions to the general rule may be found in limited areas where dogs can find sufficient food and shelter without the aid of human supervision, e.g. markets, slaughter houses, roadside restaurants, temples etc. These dogs are rarely successful in raising litters if given no aid by man as a contrast to cats, which can breed successfully in the feral state. Dogs which lose their relationship to man survive best if they become members of an independent pack. But even then it is not known to what extent they can breed successfully. For e.g. in the Nile delta islands, the feral dog colony lives on fish and fish offal. It maintains its numbers mainly by recruiting individuals from the supervised dog population. Reports of litters being raised successfully away from human shelter are very rare. Similar observations have been made on dog colonies around dumping grounds outside cities.

These findings are of considerable consequence for dog population management. Strategies cannot be effective in the long term if they depend solely on reducing the number of dogs, which are already struggling for survival and do not breed successfully. These dogs may be very significant in the transmission of rabies and other diseases and so may need to be targets of control measures for those reasons. However, in order to achieve long-term reduction in dog populations, the strategy selected must include controlling the reproduction of owned dogs and controlling the environment of unsupervised dogs. In a population segment of well-supervised dogs, the rate of reproduction is relatively low. Many individuals are neutered and females in heat are kept under control. Shelter, food and water are intentionally provided by man. Therefore the mean age in this population segment is relatively high (e.g. America). The other segment of dogs belongs to one or more households but are poorly supervised. They reproduce freely and their rearing success may be high since shelter and protection are provided by humans. These animals often feed on refuse and garbage and this is significant in regards to dog transmitted zoonoses. The surplus offspring of the poorly supervised dogs enters the population segment of the unsupervised or feral dog. These dogs are very often tolerated but are fed only seldom and irregularly. Their breeding success is relatively poor.

'Stray' is thus a reference to roaming/wandering - not ownership alone: any dog permitted by its owner to roam free and unsupervised should by definition be considered a 'stray' dog. **All feral dogs are stray, but all stray dogs are not feral.**

It is also seemingly obvious that semi-supervised dogs, (WHO category 2 and 3) are the cause of rising stray dog populations in urban areas. Therefore it is important to note that already stray dogs do not significantly contribute to their own population. The WHO stresses on mass sterilization and vaccination of **owned** dogs, not ownerless ones.

The WHO reports that canine rabies can be effectively eliminated if 80% of the dog population can be brought under a sustained re-immunization program.

DOG CAPTURE VS DOG CONTROL

Though the AGFUND/WHO study^[vi] conducted between 1981 and 1988 reports that whether owned or not, very few dogs (10-15%) are able to avoid capture, since 1987, Municipal dog capture in Pune has never been more than 10% of the total dog population. The KIMS, Bangalore study reports 20,749 dog captures in a year from a total dog population of 325,000 (or 6% of total).

Municipalities capture dogs in cities, based primarily on complaints called in by residents to remove unwanted and aggressive dogs from their localities. Captured dogs are held at Pounds for a quarantine period (up to 10 days), during which owners can re-claim their dogs and some are re-homed/adopted.

The number of dogs caught by Municipal Dog Squads is a reflection of 'catch-ability', which depends on two factors, (i) the physical condition of the dog (is it fit enough to escape capture?) and (ii) intervention by owners that precludes capture (community ownership). 'Community' dog-owners, the world over, hide their dogs from the Dog Squad. Once the Van leaves, the dogs are left to roam and mate freely once again. The AWBI itself has estimated that 88% of dog owners hide their dog from the Dog Van. This is because of the belief that Municipal captures leads to killing and not opposition to neutering.

Animal Birth Control for Dogs, a Ministry of Social Justice and Empowerment publication, categorizes this 'catchable' population as follows:

%age	TYPE
10%	Terminally ill/in need of euthanasia
20%	Below reproductive age
40%	Young and actively reproducing (between 9 months and 4 years) with potentially large litter sizes
30%	Old (above 4 years) with potentially small litter sizes

A study of the daily intake of dogs into the Pune Dog Pound for 11 months in 1999-2000 shows, that of the total number of dogs caught and handed over to the AWO for sterilization, approximately 30% were sick/injured, 30% were below reproductive age and a further 10% were terminally ill. There exists no data at the Pune Dog Pound to allow population sex/age segmentation into groupings beyond pups and adults, and calculate that only 30% of annual dog captures in Pune can possibly contribute to dog population increase.

Therefore, for every 100 dogs in an urban area, Municipal dog squads can catch only 10, of which 7 are not active contributors to the breeding population. Estimates using the AWBI own groupings (in the table above) reveal a similar picture.

Dog Control efficiency is estimated as a percentage of the total target population accessed for neutering, which is calculated as:

Total target population accessed annually = Total no. of dogs re-claimed + total no. of dogs re-homed + total no. of dogs brought in by owners/volunteers for spay/neuter

Presume that any dog not reclaimed is unwanted and therefore soon to become or already part of the feral population. While this may not be true and all of the dogs released could be "community-owned" dogs, in terms of rabies control, because the dog cannot be traced to a companion for timely re-immunization, it would have to be treated as part of the feral population anyway. Success is heavily dependent on making neutering more accessible to owners of semi-supervised dogs. Even under optimal conditions (presuming that we were able to use a three year rabies vaccine like Imrab, improve refrigeration, eliminate corruption etc.) and that:

- (i) all dogs collected by Municipalities are subtracted from the target population, and
- (ii) all dogs caught are active contributors to increasing populations, the efficiency equation changes to:

Total target population accessed annually = Total no. of municipal captures sterilized + total no. of dogs brought in by owners/volunteers for spay/neuter

Success is still heavily dependent on the total no. of dogs brought in by owners/volunteers because annual Municipal capture is never more than 10% of the Total Dog Population. More importantly, Municipal captures are comprised of the poorest breeding segment of dogs.

This is the reason the WHO promotes free/low cost neutering and vaccination for owned dogs not ownerless ones.

As currently implemented, therefore, the Indian ABC-AR Program will never approach the requisite target of a 70% of the breeding population in the required time span. As currently implemented, the AWBI Program ignores the source of the problem, while providing conditions conducive to straying dogs.

This also illustrates why killing as a singular control strategy will never work in India and has not worked despite having been implemented for decades - a dependence on Municipal Capture. Catch-able dogs are largely extracted from the feral segment of the dog population that on its own has poor breeding success, and should not form the thrust of our National Dog Control Strategy.

Killing/elimination as a singular control method is also ineffective in controlling dog populations precisely because of the large numbers of community-owned dogs that are able to avoid capture. Permanent removal of a poorly breeding segment of the dog population and/or neutering of this segment will have little success in controlling dog-populations in the long-term. A more complex reason killing is not recommending as a sole control method concerns the ecology of dog populations. The WHO states^v,

The density of a population of higher vertebrates (including dogs) is almost always near the carrying capacity of the environment. Any reduction in population density through additional mortality is rapidly compensated by better reproduction and survival. In other words, when dogs are removed, the survivors' life expectancy increases because they have better access to resources and there is less competition for resources.

It is important to note that the WHO/WSPA recommends the elimination of unwanted (feral) dogs for zoonotic disease control (more than 100 diseases, including rabies can be spread from dogs to humans) and not as a critical factor in dog population control.

DOG POPULATION AND CANINE RABIES CONTROL IN INDIA

In India, both dog populations and canine rabies are controlled by a catch-neuter-release method.

The WSPA states^{vii[viii]},

Where an isolated community has a small stray or feral population, which is not considered a nuisance and re-homing potential is limited, it may be practical to capture, vaccinate, worm, neuter and release stray dogs. In this case, only ill, diseased and aggressive dogs need to be euthanased.

Urban centers in India are not isolated communities and media reporting indicates that almost all cities have large feral populations that are considered a tremendous nuisance. Urban catch-neuter-release programs have had visible success only when applied to feral cat populations, mainly because cats are able to successfully rear litters in the feral state (without human aid), unlike feral dogs that have poor breeding success.

Catch-neuter-release as a method of Dog Control, was first introduced for dogs in Chennai in the early 1960's by the Blue Cross of India. As defined by the AWBI, the Animal Birth Control – Anti-Rabies (ABC-AR) Program involves the identification, tagging, de-worming, vaccination and neutering of 'stray dogs', followed by release back to their 'home' area. What the MSJE Guidelines do not mention however, is the fact that unless 70% of a dog population is neutered before the next breeding season, contrary to expectations of population reduction, a population surge results. The Anti-Rabies (AR) component requires the re-catching of each neutered dog every year for re-immunization against rabies. Interestingly, how rabies re-immunization/zoonoses control for unsupervised dogs are to be conducted is not defined in the MSJE Guidelines. The WHO recommends annual re-immunization in rabies endemic areas based on the knowledge that India and many other nations are still using obsolete vaccines under conditions of weak reliability (lack of refrigeration, corruption etc.).

The Ministry of Social Justice and Empowerment (MSJE) publication 'Animal Birth Control for Dogs' (pg. 6) states,

'The first three categories (restricted, partially restricted and community owned free-roaming dogs) can easily undergo sterilization and vaccination. Special attention is to be paid on the fourth category (feral dogs) to make sure that they are also covered and are the focus of this pamphlet'.

The AWBI has aggressively promoted a 'no-kill' objective since 1992, recognizing the futility of elimination as a control method and in a bid to perform a service to the large feral segment of India's dog population. But they demand instead that all dogs caught by Municipal Dog Squads should be handed over to Animal Welfare Organizations for neuter and release.

This is where the Program fails to recognize the problem. Animal welfare is a voluntary activity: India's canine rabies control program cannot be a voluntary one.

By defining the thrust of India's only dog control program (and considerable monetary resources) on dogs that can be caught by Municipal Dog Squads therefore, completely ignores the largest, fittest and most actively reproducing segment of the dog population – semi-supervised dogs. While this does, though only arguably, provide welfare to feral dogs, two critical issues are overlooked: (i) neutering already poorly reproducing dogs has little effect on controlling dog populations and (ii) rabies control is dependent on accurate and annual re-capture.

By issuing the Dog Control Rules, 2001 in late December of last year, the same Program is now official Government Policy

India's Official Dog and Canine Control Program supports the control of dog populations by concentrating resources on neutering, vaccinating and releasing feral dogs whose populations are in fact maintained by dogs from a completely different (semi-supervised/community owned) population segment.

The fact that ownerless dogs cannot be caught for yearly re-immunization is cause for tremendous alarm. Yet, neither the AWBIs 'compilation of guidelines for implementing agencies' nor the Dog Control Rules, 2001 even mention re-immunization or methodologies for the same.

If at all official Union Government Policy is to subsidize neutering for dogs, money should be directed to conducting free sterilization for all dogs, especially pets and community-owned dogs. The WHO prescribes a network of veterinarians who offer spay/neuter operations free of cost in mobile clinics and their own chambers. The actual expenses of the spay/neuter operation (presently calculated by the AWBI at Rs.340/dog) should be borne by the Government. Release in this scenario, is completely eliminated. The WHO also recommends Oral Vaccine Delivery (OVD) for effective rabies control (OVD has proved successful in reducing rabies cases in animals by 80% in Western Europe since 1990). Such a network/system is also expected to increase the number of dogs vaccinated annually because we would then be looking for a person rather than chasing after a dog. In other words, massive Program decentralization is a pre-requisite to success.

Animal Welfare interventions must only concern the segment of the population caught (feral and abandoned dogs) by Municipalities every day. The aim of animal welfare in situations of attempted management must be to eliminate suffering and reduce the number of dogs killed while implementing dog control programs.

It is only when owned dogs are neutered, that populations of stray dogs begins to decline, less numbers are caught and fewer still need to be euthanased.

The strongest argument for implementation of the WHO Program (distinct from the AWBI one) is presented by statistics of the number of dogs killed annually in the U.S., which fell from about 10 million annually in 1985 to about 1.5 million in 2000. In Dundee, UK the total number of dogs eliminated reduced by 79.1% after five years and by 90.53% after ten years of implementation of the WHO/WSPA Program. Even more significantly, ten years after Program initiation, the number of 'stray' puppies collected in Dundee fell by 95.3%^{vii}. After seven years of AWBI ABC-AR implementation, the PMC continues to eliminate more than 40 dogs a day. The number of dogs caught by Municipalities in cities around the country increases every year.

ABC-AR Program implementation has not checked the source of stray dogs, and unless rectified, dog populations will continue to rise as will the menace and complaints.

Dog control programs in India should not remain polarized on the 'kill or no-kill' issue. Both human and dog populations can only benefit if the right method is applied to the right segment of the dog population. In order to prevent the elimination of feral/unwanted dogs caught by Municipal Dog Squads, the animal welfare community in India must develop the infrastructure to provide shelter/new homes for them, because they cannot be released back to the streets.

Rabies is endemic in India. National Dog Control Programs should be targeted to eliminating rabies, not neutering dogs that cannot be caught for sustained re-immunization.

References:

^{i[i]} *Regional Strategy for Elimination of Rabies, Report of an Informal Consultation, New Delhi, 31 March – 2 April 1998*, WHO SEA Regional Office, July 1998.

^{ii[ii]} *Personal email communication*: December 2001. Mr. Clifton has been investigating and writing about animal care and control issues and urban ecology for nearly 30 years. He is a co-founder of Animal People.

^{iii[iii]} Sudarshan, M.K., et al, '*A Community Survey of Rabies, Anti-Rabies Treatment and Dog Population in Bangalore City*', Department of Community Medicine, KIMS, Bangalore, September 2001.

^{iv[iv]} Uniyal, M. and Chaudhuri, S., '*Stray Dog Populations and Control Efficiency in Pune*', Ecollage, July 2001.

^{v[v]} *Guidelines for Dog Population Management*, World Health Organization and the World Society for the Protection of Animals, Geneva, 1990

^{vi[vi]} Reported in *Animal Birth Control for Dogs*, issued by the Ministry of Social Justice and Empowerment, Govt. of India.

^{vii[vii]} *Stray Dog Control*, World Society for the Protection of Animals, 1999 update.