

Canine Catch-Neuter-Return (CNR) Good Practice Guides

Introduction to free-roaming dog interventions.

Learning Outcomes:

1. Summarise the benefits and problems with CNR as a DPM method

The International Companion Animal Management Coalition define dog population management as “To manage roaming dog populations and the risks these may present, including population size reduction when this is considered necessary”.

A variety of dog population management (DPM) interventions exist. Successful dog population management must be comprehensive, encompassing more than one method, and be sustainable, as all methods require long-term implementation in order to achieve their goals. There are primary and secondary methods of dog population management. The primary methods involve responsible pet ownership, catch and remove or catch and return, and the secondary methods include public education and waste management.

Primary methods of dog population management:

1. Responsible pet ownership

Many pet owners do not recognise the intrinsic link between their own pets and more general dog overpopulation. Indiscriminate breeding of pet dogs generates puppies which often end up in shelters or free-roaming on the street, as there are limited life-long homes available for even pedigree puppies. Responsible pet ownership reduces human-animal conflict and disease transmission, through appropriate reproductive control, training and vaccination. Promotion of responsible pet ownership is a necessary part of a DPM strategy.

*“Encouraging dog owners to be more responsible will reduce the number of dogs allowed to roam, improve the health and welfare of dogs, and minimise the risk that dogs pose to the community. The promotion of responsible dog ownership through **legislation and education** is a necessary part of a dog population control programme.”*

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2. Catch and remove

Catch and removal methods, include shelters or culling, and involve removing dogs from the free-roaming population. They may result in a rapid decrease in dog population size initially when the DPM method is implemented, but they are generally unsuccessful at reducing overall dog population size over longer periods of time. This is likely due to reproduction of the remaining dogs in the area and migration of new individuals into the area, increasing dog population size over time.

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Rehoming shelters:

Removing free-roaming dogs from an area and placing them into shelters, results in either euthanasia, adoption or permanent stay in the shelter. Shelters are very common, but are expensive, and require a large infrastructure. The number of dogs going into the shelter is usually greater than the number going out to new homes, which can lead to over-crowding. In all shelter environments, it is difficult to meet both the physical and psychological needs of dogs. Additionally, dog owners may also see the availability of a shelter as an 'easy disposal' option for their unwanted pets.



Dogs living in an overcrowded and under resourced shelter

Culling:

Culling involves removing free-roaming dogs from an area and killing them to reduce the number of free-roaming dogs.

There is contradictory evidence regarding the effectiveness of culling in reducing the negative effects of free-roaming dogs on public health. Most of the literature has shown culling to be ineffective at controlling disease in free-roaming dogs. However, there have been reports of culling decreasing the prevalence of visceral leishmaniasis in dogs over short periods of time, and others reporting a decrease in rabies prevalence, although the reduction in rabies prevalence was less effective than vaccination alone or catch-neuter-return combined with rabies vaccination.

In general, culling usually removes more of the healthy, friendly individuals than sick ones and is not an effective long-term solution. From both a public health and dog welfare point of view, culling is not an appropriate method of dog population control.

3. Catch and return

Catch and return methods, return the dogs back into the free-roaming population, and includes medical contraception procedures, vaccination-only programmes and catch neuter return (CNR) programmes. In order to be effective it is important that they consider not just free-roaming dogs, but the entire dog population as a whole.

Medical contraception:

There is continuing research into medical contraception as an option for dog population management. It requires that the dogs are caught, anaesthetised, treated and then released back to the same location from where they were caught. Currently, there is insufficient evidence supporting this as a long-term solution for controlling the reproduction of street dogs, as most medical contraception is focussed on males, and controlling reproduction is more efficient if reproductively active females are targeted.

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Vaccination-only programmes:

These are only effective at disease-control, not population reduction. They aim to control infectious disease – primarily rabies in dogs by developing herd immunity if more than 70% of the dogs are vaccinated, thereby reducing the risks to the public. It has no effect on dog population size and is not a viable option if the population reproductive rate or migration rate is high as there will continue to be a high prevalence of unvaccinated individuals.



Photo (IMG-6453) - puppy marked with paint after being vaccinated against rabies

CNR programmes:

This method involves catching free-roaming dogs, surgically sterilisation in either a mobile clinic or at a fixed-location clinic and then returning the dogs to the exact location from where they were caught. It requires skilled staff, clinical facilities, and anaesthetic and analgesic medications which can be restricted depending on geographical location. The main aim of CNR is to better control the population of dogs, to reduce their number and also create a healthier population.



Photo (IMG_0978) - dog having neuter surgery in a CNR clinic operating room

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*“Controlling reproduction in dogs prevents the birth of unwanted puppies and can help address the balance between demand for dogs and the size of the population. It is advisable to **focus efforts** to control reproduction on those individuals or groups in the dog population identified as the **most productive** and the most likely to be the sources of unwanted and stray dogs, to ensure best use of resources.”*

OIE Terrestrial Animal Health Standards Commission / September 2009

There is evidence to suggest that a combination of neutering, vaccinating and returning dogs back into their community can:

- reduce dog population size
- reduce the prevalence of rabies
- reduce the number of dog bites
- improve individual dog physical wellbeing
- improve human-animal relationships between dogs and communities in which they live

Case study:

A programme to sterilise and vaccinate neighbourhood dogs against rabies was established in Jaipur, India. Neighbourhood dogs were captured humanely, sterilised surgically, vaccinated against rabies and, when they had recovered, released where they had been caught.

Between November 1994 and December 2002:

- 24,986 dogs were treated in this way.
- Direct observational surveys of the local dog population indicated that 65% of the females were sterilised and vaccinated, and that the population declined by 28%.
- The records of human cases of rabies seen in the main government hospital of the city between January 1992 and December 2002 showed that the number of cases had declined to zero in the programme area but increased in other areas.

Reece, J.F. and Chawla, S.K., 2006. Papers & Articles. The Veterinary Record, 159, pp.379- 383.

CNR is often recommended as a welfare-friendly method of dog population control, but the potential for injury, disease transmission and even death exists within even the best-run CNR programmes. Also, the potential longer-term detriments of elective neutering cannot be overlooked. Neutering for the purposes of population control may mean that time is focused on meeting targets in terms of number of dogs neutered, rather than individual dog welfare and this may lead to compromises. The focus of CNR needs to be on individual dog welfare and the number of dogs to be neutered.

Secondary methods of dog population management:

1. Public Education

Schoolchildren under 15 years old are most likely to be bitten by dogs, and the majority of bites occur in the family home or at a family member or friend's home, by a known dog. Effective parental supervision of child-dog interactions and effective education of schoolchildren and the general

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public about safe dog-human interactions are essential to reduce the risk of dog bites. There is no evidence that breed-specific or 'dangerous dog' legislation has any impact on improving public safety. An educational approach is essential in the management of dog populations as it prevents the stigma relating to specific breeds, and reduces dog bite occurrences. As bites will often lead to the dog being abandoned or reported as stray, preventing dog bites can help to reduce free-roaming dog numbers.

It can involve classroom teaching to children or educational leaflets handed out to the public. Information should be provided on dog behaviour and welfare, bite prevention, and responsible pet ownership. Without the support of the community, dog population management is unlikely to be successful and will not be sustainable.

Additionally, there is an eLearning course called Humane Community Development (HCD) by the International Companion Animal Coalition. This online course provides a participatory framework for communities to work together to find humane, sustainable solutions to dog issues that are having negative consequences for people and animals. For more detailed information, see the ICAM coalition website: www.icam-coalition.org/tool/humane-community-development-hcd/

2. Waste management

Dogs with unrestricted access to resources will produce larger litters, with pups that are more likely to survive to reproductive age. Resources may be provided deliberately by human caregivers, or accidentally due to inadequate sanitation and refuse disposal. Resource restriction is a necessary element of population control. Controlling resources by improving waste disposal, is inadequate when used alone, but in combination with other dog population management methods, can help to reduce the dog population and have a positive impact on public health.



Photo (P1020289) – dogs sleeping and eating rubbish on the street due to lack of waste management

Which DPM method to choose?

There is no 'one size fits all' of DPM for all dog populations. Each target dog population where DPM is being considered needs to be strategically assessed, including engaging with the communities where the dogs are living. To choose an appropriate DPM method for the dog population of interest,

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street surveys and community questionnaires need to be initiated to identify what the problems are with the dog population. Once the problems have been identified, through analysis of the data collected in the surveys and questionnaires, specific goals can be defined as to what the intervention aims to achieve, and an appropriate dog population management solution can be planned.

Remember that dog population control methods may have both positive and negative welfare impacts, and good intentions don't always result in good dog welfare. We must measure welfare outcomes.

Case study:

A stakeholder focus group and discussion at the dog medicine, behaviour and population management workshop on the 28th November 2016 identified the following critical problems:

1. Rabies
2. Road traffic accidents
3. Free roaming dog attacks on the elderly and children
4. Too many dogs
5. Pet dog attacks (on children)

As shown in Figure 1. Different strategies, selected from the primary and secondary methods of DPM, would be employed to solve each of the critical problem identified.

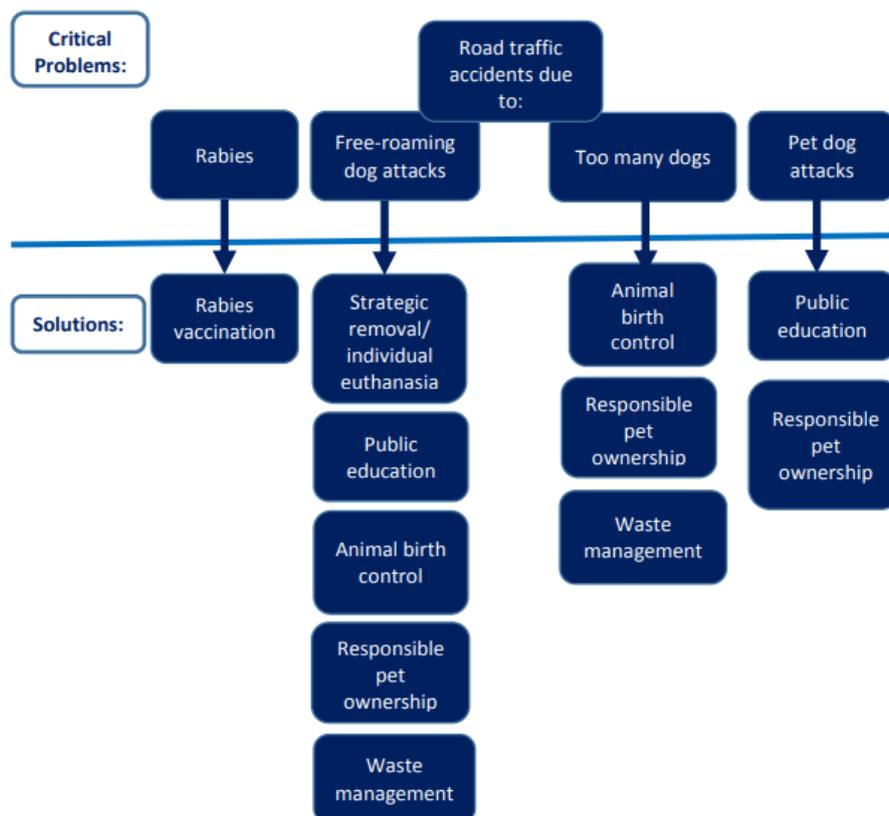


Figure 1. Identified problems arising from free-roaming dogs, and their strategic solutions

KVASU and JMICAWE (2016). Dog medicine, behaviour and population management workshop. Thrissur, Kerala.



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Checklist:

- ✓ Dog population management will require more than one method and must be sustainable
- ✓ Education is an essential aspect of all dog population management
- ✓ The methods selected must be appropriate to solve the problems identified in the assessment of the dog population

References:

Hiby, E., et al. (2017). "Scoping review of indicators and methods of measurement used to evaluate the impact of dog population management interventions." *BMC Veterinary Research* 13(1): 143.

International Companion Animal Management Coalition (2019). "Humane Community Development." from <https://www.icam-coalition.org/tool/humane-community-development-hcd/>

International Companion Animal Management Coalition (2019). "Humane Dog Population Management Guidance.", from <https://www.icam-coalition.org/wp-content/uploads/2019/09/2019-ICAM-DPM-guidance-Interactive-updated-15-Oct-2019.pdf>

Jackman, J., & Rowan, A. (2007). "Free-roaming dogs in developing countries: The benefits of capture, neuter, and return programs." In D.J. Salem & A.N. Rowan (Eds.), *The state of the animals 2007* (pp. 55-78). Washington, DC: Humane Society Press.

KVASU and JMICAWE (2016). Dog medicine, behaviour and population management workshop. Thrissur, Kerala.

Massei, G. and L. A. Miller (2013). "Nonsurgical fertility control for managing free-roaming dog populations: A review of products and criteria for field applications." *Theriogenology* 80(8): 829-838. Reece, J.F. and Chawla, S.K., 2006. Papers & Articles. *The Veterinary Record*, 159, pp.379- 383.

Reece, J. F., et al. (2013). "Decline in human dog-bite cases during a street dog sterilisation programme in Jaipur, India." *Veterinary Record* 172(18): 473.

Smith, L. M., et al. (2019). "The Effectiveness of Dog Population Management: A Systematic Review." *Animals* 9(12): 1020.

Totton, S. C., et al. (2011). "Stray dog population health in Jodhpur, India in the wake of an animal birth control (ABC) program." *Preventive Veterinary Medicine* 98(2): 215-220.