

# Introduction

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## 1.1. What is the Blueprint for Rabies Prevention and Control?

It is a document aimed at helping countries where rabies is present to begin implementing rabies control programmes to reduce the number of human rabies cases and potentially to eliminate rabies from an area. Part I focuses on the control of canine rabies. A second document (Part II) dealing with wildlife rabies control will also be compiled.



**Photo courtesy of the Serengeti Carnivore Disease Project**

## 1.2. Who is it for?

This document can be used by all persons and agencies concerned with implementing dog rabies control programmes including:

- ▶ Professionals (veterinarians and medics)
- ▶ Government/ministry officials
- ▶ Non-governmental organisations
- ▶ Field teams involved in the day-to-day rabies control activities (animal and human health workers and field personnel).

## 1.3. How does it work and what does it include?

The Blueprint is a user-friendly, web-based, question and answer document including contributions from numerous experts working in the field of rabies and provides hyperlinks to more detailed information and documents.

## 1.4. What is rabies and why is it important to control it?

Rabies, an invariably fatal disease, has been known and feared since antiquity and is usually caused by the bite of an infected animal. More than 98% of all human rabies deaths are caused by the bite(s) of rabid dogs. Rabies is distributed worldwide and can affect all mammals including humans.

The virus responsible for rabies infects the central nervous system resulting in a neurological disorder characterized by horrific clinical signs and symptoms in both animals and humans. Rabies poses a substantial threat to human health, killing more than 150 people every day and approximately 40% of bite victims are children. The psychological impacts following bites by a rabid animal can be traumatic. The high costs of life-saving human vaccines and hospitalization, and livestock losses to farmers have large economic impacts especially on poor communities. Rabies also threatens the survival of endangered wildlife species. Controlling rabies is critically important to prevent human deaths and alleviate its burden in animal species and on local and national economies. Read [here](#) for more information on rabies.

## 1.5. Why is it possible to control canine rabies?

There are no insurmountable obstacles to controlling dog rabies because:

- ▶ The global scale and magnitude of the rabies problem, a major factor in generating political support, is now widely recognized as [these studies](#) demonstrate.
- ▶ In regions where the highest number of human rabies deaths and exposures occur (Africa and Asia), the domestic dog is responsible for almost all maintenance and transmission of the disease. Intervention programmes focused on preventing rabies in dogs will therefore lead to the disappearance of rabies in dogs and other species, including humans, and this has been [successfully shown](#).



Photo courtesy of the Serengeti Carnivore Disease Project

- ▶ Rabies is entirely preventable. [Modern safe, affordable and efficacious vaccines for animals have controlled rabies in many parts of the world](#).
- ▶ Levels of rabies virus transmission in dogs are low, as shown [in this study](#), therefore elimination of canine rabies can be achieved.
- ▶ Effective strategies for the prevention of rabies in dogs, particularly through mass immunization campaigns, are available, as shown [here](#). Adequate community involvement can be achieved through increased awareness rendering most rural and urban dogs accessible for vaccination.



Photo courtesy of the Serengeti Carnivore Disease Project

▶ Diagnostic and surveillance approaches are available to help evaluate the impact of control and elimination efforts.

▶ Reducing human rabies deaths through effective dog rabies control is less costly than through increasing the use of costly human vaccine. Sustainable resources to support dog rabies control could become available by using savings from reduced demand for human vaccine by establishing strong collaborations between the medical and veterinary sectors.

Click [here](#) to view a study showing that canine rabies elimination in Africa is a feasible objective.

## 1.6. What is involved in a dog rabies control plan?

The first step is to define the canine rabies situation in your country, which can be as follows:

▶ Rabies is **present** and is either maintained in dogs or is fairly common in dogs, but is maintained in other species (**spill-over situation**). In both circumstances it is important to control rabies in dogs since they represent the greatest threat to human health because of their close proximity to people.

▶ Rabies has been **absent** for a number of years but **re-introductions** are possible.

▶ **No information** is available because no surveillance measures are in place.

▶ **I do not know, how do I find out?** Click [here](#) to see the global distribution of rabies.

The objectives of a dog rabies control project should be to eliminate dog rabies from a given area and to keep this area free from the disease forever. The Blueprint for Rabies Prevention and Control (Part I) will guide you through what you can do to achieve these objectives. An effective dog rabies control plan should involve two phases, an **attack phase** (the elimination project) and a **maintenance phase**. Very different techniques and strategies will prevail in the two phases, though epidemiological vigilance is essential to both. It is strongly suggested that sponsors of rabies control projects emphasize the importance of a maintenance phase in order to render the endeavour worthwhile.

If canine rabies is present in your country, there are a number of steps you need to consider to achieve the objectives described above as shown in [this diagram](#). You can access guidelines specific to each component of the process either by clicking on the headings of the diagram, or through the left navigation bar or the Site Map.

If canine rabies has been suddenly re-introduced into an area after a period of absence, click [here](#) for specific guidelines on contingency planning.

If wildlife species are responsible for maintenance, different approaches will be required, which will be dealt with in the second phase of the Blueprint for Rabies Prevention and Control.

## 1.7. Who can I approach for advice?

Click [here](#) for contact details of international agencies and bodies in charge of rabies.

## 1.8. What measures are available for controlling dog rabies?

Find below a summary of measures available for controlling dog rabies. Full details of these measures are provided throughout the document.

▶ The most effective approach to control dog rabies is through implementation of **mass vaccination of domestic dogs**, which is described in [this section](#). In most situations, vaccinating at least 70% of

the dog population will result in control of rabies as shown in [this study](#). However, coverage required may be higher if dog populations are very dense or lower in areas where most dogs are restricted in their movements.



Photo courtesy of Serengeti Carnivore Disease Project

- ▶ Efforts should be made to limit the unrestricted movement of owned dogs through promotion of **responsible dog ownership** and **legislative measures** (e.g. tie-up orders, individual animal identification and registry), as explained in more detail [here](#) and [here](#), where appropriate and with consideration for animal welfare. **Border checks** and other measures could be implemented to prevent the introduction of rabies into rabies-free areas, as described [here](#) and [here](#).
- ▶ Dog vaccination can be supplemented by methods to control the population of owned and unowned dogs, such as public education and legislation to develop responsible dog ownership, **reproduction control** of dogs and **re-homing** or **humane euthanasia** of unwanted dogs. However, dog population management is not always necessary, as explained [here](#). Indiscriminate inhumane killing of free-roaming dogs is not recommended; it can make the situation worse, is unpopular with local communities and causes international concerns about animal welfare. Read also [here](#) for further explanations on dog culling. Unwanted reproduction of dogs can be achieved using chemical contraception or sterilisation or immunocontraception and efforts are being made to produce and license safe and effective contraceptives and sterilants. Click [here](#) for more information on the dog population management tools just described.

## 1.9. Can we prevent human rabies through human rabies prophylaxis instead?

Human rabies deaths can be substantially reduced by increasing availability and accessibility of human anti-rabies vaccines and rabies immunoglobulins as shown in [this study](#). However, if this is the only strategy adopted, the financial costs are high and will continue to increase since human vaccines are much more expensive than animal vaccines and because the disease has not been eliminated at its source (in the dog population). Adequate provision of human rabies biologicals and appropriate training of medical professionals to avoid their unnecessary use are both essential when beginning a national canine rabies control programme. This strategy will help to prevent rabies in exposed people and protect workers involved in activities related to the control programme. It should be expected that at the beginning of the programme there might be an increase in the use of human biologicals due to improved accessibility and enhanced rabies surveillance. However, the eventual decline of human deaths that occurs by reducing rabies in dogs through effective canine rabies vaccination programmes generally leads to a decrease in the use of expensive biologicals for humans thus resulting in substantial savings to the public health sector.