

MARA DOG VACCINATION PROJECT

Wild Carnivore Protection and Improvement of Human Public Health
Through Domestic Dog Vaccination



2008 STATUS REPORT

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Mara Dog Vaccination Project

Introduction

The canine diseases possess major adverse impacts on both human health and domestic animal welfare in East Africa. Two major pathogens- rabies and canine distemper virus (CDV) are of principle concern for the pastoral community living in the savannah ecosystem near the wildlife protected area

Amongst the Maasai community living in the vicinity of the Masai Mara National Reserve, domestic dogs are kept in the village for livestock herding and household protection. Estimated dog population are 30,000 in Narok district and 10,000 in Trans Mara district. These dogs are in close contact with human and wild canids (canine species), posing threat of disease transmission to both populations.

Rabies is acute encephalitis caused by the virus in the genus *Lyssavirus*, family *Rhabdoviridae*. It is a complex and nearly always fatal (once symptoms appear) disease of all warm-blooded animals. Frequent and random zoonotic cases involving rabid dog attack on both human and livestock have been reported in this area, resulting in human public health concern and livestock (economic) loss. The rabid dog attack in the human population most frequently affects children under the age of 15 years and people often struggle to pay for the post-exposure treatment for the victims due to unavailability of treatment in the nearby hospital and the cost of treatment.

Canine distemper virus (CDV) is a highly fatal multisystemic viral disease of the canine species, capable of affecting both domestic and wild canids. In 1994, mutated CDV resulted in deaths of 1,000 lions in the Serengeti National Park (Tanzania). Other species affected during this outbreak include: jackal, hyena, cheetah, wild dog and bat-eared fox. The studies from Serengeti showed that CDV in the wild carnivore is maintained solely by the domestic dog infections around the wildlife parks/reserves. The Serengeti outbreak in the wild carnivore was controlled through extensive domestic dog vaccination against CDV around the park. Following the vaccination, it was reported that wild dogs have returned to the area in Serengeti where it was wiped out by CDV.

In the recent months (Dec 06- April 07), Trans Mara district has experienced CDV outbreak amongst the domestic dog population, accounting for estimated 1,000 dog deaths. The outbreak was reported from several different areas in the district, most recent case being in the area 10km away from the wildlife protected area. This area falls into the point where wildlife frequently cross over into the adjoining Maasai community land where both domestic dogs and wild canids roam free.

The important step in control of infectious disease to bring diseases from above epidemic threshold value to below threshold value, thereby preventing the threat of large scale epidemics. One of the interventions to achieve this is through modification of the pathogen interaction pattern so the disease cannot easily spread through a population, such as quarantine and immunization (vaccination) of the unaffected population surrounding the outbreak. Despite of devastating effect rabies and CDV have on canine, human and livestock, these two diseases can be controlled and eradicated through extensive vaccination program.

Domestic dog vaccination in the Serengeti was carried out using CDV (Nobivac Puppy DP) and Rabies (Nobivac Rabies) by Carnivore Disease Project (Ministry of Livestock Development, Tanzania). Following the vaccination campaign, CDV outbreak amongst wild canid was successfully contained and with the vaccination coverage of 65% the incidence of human bites from suspected rabid dogs was reduced by 92%.

Project Introduction

This project proposes to implement a domestic dog vaccination campaign adjacent to Masai Mara National Reserve. The aim of the project is to control and eradication of the two canine diseases in the area surrounding the wildlife protection area, thus 1). Reducing the clinical disease in the canine population for rabies and CDV, 2). Preventing the spread of CDV in the wild carnivore population, 3). Preservation of CDV free habitat to ensure the survival of the endangered wild carnivore (eg. Wild dog) and 4). Enhancing the health of local community through reduction of zoonotic cases.

Project Aim:

This project aims to achieve the following:

1. Control of CDV outbreak in domestic dog population of Trans Mara
2. Enhancement of CDV immunity in non-affected dogs in Trans Mara district
3. Prevent possible CDV outbreak spreading into the wild carnivore populations in the Masai Mara NR.
4. Control and Eradication of Rabies in two districts
5. Assessment and estimation of the impact of vaccination on incidence of animal and human rabies.
6. Promotion of public health awareness in the local community
7. Baseline data collection for domestic dog population (dogs/village ratio, vaccine coverage, body score)
8. Baseline data collection for human population (dogs/human ratio, zoonotic incident, other public health issues)

Material and Methods

The dog vaccination will take place on house-to-house strategy (village visits). The product used for the vaccination are Nobivac Puppy DP® and Nobivac Rabies® (donated by Intervet International). The baseline data for both human and dog populations are noted for each village. The owner will be issued a vaccination certificate for the vaccinated dog and each dog will be marked using colored plastic collar. The project will be carried out under close supervision by DVO.

Previous Areas Covered in 2007

The 2007 vaccination project covered 3,200 dogs kept by community adjacent to the wildlife reserve in Trans Mara district.

Areas to be Covered in 2008

The 2008 vaccination project propose to re-cover the previous year's work in Trans Mara district for this year's batch. We propose to cover an additional area in Olchoro Oirogwa conservancy and Saruni area where pack of 24 wild dogs were recently observed.

Project Members:

Trans Mara District Veterinary Officer

– Dr. George Omondi Atinga (Project Supervisor)

Mara Mobile Veterinary Unit

– Dr. Asuka Takita (Veterinarian)