



# Global partnerships are critical to advance the control of Neglected Zoonotic Diseases: The case of the Global Alliance for Rabies Control



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## ABSTRACT

There is a need for innovation to improve control of all Neglected Zoonotic Diseases (NZDs). The Global Alliance for Rabies Control was formed to prevent human deaths from rabies and relieve the burden of rabies in other animal populations, especially dogs. It aims to identify reasons for the neglect of rabies in developing countries and to develop strategies to improve rabies control. Through initiatives such as World Rabies Day and the Partners for Rabies Prevention, progress has been made towards increased awareness of the burden of rabies transmitted by dogs at scales from local to international. An evidence base of the feasibility of canine rabies elimination has been built up and now easier access to information and tools enables countries to design and implement rabies elimination strategies in a logical way, utilizing the structures of regional networks for rabies control. The body of evidence has built consensus amongst international stakeholders in rabies control and is now being used to encourage international policy change, attract investment and increase delivery of effective rabies control programmes in canine rabies endemic countries.

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## 1. Introduction

Since zoonoses are by definition animal diseases that are transmissible to humans and often have significant impact on public health, these diseases require an intersectoral approach to effectively control them. Because of this complexity and given that many zoonoses primarily impact poor rural communities of the developing world, they tend to be neglected. Rabies is an excellent albeit unfortunate example of such a neglected zoonotic disease (NZD). This disease is today recognized as one of eight NZDs by the World Health Organization (WHO) (WHO, 2015a), in recognition of the lack of progress in many countries all around the world with regard to the control of canine rabies. This lack of prioritization results in underinvestment in rabies control activities, which could be addressed by building a case for the costs and benefits of appropriate investments (Shwiff et al., 2013).

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Over the past 2 decades, it has gradually become apparent that new and innovative approaches are required to turn around the chronic neglect of Neglected Tropical Diseases (NTDs) (WHO, 2012). One innovative concept to materialise in this process has been the recognition of the potential of Public Private Partnerships (PPPs). Such PPPs could meaningfully address the neglect of some diseases that should demand much higher priority, given their impact on veterinary and public health (Buse and Walt, 2000; WHO, 2002; Widdus, 2005). Significant progress has been demonstrated by PPPs geared towards addressing other global public health issues, including the Global Alliance to Eliminate Lymphatic Filariasis (Addiss and Global Alliance to Eliminate Lymphatic Filariasis, 2010), the Roll Back Malaria Partnership (Roll Back Malaria Partnership, 2010), GAVI (Lob-Levyt, 2011) and the London Declaration group (Gulland, 2012).

The Global Alliance for Rabies Control (GARC), a non-governmental organisation established in 2007, set up the first PPP in the NZD field. The strategy and achievements of GARC with its partners are the subjects of this paper.

Rabies has evolved to infect all mammals, particularly carnivores, but the domestic dog populations of the developing world are the most significant reservoir and vector for human rabies

today. However, dog rabies is preventable. Vaccines to eliminate the disease in dogs have been available for decades and have been successfully applied in Western Europe, North America and more recently Latin America. Similarly, highly efficacious vaccines for use in humans have been available for a long time. Apart from the possibility of pre-exposure vaccination, the utility of post-exposure treatment to prevent the onset of disease even after exposure to a rabid animal is well established (Nel, 2013 and references therein).

While rabies was an established scourge in parts of Europe and the Americas by the 17th and 18th centuries, the dramatic spread of dog rabies in Africa and Asia occurred only during the 1900s (Nel and Markotter, 2007; Nel and Rupprecht, 2007). In Africa, several hundred million people are currently estimated to be at risk of endemic dog rabies, with more than 20,000 human deaths annually. In Asia, current estimates indicate as many as 35,000 human deaths annually (Hampson et al., 2015). Given the proven measures of control and preventability, the burden of rabies in the developing world is a major indictment of veterinary and public health strategies, practices and priorities and demonstrates that Universal Health Coverage remains a distant goal.

Given the above perspectives, the non-profit Global Alliance for Rabies Control (GARC) committed to the development of strategies to prevent human deaths from rabies and relieve the burden of rabies in other animals, especially dogs. From the outset GARC was built not only around the need for an integrated One Health intersectoral partnership approach, but also the realization that such partnerships would need to be functional on all the different levels of disease control, viz. the global, regional, national and community levels.

In the first phase of the programmatic development of GARC, the organisation took a lead on raising awareness of rabies and its neglect. This goal was achieved through the creation and coordination of an annual World Rabies Day (WRD) and the Partners for Rabies Prevention (PRP) group, which united all the major international stakeholders involved in rabies control.

## 2. Raising awareness and enhancing intersectoral cooperation

### 2.1. World Rabies Day

GARC's first major partnership initiative, with among others the World Health Organization (WHO), the World Organisation for Animal Health (OIE), the UN Food and Agriculture Organization (FAO), the US Centers for Disease Control and Prevention (CDC), and the Pan-American Health Organisation (PAHO), was the creation of an annual World Rabies Day (WRD, [www.rabiesalliance.org/world-rabies-day/](http://www.rabiesalliance.org/world-rabies-day/)) (Briggs and Hanlon, 2007). The endorsement by the international health organizations and encouragement of their member states to participate in World Rabies Day (OIE, 2011), have also enabled many governments to use the opportunity of WRD to launch or support improvements in rabies control. By focusing on partnerships, it was possible to maximise the limited resources available and to provide geographic reach through existing physical and virtual networks.

The inaugural World Rabies Day in 2007 saw events in 74 countries and over the past 7 years, more than 150 countries have participated, with educational outreach to millions of people worldwide. With the support of GARC there was, on the occasion of WRD 2013, a joint call from FAO, OIE and WHO for the support of global canine rabies elimination (FAO, 2015), which was a major milestone in the collaboration between international agencies. In 2014, 260 WRD events were registered with GARC and displayed on its website. GARC also coordinates specific partnership initiatives to increase its reach. For example, in 2014, a Global One Health

competition for teams of medical and veterinary students to execute WRD initiatives yielded 28 submissions from 17 countries. This project was implemented in partnership with the International Veterinary Students' Association and International Federation of Medical Students' Association.

The principal objective and achievement of WRD was the generation of widespread awareness of key rabies prevention messages about the fatality of rabies, the preventability of rabies, potential for elimination of rabies and the unfortunate state of neglect of this disease. It is therefore also no coincidence that WRD falls on 28 September, the anniversary of Louis Pasteur's death. Part of its success lies in the concept of WRD being fundamentally inclusive, creating opportunities for a vast variety of actions and messages by participants ranging from global intergovernmental organizations to small NGOs, and reaching different target groups and individuals around the world including teachers, children, academics, and health professionals.

Educational messages and models have been developed and promoted as part of the key rabies prevention activities. These have ranged from poster outreach in Africa, supported by FAO distribution channels; to support for the integration of rabies education into school curriculums, piloted by the government of the Philippines. In the most recent development, the WRD partnership framework will support the dissemination of the GARC Rabies Educator Certificate. This is a free web-based course for individuals such as community educators and health workers who would like to learn about rabies and how to teach others to prevent rabies and reduce deaths in their communities (GARC, 2015a).

### 2.2. Partners for Rabies Prevention (PRP)

Building on the initial success of WRD, GARC's next partnership initiative was to gather major stakeholders in the field of rabies prevention and control to share ideas and work collaboratively towards identifying and overcoming the main obstacles to the effective control and eventual elimination of dog rabies. To do so was a major challenge, considering the plethora of stakeholders ranging from intergovernmental organizations, international institutions and governmental agencies to non-governmental organisation, academia and industry. GARC approached this by creating a new informal network, the Partners for Rabies Prevention (PRP), in 2008, to provide a unified platform that would allow for collective strategic thinking and planning around the diverse skills, experience, and capabilities of the global spectrum of partners.

The PRP was modelled on the Partners for Parasite Control, which is composed of agencies of the United Nations, WHO Member States, research institutes and a multitude of NGOs (WHO, 2001). The PRP functions as a technical arm for GARC while also uniting and focusing the global rabies community on the common objective of dog rabies elimination (Lembo et al., 2011; Nel, 2013). GARC, serving as the Secretariat and convenor of the PRP, arranges an annual meeting and sets the meeting agenda. The organizations and individuals involved in each annual meeting reflect the agenda to be discussed, and meetings have included key representatives from international health organizations (FAO, OIE, WHO), academic institutions, foundations, NGOs, rabies vaccine manufacturers, WHO collaborating centres, OIE reference centres, rabies expert networks and governments of rabies endemic countries. Many partners within the PRP have a long history of facilitating country efforts to control rabies, and their combined expertise in rabies control and other relevant fields has contributed to the creative and solution-orientated environment that has characterised PRP meetings to date. To accommodate the range of activities, the partnership agreements vary in scale and focus from broad based umbrella agreements focusing on global rabies elimination

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