

Viewpoint

Catalysing progress in rabies control

With World Rabies Day taking place on September 28, **Sarah Cleaveland** and colleagues highlight its role in revitalising international control programmes and argue that elimination of the disease in both humans and dogs is feasible through mass dog vaccination.

WORLD Rabies Day is an initiative that was launched by the Alliance for Rabies Control in 2006 and has rapidly attained a broad global reach. As part of World Rabies Day campaigns, events have now been held in 125 countries, more than 70 veterinary and medical schools have become involved, 3 million dogs have been vaccinated, and educational materials have been made available to 100 million people worldwide (www.worldrabiesday.org). This has been a truly international effort with partners drawn from the spectrum of veterinary, public health, pharmaceutical, animal welfare and wildlife conservation agencies. At a time when the 'one health' concept is easily promoted, but less easily enacted, the World Rabies Day campaigns represent a genuine attempt at developing a one health approach towards a common goal.

There is no doubt that World Rabies Day has been an important catalyst for the revitalisation of national programmes in several countries (for example, Haiti, India, Philippines and Uganda), the construction of a global rabies network, and the creation of new organisational partnerships for technical support (for example, the Partners for Rabies Prevention) and new donor initiatives (for example, donations of 600,000 doses of vaccine from Brazil to Haiti). The success of World Rabies Day has also contributed to the involvement of the Bill and Melinda Gates Foundation in supporting large-scale rabies elimination demonstration projects in Philippines, Tanzania and South Africa.

Although policy makers have often considered rabies to be relatively insignificant, the engagement of so many communities in World Rabies Day events

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worldwide shows that the disease provokes substantial concerns at the grass-roots level. It has empowered affected communities to express their concerns and raise awareness about the need for rabies control.

When we consider why there are still major 'neglected diseases' in the world, it is not because the diseases themselves are of no importance or interest (rabies, for example, has been the subject of scientific study for more than 100 years). It is because the communities they affect are neglected; for rabies, in the vast majority of cases, it is only the poor who will ever die of the disease. World Rabies Day has effectively given neglected communities a global voice, allowing the insidious cycle of neglect to be reversed.

What can we learn from both successes and failures in rabies control? A principal message is that the elimination of both canine and human rabies is a feasible objective (Rupprecht and others 2009). Many factors have previously been invoked as an explanation for the lack of political interest in implementing rabies control measures, particularly in developing countries: the disease is not considered a significant problem for either human health or livestock economies; insufficient funds are available for dog vaccination campaigns; there are too many inaccessible (ownerless or stray) dogs that cannot be vaccinated; rabies in wildlife will impede or prevent successful control.

But the evidence base has been building to counter each of these arguments: canine rabies does pose a substantial public health and economic burden in many countries; mass dog vaccination campaigns are highly cost-effective in preventing human deaths; in almost all communities, a sufficient proportion of the dog population can be reached through conventional vaccination campaigns; there is no evidence that wildlife play a role as reservoirs of canine rabies, except in some parts of southern Africa (Lembo and others 2010). If mass dog vaccination campaigns can be implemented effectively, canine rabies can be eliminated throughout most of Africa and Asia, and the vast majority of the human rabies deaths that occur worldwide will be prevented.

Despite this optimism, we also need to be mindful of why rabies control has failed on past occasions. Building sustainability into control programmes remains a major issue. While funding can often be obtained to initiate programmes, usually with dramatic initial success, dog vaccination efforts need to be sustained over several campaigns until the virus has

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been eliminated from the dog reservoir population. Complacency may be a factor once the disease risk declines, but, more importantly, financing mechanisms and control strategies need to be developed that will sustain and progressively extend rabies-free areas.

Could rabies control be sustained through local initiatives? The answer is probably a qualified yes. There is no doubt that community mobilisation has led to great success in dog rabies control in parts of central and south America, and more

recently, in the Philippines. With the supervision of veterinary authorities and provision of vaccines, there is little reason why most communities could not design and implement annual dog vaccination campaigns, with relatively little additional funding needed. However, community-led initiatives may lead to patchy results, and heterogeneous vaccination coverage is likely to hinder control efforts more broadly. Adequate quality assurance for delivery systems, including provision of a cold chain and the training and authorisation of 'vaccinators', also needs to be provided by veterinary services.

Could dog vaccination campaigns be sustained by national governments in low-income countries? The answer to this is also a qualified yes. Mass vaccination of dogs has the potential to reduce dramatically the demand for costly human vaccine. In principle, these savings can be used

to support and sustain dog vaccination programmes. However, the difficulty remains that dog vaccination campaigns and human rabies prevention operate through separate ministries and separate budgets. The obvious solution is that national rabies control should be developed as an integrated programme so that costs and benefits are shared across ministries. However, political and administrative realities make this far from simple.

The final point about funding relates to the insistence that rabies control in Africa and Asia must be funded through sustainable internal resources. Yet, successful campaigns for most large-scale disease control or elimination programmes (for example, rinderpest, HIV, small pox, measles) have only been possible through major international funding support. A different set of rules seems to apply to 'neglected' diseases, such as rabies. With international

investment towards a coordinated and concerted effort, rabies could theoretically be eliminated more easily than diseases such as rinderpest or measles (Hampson and others 2009). Is there any reason why ridding the world of this dreadful disease should not be a valid health investment for the international community?

References

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