



# Rabid Bytes

The Newsletter of  
The Global Alliance for Rabies Control

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Photo: Scott Granneman, USA

## Editorial

This year we are entering our fifth year for World Rabies Day and, by working together, we truly have changed the world of rabies. The enthusiasm of the local champions that continue to invest their time and energy to improve educational awareness in their own communities is contagious! The individual stories that reach us from many countries prove that even one person can make the world a better place for those living at risk of contracting the deadliest disease known to mankind. So, with the growing success of World Rabies Day, where do we go from here? Well, one point is clear, the budgets for public health programs are tighter than ever and therefore it is more critical than ever that we must provide hard evidence as to the cost-benefit of establishing effective and sustainable rabies prevention programs in resource-poor, rabies endemic countries.

The first step in finding the proof we need is to determine the real global burden of rabies. Once we have this estimate, we can further look toward developing the most cost-effective intervention strategies. With this in mind, the Partners for Rabies Prevention is investing in conducting a global survey that will provide the information we need. This new study to define the Global Burden of Rabies is being coordinated by Dr Katie Hampson and Maganga Sambo from the University of Glasgow and we are looking toward all of our readers across the world to help us find the data we need to complete the study. We are in the process of opening up a website and soon we will be asking for rabies experts across the world to log into the website and to provide the data and other information that we need to build the Global Burden of Rabies model. By helping us to find the data that we need, you will be a part of the team that is providing evidence to help convince international funding agencies and national governments that when they are searching for strategies to promote public health, rabies prevention stacks up as a wise investment.

*Deborah Briggs, Executive Director, Alliance for Rabies Control*

## Rural Development and Rabies Control in Brazil

When human activities and farming come into contact with wildlife refuges, rabies exposures to humans and livestock can become an important issue. A new collaboration in Brazil is hoping to demonstrate how economic development in rural areas and disease management can work together.

With the support of its local State Department of the Environment (SEA), the Brazilian municipality of Miracema, a municipality in the state of Rio de Janeiro, Brazil, has recently created two overlapping Conservation Units, a wildlife refuge, and an Environmental Protection Area. These Conservation Units include small farms, waterfalls, peaks, hang-gliding areas, hiking trails, farms more than 100 years old, areas under cultivation and a small village of around 900 people which is now economically stagnant. The surrounding forest is the source of the municipality's water supply. The involvement of universities and research institutions will allow this area to become a focus for planned activities and sustainable development projects which could act as models for the whole of the northwest of the State of Rio de Janeiro.



*Phyllis Romijn and a colleague sample bats from a roosting site in the conservation unit*

The State Centre for Animal Health Research, part of the Rio de Janeiro State Agricultural Research Agency (PESAGRO-RIO), conducts routine surveys of infectious diseases which affect animals that are important to the local economy. Some of these diseases are zoonotic, like rabies, and originate in wild animals. As canine rabies is under control in the State of Rio de Janeiro, the risk of transmitting this disease from animals to humans involves contact with infected bats, mainly of the species *Desmodus rotundus*. These bats and other wild mammals shelter in the few remaining natural environments.

Collaboration between PESAGRO-RIO and the Miracema SEA is attempting to integrate economic and environmental interests. It involves training farmers whose land borders the environmental protection areas to report suspected cases of rabies, *Desmodus rotundus* bites within their herds, and the locations where the bats can be found. A local team is being trained to provide continuous monitoring of bats, to arrange occasional training sessions on the prevention and control

*Continued on page 2...*

## Adopt a Village: A Rural Rabies Prevention Project

India reports about 20,000 deaths from rabies every year, and the majority of victims are from rural areas and have lower socio-economic status. Domestic dogs are the major reservoir of rabies, and effective control which requires integration between veterinary and human health services is often not achieved.

Now, a 2-year project supported by the Alliance and its partners called 'Adopt a Village' has brought medical and veterinary professionals together in a novel intersectoral project for the prevention and control of rabies in a rural community. Its objectives are to develop a model rabies prevention programme that will empower local public health experts around the world to prevent rabies in their own communities.

In Southern India, the project is being carried out in 3 study and 3 control villages around the city of Bangalore. After these villages were selected, about 20% of households in each area were interviewed to assess their baseline knowledge of rabies. After this initial assessment, a variety of different educational tools were developed for use in the study villages, including training charts used by rabies



*Deborah Briggs with the village women now trained to educate their fellow villagers about how to prevent rabies.*

volunteers to educate villagers, posters and videos, an educational calendar, book labels for school children, and even a Snakes & Ladder game for educating school children about how to prevent rabies. The use of local TV, school networks, wall paintings and folk dance performers were all utilised to help spread the messages, and World Rabies Day events were held in the study villages.

Meanwhile veterinary professionals were trained on the use of modern diagnostic techniques, and the previously inadequate surveillance systems for rabies in both humans and animals are being improved. A system of reporting animal bite cases from local hospitals is also being established.

A large animal welfare component of the project has also been initiated that involves vaccinating the dogs against rabies, deworming and collaring of the dogs in the study areas. This component of the project is being accomplished with the help of Karuna Animal Welfare Association of Karnataka, Bangalore.

Pre-exposure vaccination of school children and other risk groups using intradermal vaccination is also in progress.



*Deborah Briggs with Dr Ashwath Narayana from KIMS medical college (left) and Dr ML Satyanarayana, Dept of Veterinary Pathology, Government Veterinary College (right).*

Upon completion of the project, there will be an assessment of its impact that will include a cost-benefit analysis and an evaluation of sustainability.

*Summarised from the project interim report by Louise Taylor of the Alliance. The project in Southern India is being implemented by the Department of Community Medicine, Kempegowda Institute of Medical Sciences (KIMS), the Department of Veterinary Pathology, Government Veterinary College and the Department of Neurovirology at the National Institute of Mental health and Neurosciences, all based in Bangalore. It is sponsored by the Global Alliance for Rabies Control (GARC), the Rabies in Asia (RIA) Foundation and the Commonwealth Veterinary Association (CVA). Further details are available on the [Alliance's website](#).*

### BRAZIL...continued from page 1

of rabies and other diseases prevalent in the municipality, to provide guidance during regular animal rabies vaccination campaigns and to exchange relevant information with the public health and protection authorities. Biological samples from wild animals in the Reserves and from herbivores are collected and analysed under conditions of strict biosecurity in order to look for evidence of viruses and other zoonoses. Serum, tissue, secretions and excretions from any bat species suspected of being ill, and from *Desmodus rotundus* collected around farms or in drains, may be an indication of risk. The results of the analysis are sent to the coordinators of specific control programmes.

In Brazil, canine rabies has been controlled through annual vaccination campaigns and educational programmes organised by the public health authorities. However, bovine rabies is an issue throughout South and Central America, where an estimated one million cattle die of infection every year. In a number of countries, wildlife rabies has become more and more of a problem, and in Brazil the vampire bat species *Desmodus rotundus* is considered one of the main sources of rabies in animals which are important to the local economy. In the state of Rio de Janeiro, rabies in herbivores is reaching endemic proportions, which causes economic problems involving livestock, mainly cattle. Efforts are currently focusing on monitoring and ultimately controlling populations of *Desmodus rotundus* vampire bats, as well as planning preventative vaccination campaigns for herbivores in at-risk areas.

*Contributed by Phyllis Romijn of PESAGRO-RIO, in Rio de Janeiro, Brazil, email: [phyllisromijn@gmail.com](mailto:phyllisromijn@gmail.com)*



## Rabies Control Progress in Bangladesh

In Bangladesh, rabies infects dogs, cats, foxes, jackals, mongeese and cattle. In 2006, the Infectious Disease Hospital in Dhaka reported that more than 2,000 people die from rabies and more than 300,000 people are bitten by animals yearly, and these conditions are still thought to be under reported. More than 85% of rabies patients are from rural areas, more than 95% are due to dog bites and most deaths are of children aged between 6-15 years. Until recently, only nerve tissue vaccine (NTV) was available from the government to treat bite victims. This is a relatively ineffective vaccine with side effects which the World Health Organization has recommended should be phased out and replaced by Tissue Culture Vaccine (TCV).

At a meeting in May 2010 the Bangladesh Anti Rabies Association (BARA) identified Rabies as one of the major public health problems in Bangladesh. It is now taking a very active role in fighting rabies in Bangladesh using advocacy, training, street dog population management and the vaccination and sterilization of pet dogs. In 2010, several major milestones were reached through its efforts, including making TCV available across the whole country, almost eliminating the use of NTV, the first nationwide observance of World Rabies Day and a pilot study of an Animal Birth Control programme.



*Health Education for Rabies Control Training for School teachers*

Cox's Bazar. A school-based health education project is also just beginning in Dhaka.

There will be a study on the efficacy of the intradermal TCV programme since its introduction in July 2010, and in November 2010, a consultative meeting was held at Dhaka on the implementation of the Rabies Control Program by using intradermal TCV across the whole country, attended by all concerned stakeholders.

Finally, brain tissue from 7 suspected livestock animals (6 cows and 1 goat) and a suspected rabid dog has recently been sent to collaborators at OITA Medical University in Japan for rabies testing. Tissue was collected during videotaped post mortem examinations and RNA was separated. All of the samples were found positive, an important finding for further rabies control interventions in livestock.

*Contributed by Prof. Moazzem Hossain. Prof Hossain recently retired from the Bangladesh Government, where he was involved in the introduction of Tissue culture vaccines, the elimination of Nerve Tissue Vaccines and a pilot Animal Birth Control study. He is now fully engaged in Rabies control as the chairman of BARA, and the founder and chairman of IACIB. Further details of BARA's work can be found on their [IACIB webpage](#).*

## Taiwan Rabies Prevention and Control Conference 2010

The Taiwan Animal Health Research Institute, Council of Agriculture, organized the Taiwan Rabies Prevention and Control Conference 2010 in Tansui, Taipei County on 6-10 December 2010 with the objective of exchanging information on rabies control and recent research progress on lyssavirus as well as exploring the possibility of closer cooperation with the international community to eliminate human and animal rabies.

National and international speakers from 6 countries, Australia, Indonesia, Japan, Philippines, USA and Taiwan presented recent information and developments in rabies control, surveillance and research. More than 200 participants including government and private veterinarians, physicians, biologists, academicians, researchers and scientists attended the occasion. Represented were a number of institutions, including Department of International Affairs of the Council of Agriculture, Bureau of Animal and Plant Health Inspection and Quarantine, Taiwan Centers for Disease Control, National Taiwan University, Taiwan Veterinary Medical Association, Bat Association of Taiwan and the private sector. This was an important opportunity to bring together the Taiwanese scientific community to advocate and maintain the awareness about rabies prevention and the significance of keeping rabies out of Taiwan.

Taiwan has been free of rabies for more than 50 years. There has been no indigenous human case since 1959 and no animal case since 1961. It is very important for rabies-free countries like Taiwan to remain vigilant against the re-introduction of rabies and cooperate with neighboring countries especially as rabies is still endemic around it.

*Contributed by Dr. Shu-Hwae Lee, Head of the Division of Epidemiology Research, Animal Health Research Institute in Taiwan & Betsy Miranda, Asian Coordinator for the Alliance.*



## Animal Welfare and Rabies in Sierra Leone.

*Dr Gudush Jalloh talks about the work of his organization, the Sierra Leone Animal Welfare Society (SLAWS):*

"Sierra Leone's civil war massively increased the stray dog population as people abandoned their pets when they could not manage to feed themselves. In 2008, it was estimated that 147,000 dogs roamed the streets of the Western Area which includes Freetown (the capital), feeding and mating in garbage dumps. The war also devastated the country's infrastructure and left it with only 5 qualified veterinarians, most of whom work in administrative roles.

After the war, the need for security means that almost every house keeps a dog, many taken back from the streets. Although many non-governmental organizations were active in Sierra Leone following the war, all were focused on helping people, and none on animal welfare. SLAWS' goal was to fill this gap, and we used the need for security and rabies control as an entry point to improve animal welfare. Rabies Control, Dog Population Control and Animal Welfare are so interrelated that it is difficult to treat them as separate entities.

Rabies is endemic in Sierra Leone, and it is the responsibility of the Ministry of Agriculture and Food Security, to vaccinate and to address localized outbreaks of rabies which they do often in the face of limited vaccine supplies. There is no mandatory dog vaccination and most cases of dog bite and clinical rabies are not reported. In fact, deaths from rabies are sometimes associated with demons because of the behavior of victims before death. Rabies post exposure prophylaxis is very expensive when available and is far from the reach of most people.

To address these issues, in 2005, SLAWS started a humane stray dog and rabies control programme. We started by conducting radio programmes discussing rabies and also provided free rabies vaccination and treatment for worms, mange, fleas and ticks for owned and community dogs. A three wheeled motorbike was added as a way of collecting dogs from communities to bring them to our clinic for spay, neuter and treatment. At first it was an uphill battle to convince pet owners to allow us to collect their animals – some believed the government had sent us to kill the dogs, some thought we would sell them. When a white man, who was training the team, rode the motorbike to collect dogs, people wanted him to pay them first. It took quite a long time to get people to understand our objectives.



*Dr Gudush Jalloh at work*

However, two months after our intervention, wonders started to happen- the dogs' skin and body condition improved and the previously sick, mangy dogs became good-looking. With fleas and ticks eliminated, people were convinced that their dogs were healthy and that their children were safe from rabies. People's perceptions were changing. With the support of the community leaders, we started to conduct spay neuter in tents within the communities, and our activity was further boosted by first a van, and then two mobile clinics. Our output increased from 10 to 30-40 dog sterilizations per day. As community relations improved, the Freetown city council embraced us and we started joint programmes. Mass killings of dogs as a means to control stray dogs were averted and more areas requested our services. The number of people visiting the stationary clinic increased from 1-2 a month to 3-5 a day, and the clinic's income has increased from a 'thank you' to 50,000-100,000 Sierra Leone (about US\$11-22) a day. Sometimes we cannot meet the demand.

To date we have successfully conducted more than 41,000 vaccinations and over 15,000 sterilizations. We have signed a Memorandum of Understanding with the Freetown city council, recognizing that our activities are complimentary. Our profile continues to rise, and we now serve as a point of reference both locally and internationally. We established school kindness clubs so that children can promote animal welfare and Community Animal Health Clinics with trained Community Animal Health Workers. We plan to establish two more clinics in the west and east of Freetown to reduce travel time for dog owners, and are now starting to promote non-surgical sterilization methods for male dogs and cats, which should reduce costs and the need for specialized equipment and drugs. These initiatives are all welcomed by the Freetown City Council.

For countries like Sierra Leone where dogs are the main source of rabies, strengthening the relationship between humans and animals (Animal Welfare) will form the basis for successful dog population and rabies control. My personal opinion regarding the future for stray dog and rabies control is: (1) Humane Education of the public about the dangers of rabies; (2) Initial Free Mass vaccination to achieve 75% of the dog population in the country; (3) To instill and restore responsible pet ownership with Community participation; (4) Stray dog population control through mass sterilization of owned and community using surgical and chemical methods; (5) Continued and mandatory annual rabies vaccination; (6) Enacting of bylaws and licensing of pets."

*Dr Gudush Jalloh founded SLAWS in 1988, its website is [www.slaws.org](http://www.slaws.org). SLAWS's rabies control activities have been / are supported by World Society for the Protection of Animals (initial dog survey, vaccination clinics, motorbike, van and mobile clinic) Royal Society for the Prevention of Cruelty to Animals (veterinary training), Humane Society of the USA (training and van), Mark Whitfield a paramedic from the UK (mobile clinic) and the Alliance for Contraception in Cats and Dogs (chemical sterilization programme). He would also like to thank Dr James Umlas for saving his eye sight, the families of Dr Charles Bradly, Dr Joann Lindermayer, Rosalind Shaw, Mr&Mrs John Walsh, Sahr Johnny and Fatima Khada, Dr Fudir Turay, the American vets for their support in diverse ways and his wife, Mrs. Memuna K Jalloh who has stood beside him through thick and thin.*

## Cat-Transmitted Rabies in Narsingdi, Bangladesh

About 2,000 people die of rabies in Bangladesh annually with more than 100,000 people taking post exposure treatment. The National Rapid Response Team (NRRRT) of Bangladesh investigated a rabies outbreak in a rural community in Narsingdi district of Bangladesh in the first week of December 2010. The community has an area of 1.5 square kilometers with 1265 people and 245 households. The team carried out verbal autopsies and collected data from the surviving exposed personnel and household members of the community to assess the number of animal bites and rabies cases in the last year.

In the second week of September 2010, a cat started to attack villagers without any provocation. It attacked seven people of whom three died subsequently. The cat was attacked itself by a suspected rabid stray dog in the last week of August 2010, and buried 2 months prior to the investigation taking place. Of the seven exposed human cases, 5 were male, 2 female and the median age was 24. Four were attacked on the leg, two on the upper limb, and one was attacked on both. Three washed the wound with soap and water immediately and applied salt on the wound. All victims sought care from a traditional healer (Kobiraj) but none took anti rabies vaccine (ARV). After experiencing the first death on November 11, 2010, the other exposed cases went to physicians/hospitals for post exposure treatment. The mean duration of animal exposure to seeking medical care was 54.57 days. Three of the exposed persons developed manifestations of rabies, with a mean incubation period of 66.67 days (SD±7.638). The manifestations including restlessness, paraesthesia at the site of bite, hydrophobia, aerophobia, dribbling of saliva and paralysis, and all of these people died. The mean time passed between exposure and death was 69.33 days (SD±8.737).



Four other persons attacked by the cat were at risk as they started to take ARV two months after exposure. The wider community was also at risk as rabies could have been spread from the cat to other animals. Five out of 79 households surveyed had a pet dog or cat. The majority of the community members (89%) frequently saw stray dogs in their courtyards. About 20% of the household members regularly saw Jackal and Mongoose and about 18% saw bats flying around their households. The team also identified three cases in the community with a history of dog or cat bite in the last year without the development of rabies.

Prior to November, there had been no reports of rabies for several years in that community and the recent cases took them by surprise. Awareness of rabies transmission through cat and easy availability of vaccine could avoid these unnecessary deaths.

*Submitted by Prof Be-Nazir Ahmed of the Institute of Epidemiology, Disease Control and Research (IEDCR), Dhaka, Bangladesh and Dr Ziauddin Ahmad, Chairman of Rabies in Asia, Bangladesh on behalf of colleagues there and at the International Centre for Diarrhoeal Diseases and Research (ICDDR), Dhaka, Bangladesh and the Central Disease Investigation Laboratory (CDIL), Department of Livestock, Dhaka, Bangladesh. Prof Be-Nazir Ahmed can be contacted by email: [debenazirahmed@yahoo.com](mailto:debenazirahmed@yahoo.com), or [benazir1959@gmail.com](mailto:benazir1959@gmail.com)*

## World Veterinary Day 2011 Focuses on Rabies



World Veterinary Day was first celebrated by the World Veterinary Association (WVA) in 2001, and it is now celebrated each year on the last Saturday of April.

In 2008, the WVA and the World Organisation for Animal Health (OIE) agreed on the creation of the World Veterinary Day Award, which aims at rewarding the most successful celebration of the veterinary profession by national veterinary associations, alone, or in cooperation with any other selected veterinary body.

This year's fourth edition of the award intends to highlight the role veterinarians play in veterinary public health. Both OIE and WVA support the "One health" concept under which existing systems of health governance at world, regional and national levels should collaborate in a harmonised and coordinated manner to prevent new hazards.

Rabies is the chosen topic for this year. It is a vaccine-preventable disease that never-the-less kills 55,000 people each year, mostly children. 99 per cent of all human cases are caused by bites from infected dogs. Vaccination in animals reduces the incidence of the disease, eliminates suffering and avoids recourse to mass culling while also saving human lives.

Action against such a deadly zoonosis offers an opportunity to put the focus on the positive contribution of veterinarians to public health as they are key players in the prevention and control of animal diseases. The general public often associates the veterinarian only with animal health while the role of the veterinarian as the safeguard of human health seldom finds recognition.

World Veterinary Day (WVD) in the year 2011, which has itself been declared World Veterinary Year, makes it a great opportunity to address this knowledge gap. World Veterinary Day 2011 will contribute to raise awareness about rabies prevention and control through the action of veterinarians.

To promote World Veterinary Day 2011 and for the first time, the OIE and the WVA have developed a public awareness film. It is well known that a picture is worth a thousand words. It can convey thoughts and ideas; it can thrill and inspire us. Often, long after the words have been forgotten, pictures stick in the mind. Let us hope that the film will have the same impact. Raising awareness and encouraging international solidarity ultimately drives our work and this is what makes World Veterinary Day a cause for celebration. It all starts with involvement.

*Contributed by Julie Strat and Maria Zampaglione of the OIE Communication Unit. Further details on WVD 2011, the award and the public awareness film are available on the [OIE website](http://www.oie.org).*



## Communications strategy for WRD in Togo

With communicable diseases, our approach in Togo has been to try and reach the greatest number of people by making use of both the public and private media. In order to get the message across more effectively for World Rabies Day 2010, we therefore organised a series of activities which began two days prior to the event (September 26th 2010).

We started off with information sessions for journalists working in both the state-owned and private media. A total of 70 journalists attended from television, newspapers and magazines. The meeting lasted a whole morning and gave us an opportunity to present a report on the FAO fact-finding mission which had taken place from 17th to 26th August 2010, and which painted an alarming picture of the rabies situation in Togo. In fact, the report showed that, within a population of 600,000 dogs (an estimate based on Togo's 700,000 families and households) only 10,000, or 1-2% are vaccinated. Furthermore, the fact-finding mission notes that, out of 314 biting dogs which were detained for observation in the capital of the Kara Region (in the north of Togo), 40 developed rabies. So the disease is obviously rife in Togo, but it is neglected to the point of being ignored.

We then explained how the disease is transmitted and how people can be infected. We demonstrated the clinical signs of rabies in animals and humans, and showed how it can be prevented, so that the journalists would have the tools they needed for getting the message across. These tools would also help them to raise awareness about rabies and to show why we need a World Day dedicated to combating the disease.

The following day, we broadcast programmes to the general public, in French and in the two main dialects. These went out on five TV and 4 radio stations, both public and private. The programmes showed pictures of bite victims being vaccination as well as images of patients who had arrived in the late stages of the disease. Representatives from the Sanofi Pasteur Laboratory, which had largely funded the information sessions, also invited the journalists to take part in a competition for the best report on rabies.

In the evening, we then joined the Minister for Agriculture and Livestock, a representative of the Minister of Health, and representatives from the FAO and WHO in Togo to give a press conference on the rabies situation and the ways in which government authorities aim to lead the fight against the disease. Finally, on 28th September, a year-long campaign was launched to offer free vaccination for dogs throughout the country.



*Contributed by Dr. Majesté Wateba , Assistant Professor at the Infectious and Tropical diseases department of the Medical University, Lomé, Togo. Dr Wateba frequently appears on television with bite victims after an attack has occurred in Lomé to show what post-exposure vaccination against rabies involves and to encourage other bite victims to come forward for treatment.*

## An Update from Mozambique

Human cases of rabies appear to be increasing in Mozambique, from an average of 29 cases reported per year from 2003 to 2007 to 47 per year from 2008 to 2010. However, it is also clear that human and especially animal cases are seriously under-reported (only 90 cases of animal rabies were reported from 2008-2010). Most infected animals are probably sacrificed and the country suffers from poor veterinary infrastructure and logistics, a lack of transport facilities and poor public awareness about the risks of rabies. Although there have been no reported cases of rabies in wildlife in Mozambique, there is an important population of endangered wild dogs (*Lycaon pictus*) which is vulnerable to the threat of rabies from unvaccinated domestic dogs.

As usual, split responsibilities for rabies and its control makes management difficult. The Directorate of Veterinary Services is responsible for rabies control activities, the Directorate of Animal Science is responsible for diagnostic testing and research, the Ministry of Health is responsible for human case diagnosis and treatment, and municipalities and regional veterinary services all play a role.

However, recent collaboration between these authorities has had a tremendous impact. It has led to a re-evaluation of the importance of rabies, the launch of a National Strategy for the Control of Rabies, which was approved by the Council of Ministers in 2010, and participation in World Rabies Day activities to promote awareness. The Mozambique Animal Protection Society (MAPS) with the support of Maputo Hash House Harriers organized a walk for rabies on World Rabies Day (WRD) which was well supported and enjoyed by all, both two and four legged participants. Information pamphlets were also handed out around Maputo to encourage people to have their animals vaccinated.



*Younger members of MAPS on the walk for Rabies on WRD 2010*

Rabies is now a priority of the Ministry of Health, the country's veterinary service are being strengthened, and the Directorate on Animal Services Vaccine Unit is planning for production of an inactivated rabies vaccine in a new facility. The government has allocated more funds for the purchase of vaccinations as well as education programs to coincide with WRD 2011. They have also made several videos on rabies and rabies prevention that will be screened on the local TV stations as well as talk shows on Mozambique Radio to promote rabies awareness and help to educate the people on the facts about rabies and how they can protect themselves and their animals by encouraging them to have their animals vaccinated.

These recent changes in rabies control have had a dramatic effect on reporting rates, reduction in bite cases and participation in vaccination campaigns. For example, the percentage of bite victims receiving post exposure prophylaxis has risen from around 9% in 2008 and 2009, to over 40% (of 1,301 bite victims) in 2010.

MAPS has recently signed an agreement with the Veterinary facility of the EM University in Maputo and will be doing monthly joint outreach programs that will involve sterilization and rabies vaccination involving veterinary students, as well as educating people on the dangers of rabies and how to protect their families. This outreach program will initially be conducted around the greater Maputo / Matola areas, but hopefully will be extended country-wide.

It is very rewarding to see the growing awareness of rabies and rabies control in Mozambique.

*Contributed by Moira Felgate, of [MAPS](http://MAPS).*

## Rabies on the agenda of Global Neglected Zoonotic Diseases

The third international conference on Neglected Zoonotic Diseases, entitled “Community based interventions for prevention and control of NZD”, was held at the WHO headquarters, Geneva, 23-24 November 2010. As the name suggests, “Neglected Zoonotic Diseases” (NZDs) are a group of diseases that require new approaches to be dealt with effectively. Three key requirements for successful NZD control have been recognized in the final report of this meeting:

- (i) consideration should be given to both the needs of communities and their livestock and pets affected by NZDs
- (ii) an integrated approach (one health concept) should be available to cure, prevent and control disease in humans and animals with an emphasis on control in the animal reservoirs and implemented by close collaboration of key sectors involved
- (iii) evidence-based advocacy should be used to levy resources and commitment for control from the national and international community

Concerning rabies, significant progress has been made in the prioritization of this disease since the first (2005) and second (2007) international conferences on Neglected Zoonotic Diseases. Rabies is now recognized as one of the most important NZDs and for the first time target dates for the elimination of rabies in Latin America and Asian countries had been set, with the recognition of the availability of effective and workable proven solutions for dog mediated human rabies.

For example, presentation of the progress and re-newed focus on dog rabies in Peru have demonstrated consistent decline in dog rabies and zero human rabies cases since 2006. The Philippines also presented their detailed program towards the elimination of human and dog rabies in 2020. Presentations from China where the disease has been re-emerging since 1996 and killing more than 2000 people annually since 2003, Sierra Leone where rabies is being tackled across sectors for the first time and various other countries, were discussed within the framework of addressing the neglect of rabies at their respective national levels and in the context of the current understanding of the global burden of rabies.

The meeting also provided an opportune platform to discuss and integrate into the global portfolio of neglected diseases, the current program towards an assessment of the cumulative global burden of major NZDs. This includes an update of the total burden of rabies, launched by the Global Alliance for Rabies Control (GARC) and its Partners for Rabies Prevention (PRP), during 2010. More [detail on this study](#) is available on the PRP website

*Contributed by Prof Louis Nel, Professor of virology at the University of Pretoria, South Africa, and Dr François Meslin, Department of Neglected Tropical Diseases at WHO. The [final statement from the meeting](#) is available on the WHO website.*



### Knacker Cracker Race

Whilst most of us were sleeping off New Years Eve celebrations, Ashley Banyard from the Veterinary Laboratories Association (UK) dressed up in high security unit labwear and mask to raise awareness of rabies and run in the 2011 New Year ‘Knacker Cracker’ race. Unperturbed by cold weather, mud, an injury, and the race’s reputation as the toughest 10km race in the UK, he completed it in just 78 minutes. A record-breaking 300 runners turned out, many in fancy dress, to race up and down 5 steep hills (more than 2500ft of elevation) and cross a river on stepping stones.

### CDC Grand Rounds on Rabies

The Centers for Disease Control and Prevention (CDC)’s Public Health Grand Rounds is a monthly series created to further strengthen CDC’s common scientific culture and foster discussion and debate on major public health issues. The January session was entitled “Rabies Elimination in the 21st Century?” and included presentations by Dr Charles Rupprecht, chief of the rabies program at CDC, Dr Dennis Slate, the National Rabies Management Coordinator, US Department of Agriculture, Dr Luis Fernando Leanes of the Veterinary Public Health Unit, the Pan American Health Organization and Dr Deborah Briggs of the Alliance. The information presented covered traditional and new approaches to disease prevention and control, the importance of evidence-based strategies and interventions for human prophylaxis and animal control, and discussed current opportunities and challenges in eliminating this disease in both developed and developing countries.

It is archived on the CDC’s website and can be watched [here](#).



## Of Dogs & Men

### Random Early Morning Rabid Musings Under a South African Sky

During a lively 2011 post-SEARG site visit by a contingent of PRP academic, commercial, government, and institutional representatives to the BMGF-supported canine rabies elimination project in KwaZulu-Natal, our ever gracious University of Pretoria guide, Professor Louis Nel, asked participants to consider a paragraph or two of thoughts to share with others, after this pleasant February interlude. Per request, the following is a brief, appreciative, loose retrospective collection of fond memories, through the lens of an oft foggy, somewhat jet-lagged, sleep-deprived minds-eye, thanks in no small part to our endearing local hosts, Kevin le Roux et al.

Remembrance of a patchwork of clouds, over verdant pastoral landscapes, lush from spring rains; swollen, gushing, root beer-colored streams and rivers; brief random glimpses of burnt umber antelope amidst thorny acacia; isolated traditional rural villages separated by steep, eroding embankments, and deep valleys, as potent, potential barriers; tidy, fenced, middle-class enclaves, contrasting with inventive abodes of wood, stone, mud and tin, lacking indoor plumbing or sanitation; skittish, skinny dogs, quickly slinking into grass, or asleep on communal thresholds; the sound of bones crunching under foot, the unexpected consequences of less than ideal disposal of harvested bovine heads at a local market and abattoir; the unintended interrupted impromptu afternoon frolic (via our passing curious convoy) of a guy and a girl in a parked car in the middle of a narrow dusty path, within easy sight of a concertina-wired church; ever too full graveyards; groups of unemployed men, lounging in the shade of a liquor store; colorfully clad women on roadsides, carefully balancing packages or laundry atop their bandanna-adorned heads; panoramic vistas of rolling grasslands interspersed thickly with seemingly never-ending, burgeoning communities, under the hot

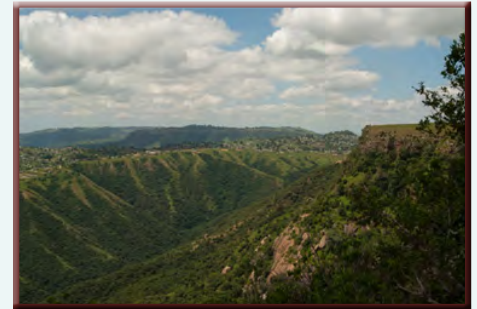


Photo: Jacques Barrat

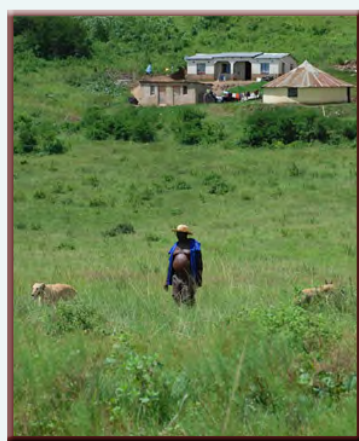


Photo: Dr. Katie Hampson

summer sun; the curious gaze of a lone, lazy cow on the footpath of a bridge; over-loaded minivan taxis, snaking through circuitous dirt roads; smiling, waving, uniformed children, walking home from school; the earthy aroma of fermenting, flattened dung pies; a lively, rotund, bare-footed, straw-hatted farmer, strolling with his slim, hunting greyhounds; the ad hoc appearance of local hillside trash piles of splendor; fattened goats munching everywhere on everything of succulence in sight; well-intentioned development zones, that tourist buses never visit; the occasional right-of-way stand-offs with horned, indifferent livestock; elegantly veiled shoppers barely revealing eyes, hands, and sandaled feet at a modern, midlands mall; the colonial charm versus striking modern architecture of a bustling Pietermaritzburg; the efficiency of design in time-tested historical buildings with entries constructed below ground to partially offset hot ambient temperatures; the necessity of correct points of communication for payment of institutional electrical bills; the utility of properly maintained back-up generators; the benefits of unusual yellow-painted pick-up trucks of the vaccinating teams to offset untoward disappearance; the drawbacks of sunglasses and the best practiced way to NOT restrain a village dog, in the company of others; the acrid perfume of a new incinerator; the lined carcasses in plastic bags awaiting their turn at necropsy; the brilliant apple-green fluorescent neuronal inclusions on a rabies virus positive control microscope slide; a

functional serology laboratory, ready for cells and viruses; an abandoned suite of chicken coops, reborn inventively as a dog research facility; the entrepreneurial spirit towards future design of a practical hand held cooler to better maintain cold chains in the field; the scent of freshly self-mowed lawns, surrounding retro-fitted trailers as effective command headquarters; the enduring role of inventive champions faced with daily frustrations and real-world, socio-economic disparities; snatches of multiple accented conversations in Afrikaans, English, French, or Zulu; a nightly chorus of calling crickets and frogs; the convenience of tasty 'take-away' biltong and the spice of curry; the superior quench of a cold draught as a desirable, fleeting luxury to the aluminum can; the 'can-do' ability of local merchants to seat a diverse, hungry party of 12-plus internationals; the enduring inquisitiveness and endless appetites of graduate students; and the unintended benefits arising via camaraderie of disparate travelers, experiencing a very thin slice of these challenging prevention and control activities in KZN.

Clearly, while one may learn from afar about the technical aspects of ongoing global projects, to appropriately appreciate better situational awareness, one needs a shared opportunity, albeit however fleeting, to personally embrace the sights, tones, smells, tastes, and sensations that others undergo on a daily basis, and attempt to fathom in some small way how best to engage, collaborate, and support the intellectual ideals and material sustainability of such common endeavors by integrated time, talent, or treasure.

Contributed by Dr Charles Rupprecht, Centers for Disease Control, USA.

## Upcoming Conferences

- The International Society for Infectious Diseases - Neglected Tropical Diseases Meeting will take place in Boston on July 8-10, 2011. For updated information, go to [NTD.ISID.org](http://NTD.ISID.org)
- The OIE's "Global conference on rabies control: Towards sustainable prevention at the source" will be held 7-9 September 2011 in Seoul, Korea. Further information is available [here](#).
- The Rabies in the Americas (RITA) 2011 meeting will be from October 16-21 in San Juan, Puerto Rico. A meeting website is coming soon.
- The 15th International Congress on Infectious Diseases (ICID) will be held in Bangkok, Thailand on June 13-16, 2012. Further details are on the [ISID website](#)

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