



# RABID BYTES

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The newsletter of The Global Alliance for Rabies Control

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## EDITORIAL

### World Rabies Day is Special Every Year

There are days for many of us working in the field of rabies prevention, trying to save the lives of people and animals from this deadly disease, when it feels like a never-ending battle. This fight is made even more frustrating when we all know that the tools and knowledge exist to end these deaths once and for all. If only we had more funds, more political commitment, more interest, we could win this battle.

And of course, when World Rabies Day comes around yet again, it may seem like a reminder that we haven't beaten rabies yet.

But the wonderful reality is that we are so close to this goal –over the years this newsletter has showcased many inspirational stories of communities, countries, regions, and global agencies taking action and saving lives. And World Rabies Day is the perfect time to celebrate these successes and encourage others to become part of the movement to eliminate the world's deadliest disease.

This World Rabies Day, we'd encourage you to take a moment to reflect on how far we've all come – with African and Asian governments have welcomed the Rabies Blueprint's Stepwise Approach towards Rabies Elimination (SARE) that will help them take concrete steps towards rabies elimination, training of community educators in countries as far apart as Cambodia and Haiti, a global meeting on rabies organised in December by the FAO, OIE, WHO and GARC – and, of course, all the successful intersectoral projects we've seen in Asia and Africa.

All of this has only been possible because of the untiring efforts of everyone contributing across the world in so many different ways – research, education, awareness, human and animal vaccination, advocacy, and funding. Please share all your wonderful work this World Rabies Day by registering an event. It's the best way of adding your voice to the call for more funds, more political commitment, more interest. We're getting there. Let's End Rabies Together!

*The World Rabies Day team at GARC*

## NEWS FROM GARC AND WRD

### Inspire and be inspired this World Rabies Day

World Rabies Day is in its ninth year and scanning the events that have taken place over the last nine years is inspiring - and this year is no exception. We hope you'll take a moment out to look at the [map](#) and take stock of all the amazing work that is going on.

This year, we've updated the look of the World Rabies Day section to make it easier for those of you who might be accessing the website on smaller screens.

This screenshot of the global map of events registered for 2015 (taken with still more than two weeks to go) shows participation from new countries, including a huge increase in the number of events in Africa.



*Continued on page 2...*

...World Rabies Day continued from page 1.

The diversity and geographical spread of events shows the power of World Rabies Day to unite the rabies prevention community and raise the profile of the disease. If you're yet to register your event, it only takes a couple of minutes and helps us publicise your effort and share your work with the world. You can register here <https://rabiesalliance.org/world-rabies-day/events/report-event>.



We're hoping to see lots of pictures from events too! Remember to comment and share photographs via the comment box on each event's unique page.

You'll need to log in – either via a Disqus account which only takes a minute to create, or using your existing Facebook, Twitter or Google + account. This is important to ensure comments are genuinely about the event.



And if you're in America, your photographs will be entered into the Pan-American World Rabies Day Initiative's photo competition. See <https://rabiesalliance.org/world-rabies-day/events/pawrd2015> for more details.

If you're looking to support World Rabies Day on social media, the hashtag this year is #EndRabies. We're also asking people to update their social media profile pictures to the End Rabies Together logo – shown here. Right click on the picture to save it to your computer and update your profile picture on the day.

We hope you find the events happening for World Rabies Day inspiring. And if you're planning an event yourself, please make sure you register it to help inspire others. Let's End Rabies Together.

## The Beginnings of a New Rabies Epidemiological Bulletin for Africa

Initial data from the country reports submitted to the Pan-African Rabies Control Network (PARACON) meeting in June have been made available on the [PARACON website](http://www.paracon.org) as a precursor to a more detailed online epidemiological bulletin for Sub-Saharan Africa.

Currently data is provided for the 33 countries that participated in the meeting on: whether rabies is a notifiable disease in humans and animals, whether a national strategy exists to control rabies, whether dog vaccination is compulsory, and the number of certified Rabies Educators in the country.

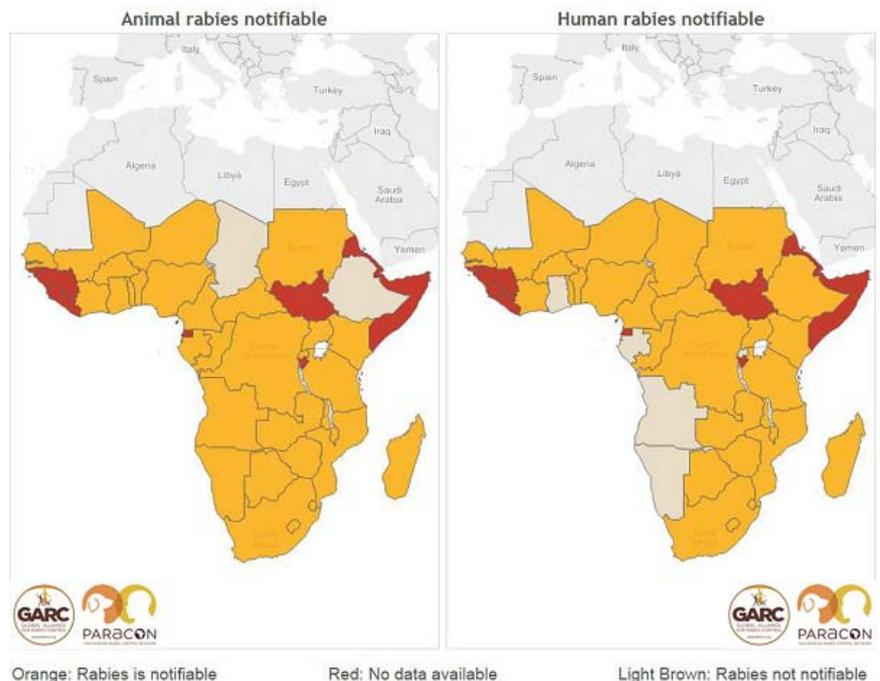
During the meeting, representatives of each country used their country report data to assess their progress towards rabies elimination using the Stepwise Approach towards Rabies Elimination as guidelines.

The results of this exercise are also available in the PARACON website.

These maps are freely available for download on the website and can be used in advocacy campaigns to generate further support for rabies control measures in African countries.

The PARACON website also has an [archive of presentations](#) made at the inaugural June meeting along with the resolutions and further supplementary information for download.

Summarized from the [PARACON bulletin](#) webpages



## ASEAN Rabies Elimination Strategy: Ending Rabies Together by 2020

It is estimated that 608 million people are potentially at risk of rabies in Southeast Asia with seven out of ten ASEAN (Association of Southeast Asia Nations) Member States (AMS) endemically infected with rabies. Cambodia, Indonesia, Lao PDR, Myanmar, the Philippines, Thailand and Vietnam are all rabies endemic, with dogs remaining the most important maintenance host and 96% of documented human cases due to contact with infected dogs.

Three countries, namely Singapore, Brunei and Malaysia, are historically free of rabies. However, just this August, rabies was reported in a dog in the northern part of Malaysia which is close to Thailand and Myanmar. The last rabies case reported in a domestic animal by Malaysia was in 1999. This incident further highlights the transboundary nature of rabies as a disease and the need for a regional approach for disease elimination.

The ASEAN Rabies Elimination Strategy (ARES) provides a strategic framework for the reduction and elimination of rabies in the AMS. It anchors on the “One Health” approach through the use of STOP pillars which are defined as S-Socio cultural; T-Technical; O-Organizational and One Health Framework; P-Policy and Legislative.

The **Socio cultural** pillar focuses on the need to understand the motivations of different stakeholders involved in rabies elimination and developing appropriate messages for communities to protect human health, animal health and animal welfare. The **Technical** pillar highlights the importance of competent human and veterinary services to be able to control rabies in dogs as well as public health interventions to treat humans bitten by a possibly rabid animal. Coordination between

veterinary and human health services are the key in the **Organizational and One Health** pillar, such as in Integrated Bite Case Management wherein both sectors are involved whenever rabies in a dog or a human is reported. The **Policy and Legislative** pillar emphasizes on the importance of national legislation on rabies as well as provision for human and financial resources.

The ARES was jointly endorsed by the 36th ASEAN Ministerial Meeting on Agriculture and Forestry and the 12 ASEAN Health Ministers Meeting respectively held in September 2014. Viet Nam as the lead country for rabies control, through its Ministers of Agriculture and Rural Development and Health, have further expressed confidence that through ARES, cooperation and collaboration between and among Member States and other stakeholders will be strengthened.

Other partners involved in the development and implementation of the strategy include the Food and Agriculture Organization of the United Nations, World Organisation for Animal Health (OIE), World Health Organization, World Animal Protection, and Global Alliance for Rabies Control.

The ARES was designed to complement the existing sub-regional frameworks developed to control and eliminate human rabies, such as those developed by the ASEAN Expert Group on Communicable Diseases (AEGCD) in 2010 and by the WHO South-East Asia Regional Office (SEARO) in 2012. The call to action ‘Towards the Elimination of Rabies in the ASEAN Member States and the Plus Three Countries’ in 2008 was the catalyst for the regional elimination of rabies in ASEAN .

Through an AEGCD-ASWGL joint consultative workshop on 30-31st March 2015 in Chiang Mai, Thailand, the ARES Action Plan was developed to identify and prioritize the regional activities to be able to develop and ARES Operational Plan and mobilize technical and financial support from relevant stakeholders/partners to effectively implement ARES.

As part of the ASEAN World Rabies Day celebration in 2015, copies of the [final version of ARES](#) will be distributed to all ASEAN member states.

Contributed by Sarah Jayme, GARC’s country representative in Philippines, with excerpts from the [ASEAN news story](#), the [ASEAN Rabies Elimination Strategy](#) and Malaysia’s [outbreak notification to OIE](#).



Our People, Our Community, Our Vision  
**MALAYSIA 2015**

*The ASEAN logo for 2015*

## Information and Education at the Borders of Ilocos Norte

Due to GARC’s integrated rabies control project in Ilocos Norte, there have been no new cases of rabies in humans or dogs for more than a year. Now as we move towards declaring freedom from rabies, protecting this area from the reintroduction of rabies becomes a priority.

In collaboration with the provincial government and university partners, three types of materials are being produced for the province to remind bus and van operators and their passengers entering Ilocos Norte to have their dogs vaccinated against rabies.



← First billboards will be set up in three strategic areas: the airport, the Southern land border entrance to the province (municipality of Badoc) and the Northern land border entrance to the province (municipality of Pagudpud).



← Then, stickers will be posted in vans and buses entering the province.



Finally, brochures will be distributed to passengers. The brochure contains basic information on rabies, responsible pet ownership, animal bite management, and the pet owners’ responsibilities under the local Rabies Act and penalties for not complying, and highlights that pet dogs should be vaccinated before traveling to Ilocos Norte.

## GARC’s REC Supports CDC’s Applied Epidemiological Training Program in Cambodia

An Applied Epidemiological Training Plus (for graduates of the earlier AET course) Rabies Workshop was hosted by the US Centres for Disease Control and Prevention (CDC) at their office in Phnom Penh, Cambodia on 13-14th of July 2015. The 12 Khmer-speaking participants worked through GARC’s Rabies Educator Certificate, guided by Mei Castor from the CDC office.



The participants and their trainers in Phnom Penh, Cambodia

All of the AET Plus Rabies Workshop participants worked through the course offline, before submitting the final assessment online. All passed the final assessment and became certified rabies educators that can spread the life saving information regarding rabies prevention within their Khmer speaking communities. The 100% successful pass rate was celebrated with all of the participants receiving framed certificates generated from the GARC rabies education platform website.

## Engaging European Politicians in Rabies

As part of our plans to increase political engagement in Europe, Professor Louis Nel, Executive Director of GARC met with Rob Ffello MP at the UK's House of Commons to discuss concerns that the MP has raised about the rabies threat from illegal dog smuggling in the European Union.

Mr Ffello has been leading a campaign to crack down on illicit dog trafficking and toughen up the EU pet passport (PETS) regime. The Labour MP has accused government ministers of risking a rabies outbreak by failing to tackle a growing cross-border puppy trade in the EU.

Mr Ffello has said, "The UK and EU governments need to work together to end this sickening trade, which allows unscrupulous breeders to profit at the expense of the welfare of the pups involved."

Prof. Nel agreed with Mr Ffello that there shouldn't be any complacency about rabies re-entering the UK and that governments should be vigilant against signs of rabies crossing their borders.

The EU "pet passport" travel scheme last year carried over 170,000 dogs, cats and ferrets to and from the UK. After the UK's Dogs Trust recently raised concerns about relaxations in the scheme, the UK Chief Veterinary Officer had to write to authorities in Lithuania and Hungary to remind them of their duty to ensure that pet passports are completed correctly and that the welfare of dogs intended for sale is safeguarded.

[The Dogs Trust report](#) examined the impact of the 2012 changes to EU regulations which allowed an easier regime for the movement of non-commercial cats, dogs and ferrets across Europe. It included figures from the UK Government indicating a 663% and 780% increase in dogs travelling under the pet passport scheme into the UK from Lithuania and Hungary respectively. The

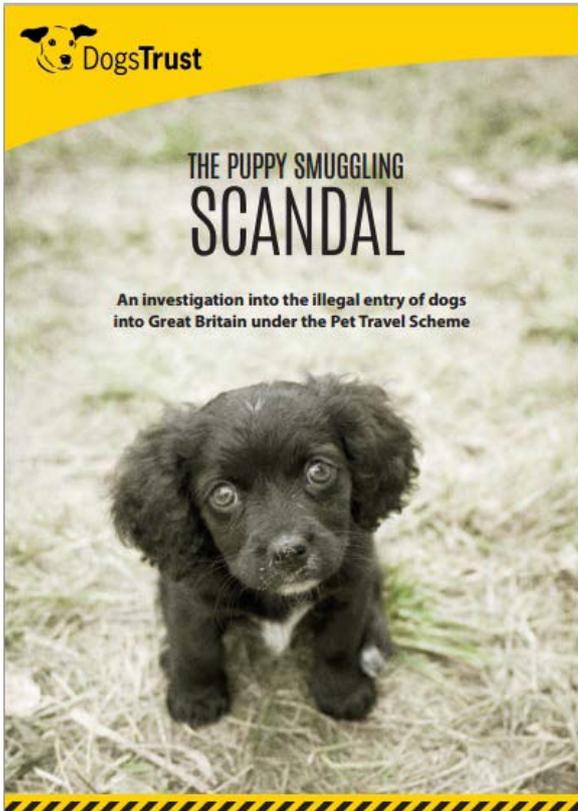
report also warned of "poor compliance" with rabies vaccination, and [recent research by the Norwegian Veterinary Institute in Oslo](#), showed that over half of rescue dogs imported from Eastern Europe into Norway were inadequately vaccinated against rabies, suggesting that rabies is a real concern. A test for successful rabies vaccination used to be carried out a month after "pet passport" micro-chipping and the delivery of a rabies vaccination, but this has now been abandoned. The UK requirement that animals also underwent a six months wait, even after a virus-free blood test, was also ended by the new EU scheme.

Although Britain has been free of rabies since the beginning of the 20th century, with Ireland, Malta, Sweden and Norway also clear of the virus, there are areas of Europe where rabies is still endemic.

Labour MEP Sion Simon recently wrote to the European Commission to ask if it will take measures following evidence that EU legislation was being exploited to illegally import puppies into the UK for commercial purposes, putting the dog population at risk of rabies.

Prof. Nel also spent some time with Lord Alexander Trees at the House of Lords, the only vet with a seat in Parliament in the UK. Lord Trees is Emeritus Professor of Liverpool University and Dean of the Faculty of Veterinary Science. Along with Rob Ffello MP, Lord Trees also offered to help get rabies control and elimination on the political and public policy agenda in the UK and across the EU.

*Contributed by Kevin Doran, a Public Affairs Adviser working for GARC on political engagement in Europe, communications and public relations.*



## NEWS FROM THE COMMUNITY

## Rabies Outbreak in Wild Dogs Raises Warning Flags near South Africa's Kruger National Park

The close proximity of multiple rabies deaths in a local wild dog pack is causing officials to worry about the potential for increased transmission to wildlife that roam South Africa's Kruger National Park, one of the largest wild game reserves in Africa. Multiple dogs from a resident pack denning in the Blue Canyon Conservancy, in a region just outside the greater Kruger area, died after contracting rabies in the middle of August of this year.

Grant Beverley, a wild dog researcher from the Endangered Environmental Trust, discovered the rabies cases after observing five emaciated wild dog puppies walking unsteadily on a road near their den, and became concerned about the possibility of a rabies outbreak. Weakness in an infected animal's hind legs is a common symptom of rabid animals because the virus attacks the central nervous system. A few days later, Beverley also found a deceased female, puppies, and a male, who were all confirmed to have died from rabies after laboratory testing. The same area has seen deaths of jackals and impala from rabies too.



Wild dogs in Kruger National Park. Photo by Bart Swanson, reproduced from Wikimedia under the Creative Commons Act

Kruger Park authorities are not planning to initiate vaccinations of wild dogs living within South Africa's premier wild game reserve, which saw over 1.38 million visitors in 2011. However, the Head of Veterinary Wildlife Services at Kruger, Dr. Marcus Hofmeyr, did express that the potential for the spread of the disease into the park was "worrying." No cases of rabies have ever been recorded in Kruger National Park, but park

officials plan to continue their surveillance efforts, noting that any stray dog or jackal displaying strange behavior would be the most likely source of rabies and should be reported to the park authorities.

No additional sightings of wild dogs have been reported near the Blue Canyon den, and it is expected that the den has died out. Veterinary authorities continue to advocate for vaccination of all domestic dogs throughout South Africa to help ensure protection for other wild animals. "Rabies is not something that only occurs in rural villages or in feral animals. What we need is a ring of protection around our wildlife, a community effort to ensure vaccination, an effort that involves the awareness of everyone. If we don't do something to eradicate rabies from our domestic stock, we can expect to see a repeat of this incident in the future," remarked Beverley.

Submitted by Laura Baker, GARC newsletter contributor, from articles in *The Citizen*, "[Concern over wild dog rabies outbreak](#)" and Lowvelder, "[Rabies outbreak ravages a pack of wild dogs](#)."

## Dr Melvin Abelseth

Dr Melvin Abelseth passed away peacefully on July 11 2015 at the age of 91. Mel received his Doctor of Veterinary Medicine degree from the University of Guelph (Ontario) in Canada and then his PhD in virology from the University of Minnesota in the USA. His work was instrumental to the development of the rabies vaccine derived from the ERA virus strain, widely used as a parenteral vaccine and also the basis for the first experiments with oral vaccination. All modern oral rabies virus vaccines are derived from the original ERA strain. Mel was a rabies expert for the World Health Organization for many years. In 1967 Mel moved with his family from Canada to Albany to become the state veterinarian and director of the rabies lab there. He retired in 1988.

A more person obituary is available [here](#) and friends and colleagues are invited to send a contribution to the charity of their choice or do something wonderful for someone today in his memory.

## Vaccinate All Dogs - Even Young Puppies

A recent research study published in the Veterinary Record shows that puppies younger than 3 months can be effectively vaccinated against rabies in rabies endemic countries. Traditional approaches to mass dog vaccination have usually excluded dogs under 3 months from campaigns due to the potential interference from maternal anti-rabies antibodies still circulating in the puppies' bloodstreams, preventing a full immune response. However, new research suggests that early vaccination of puppies is both safe and effective, providing strong protection against rabies.

The study, lead by Michele Morters of the University of Cambridge, tested antibody levels in 27 puppies ranging from 10 days to 3 months in the African countries of South Africa and Tanzania. Researchers tested puppies 30 days post-vaccination with a high quality cell culture vaccine, and all 27 subjects had antibody levels above 0.5 IU/ml (an amount considered protective against rabies) with a geometric mean level of 20.7 IU/ml in South Africa and no adverse reactions to vaccination were recorded.

An editorial by Dr. Bernadette Abela-Ridder (from the Department of the Control of Neglected Tropical Diseases at WHO) accompanies this article and suggests that these findings could lead to the simplification of vaccination campaigns and an improvement in their effectiveness. The average lifespan of dogs in rabies endemic zones is 3 years or less, and puppies often comprise a significant proportion of community dogs in rural areas (up to 39% in some cases). As a consequence, not vaccinating these puppies can significantly reduce the vaccination coverage of the dog population, and individual puppies may not be vaccinated at all in their lifetime. Field experience shows that the incidence of rabies can be higher in dogs under 12 months, and because puppies are more likely to bite than older dogs, this can lead to an increase of rabies transmission when vaccination of puppies is not completed.

The simpler rule of vaccinating all dogs, including the youngest puppies, therefore, could have a significant impact on rabies transmission rates and the effectiveness of rabies control campaigns.

Summarised by Louise Taylor from Morters et al. [Effective vaccination against rabies in puppies in rabies endemic regions](#) and Abela-Ridder et al. [Rabies: 100 per cent fatal, 100 per cent preventable](#), both in the August 8th issue of the Veterinary Record



Photo: FAO ECTAD Indonesia



## Recent Research, September 2015

### Surveillance

[Reconciling surveillance systems with limited resources: an evaluation of passive surveillance for rabies in an endemic setting.](#) Many countries do not have the resources to establish active surveillance systems for rabies. A scenario tree model based on data collected via questionnaires and interviews suggests that the sensitivity of passive surveillance can be 100% even at a low disease prevalence (0.1%) given a large enough sample size, in this case the entire population of Colombo City.

[Epidemiological characteristics of human rabies in Henan province in China from 2005 to](#)

[2013.](#) A total of 1022 rabies cases were reported from 2005 to 2013, with incidence remaining high after a 2007 peak. Most cases were males, often ages 40-65 and farmers. The wound treatment rate (12.2 %) and vaccination rate (2.6 %) of rabies cases after exposure were relatively low, while the rabies immunoglobulin utilization rate was only 2.8 %.

### Human Cases and treatment

[Human rabies in Zhejiang Province, China.](#) 201 cases of human rabies were diagnosed in Zhejiang Province between 2007 and 2014, with annual incidence declining gradually. Male farmers and rural laborers were the groups most affected, almost always via dog bites. Less than half of cases (41.4%) sought wound treatment after exposure, and only 9.7% received PEP

[Local infiltration of rabies immunoglobulins without systemic intramuscular administration: An alternative cost effective approach for passive immunization against rabies.](#) Current PEP recommendations demand large quantities of expensive RIG. This study restricted its use to local infiltration alone and avoided systemic intramuscular administration. A total of 269 category III patients bitten by suspect or confirmed rabid dogs/ animals were infiltrated with equine RIG in and around the wound (quantity was proportionate to the size and number of wounds irrespective of body weight). This was followed by regular intradermal rabies vaccination. On average 1.26ml of RIGs was required per patient, costing Rs.150

Continued on page 8...

...**Recent Research** continued from page 7.

(\$3), and in total 42 vials (5ml) of RIG were required compared to the 363 required using current recommendations. All the patients were followed for 9 months and were healthy and normal at the end of the observation period. The results should be confirmed with larger scale trials in other centers.

[Evaluation of short-interfering RNAs treatment in experimental rabies due to wild-type virus](#). Treating mice with short-interfering RNAs targeting the nucleoprotein gene and also the brain immune response produced a reduction in the severity of the disease, but no impact on death rates. The study suggests that the use of pre-designed siRNA alone may not be useful in rabies treatment.

### Education and Advocacy

[Integrated health messaging for multiple neglected zoonoses: Approaches, challenges and opportunities in Morocco](#). A health messaging intervention, using powerpoint presentations for five zoonotic diseases including rabies was assessed. It identified ways to improve public awareness, such as by using local pictures, conducting education in school settings, and piggy-backing on high-priority diseases like rabies. However it also found that information “overload” easily occurred when disease transmission pathways did not overlap.

[Knowledge, attitudes and practices towards rabies: questionnaire survey in rural household heads of Gondar Zuria District, Ethiopia](#). A KAP survey showed that a over 99% of people were aware of rabies, most thought it was fatal and most identified bites of dogs as the route of transmission. However, despite this, less than half of respondents mentioned the need for immediate treatment, or considered modern medicine as appropriate treatment. Only 30.7 % practiced washing of the wounds with water as first aid.

### Wildlife Rabies

[Spatio-temporal Use of Oral Rabies Vaccines in Fox Rabies Elimination Programmes in Europe](#). In Europe, the elimination of wildlife rabies using oral rabies vaccination of foxes for over 30 years has been a success, but with more than 10 different vaccines used in combination with varied distribution strategies.

[Recognizing the Role of Skunks in Human and Animal Rabies Exposures in the Southwest](#). A “One Health” approach, uses surveillance data to show that even though most of the positive animals collected were bats, human and domestic animal exposures were primarily a result of interactions with rabid skunks. Wildlife and domestic animal and human exposures are associated and informative to one another.

[Fluorescent antibody test, quantitative PCR pattern and clinical aspects of rabies virus strains isolated from main reservoirs in Brazil](#). RABV variants isolated from dog, vampire bat, crab eating fox, marmoset, and Myotis bat hosts were evaluated for replication rates and clinical infection in mice. spp. Virus replication was not correlated with clinical signs and evolution, but isolates from crab eating fox and marmoset had a longer evolution period and higher survival rates.

## Upcoming Conferences



**26th International Conference on Rabies in the Americas (RITA)** will be held from October 4th - 8th, 2015 at Fort Collins, Colorado in the USA. For more details and to register go to [www.RITAconference.org](http://www.RITAconference.org).

Rabies in the Americas  
Fort Collins, Colorado

**3rd GRF One Health Summit 2015:** Fostering interdisciplinary collaboration for global public and animal health will be held from 4th to 6th October 2015 in Davos, Switzerland. More details at [onehealth.grforum.org](http://onehealth.grforum.org)

**The 14th International Symposium of Veterinary Epidemiology and Economics**, entitled “Veterinary Epidemiology and Economics: Planning Our Future” will be held 3-7th November 2015, in Merida, MEXICO. Abstracts are now being accepted. Further details at: [isvee2015.org](http://isvee2015.org)

**The 5th International Conference on Rabies in Asia (RIACON)** : Rabies Free Asia: Possibility and Challenges will be held in Dhaka Bangladesh on Nov 6th and 7th, 2015. To register go to [www.riacon15.info](http://www.riacon15.info)

**The 6th Northern European Conference on Travel Medicine (NECTM6)** will be held in London, 1-4 June 2016. For more details go to [their website](#).

The editor of the Alliance newsletter is Louise Taylor. If you have news items or information of interest to those working to defeat rabies, please contact her at [louise.taylor@rabiescontrol.net](mailto:louise.taylor@rabiescontrol.net). For further information on the Alliance's work see [www.rabiesalliance.org](http://www.rabiesalliance.org).