



RABID BYTES

The newsletter of The Global Alliance for Rabies Control

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EDITORIAL

As illustrated by this newsletter, the first quarter of 2013 has been a busy time for GARC staff and the rabies field. Now in northern latitudes, Spring is in full swing, and both bats and mammalian carnivores are on the move, increasing risks of exposure to people, their pets, and livestock, after a long winter break. Opportunities for advocacy, education, and prevention abound. For example, the recent report of another case of human rabies acquisition in the USA by organ transplant illustrates the ongoing need for increased vigilance even in unusual settings. At several points another series of tragic escalating events could have been prevented. If the donor had been aware of how rabies virus is transmitted by wildlife, exposure may have been avoided. If he had recognized the benefits of seeking immediate medical attention after exposure, prophylaxis could have prevented illness. Even after illness onset, friends or family members may have told the medical team of his frequent wildlife encounters through hunting, or his medical team could have requested prompt antemortem diagnostic testing, if his syndrome was correctly identified as an acute progressive viral encephalitis. Better guidelines on transplant organ use in the USA have now been developed, but were not in place at the time these transplants were carried out.

How often unrecorded rabies virus transmission by tissue or organ transplantation may have occurred historically, or will present in the future, is unclear. Clearly, transplantation is an immediate, critical life saving event, with a very short event horizon for success. Although some prevalent human communicable infectious agents should always be screened in advance, such as HIV, it is not realistic to think that all dangerous pathogens, such as less common agents like rabies, will be candidates in the near future. Professionals often forget that rabies is a basic disease of nature. Rabies is not rare. Every day, in the developing world, hundreds of humans die of rabies. The majority will be recognized, especially after a history of suspect animal bite and the onset of a compatible illness. However, some will not, either because of the basic ignorance of the disease and its transmission, the inability to appreciate the event, or the lack of concern.

Any prospective organ donor, infected with any zoonotic disease, such as rabies could have died of the infection during the early prodrome phase, or succumb to another cause (such as trauma from motor vehicles) and still be infectious, with or without clinical signs. The organs themselves will be a source of the pathogen, as well as the surgical contamination of the recipient during transplant. Organ transplants from both deceased and live donors are increasing in rabies endemic countries such as India, Pakistan and China, for both national and international recipients (so called transplant tourism). Obviously, rabies education needs to be improved for the public and professionals alike. The risk of transplantation transmission, which will remain very low can be reduced through enhanced post-mortem diagnostics, or avoiding the use of organs from patients who died of progressive encephalitis. This will be cost-effective considering the patients, health care workers, families, and other contacts that may be exposed to a highly virulent, yet potentially preventable, fatal outcome. Finally, recommendations should be made more widely available urging caution in the use of organ donors who present with an encephalitis.

Charles Rupprecht, Director of Research, GARC

NEWS FROM GARC AND WRD

World Rabies Day 2013



World Rabies Day is in its seventh year, and we wanted to update you on our plans to support your events on September 28th. World Rabies Day 2012 was a big success, with over 700 activities organised in at least 107 countries across the world, many of them by committed volunteers in areas with few resources. Over 125,000 of you took part in these events, which included raising awareness, vaccinating animals and discussing current rabies. The theme for 2012 was *getting the message out about rabies prevention*, and it was taken

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Announcing financial support award for a student to attend RITA

GARC is pleased to announce that we are now accepting applications from students for financial support to attend the 24th annual Rabies in the Americas (RITA) meeting. The winner will also have an opportunity to present their work at the meeting.

The RITA meeting brings together individuals working in rabies-related fields, including research, rabies control programmes, laboratories, public health and wildlife biology. For further details on RITA, please visit <http://www.rabiesintheamericas.org>.

Battelle Biomedical Research Center has provided an award to support 1 week of travel-related costs (including conference registration, accommodation and flights) for a student from Africa or Asia to attend the next RITA meeting. This year, the meeting will be held in Toronto, Canada, in the last week of October.

Eligibility:

- Applicant must be from a country in Asia or Africa
- Applicant must be enrolled in a post-graduate or PhD programme in a recognised university in their home country
- The programme must be related to rabies, and includes, but is not limited, to disciplines such as public health, veterinary science, medicine, biotechnology, health economics and community development.

If you would like to apply for this award, please submit the following -

- A 1-page letter of intent, stating how this award will benefit your career
- A letter of recommendation from your university supervisor
- A 2-page (maximum) CV/bio
- Abstract of 400 words or less (for oral or poster presentation)

The deadline for submissions is July 12th, 2013.

Please send your application and any queries to info@worldrabiesday.org.

... **WRD 2013** continued from page 1.

into schools, communities and universities.

This year's theme is *Rabies: understand it to defeat it*, and we encourage everyone to learn more about the issues around rabies and get involved to do something about it. In the coming weeks we'll be merging the current World Rabies Day website with the Global Alliance for Rabies Control website to create www.rabiesalliance.org. This new website will give you an improved platform with more features to share your events and get resources and logos for your work.

You'll be able to publicise forthcoming events in your area, attracting a greater audience. And once your event has been completed, you'll be able to upload photos and share information. You'll even be able to download certificates for event organisers.

The resource library has awareness and educational materials for different audiences, including teachers, veterinarians, doctors, pet owners and community workers. These are for you to use and free of charge. Please feel free to download them. We also have World Rabies Day logos in many languages and, if you can't find your own, we can work with you to create new logos. Also, if you have materials of your own that you'd like to share for others to use, we'd be happy to host them on our website.

Finally, if you're looking for help with your media and supporter outreach, we're creating toolkits that you can modify to increase interest in your World Rabies Day events. We're also building a photobank of images with copyright permission to use straight away with the media.

Following feedback from webinar participants, we have decided to run smaller webinars throughout the year around different themes rather than run a big webinar near World Rabies Day. In this way we hope to encourage more participation and cover the subjects in greater detail.

By giving us a 'like' on [Facebook](https://www.facebook.com/worldrabiesday) and following us on [Twitter](https://twitter.com/worldrabiesday) you keep up to date with the latest news, particularly as we expand on our plans in the run-up to World Rabies Day. This is also an easy and practical step you can take to help spread awareness to other people about rabies prevention. So, please stay in touch! We look forward to hearing more about your plans for World Rabies Day, and hope to work together with you to make World Rabies Day bigger than ever.

Contributed by Deepashree Balaram, on behalf of the WRD team. You can contact the WRD team through the [website](http://www.rabiesalliance.org), or at info@worldrabiesday.org.

GARC Attends SEARG Conference, Tanzania

The Southern and Eastern African Rabies Group (SEARG) conference took place from 12th-14th February 2013 outside Dar es Salaam in Tanzania. Dr. Charles Rupprecht, Dr. Lea Knopf and Jane Coutts represented the Global Alliance for Rabies Control. The Tanzanian Government, WHO, Bill and Melinda Gates Foundation and FAO were also represented at the three-day event.

The SEARG network includes countries in southern and eastern Africa, but Dr. Louis Nel of the SEARG committee called for an integrated, continent-wide approach to rabies prevention and control. He proposed a pan-African rabies conference in South Africa for 2015.

The conference was opened by the Tanzanian Deputy Minister for Livestock and Fisheries, who emphasised shared ownership of rabies prevention at the scientific, country and community levels as the key to sustainability. He asked scientists to develop a common language to engage with policy makers and communities, suggesting that “exclusive language” risks “communication failure”.

“You need to read the minds of the people, so they can understand it and use it to transform their environment,” he said.

Anastasia Pantelias of the Bill and Melinda Gates Foundation, currently funding two major African rabies elimination projects in Tanzania and South Africa, noted this was the first time the Foundation had invested in rabies prevention. She emphasised the funding was catalytic, aimed at establishing evidence for sustainable, transformational change.

The foundation is also providing support for a sub-regional vaccine bank in Africa, which aims to serve as a stimulus for in-country, government commitment to sustainable management of rabies. She noted that the *Rabies Blueprint* and *Progressive Control Pathways* have provided examples of tools for effective rabies control, and that political will and “on the ground” efforts are now the key to making them work.

Each country in the SEARG network presented a report on the national rabies situation and progress since the last meeting. These talks were supplemented by in-country project and study updates, as well as community surveys and dog population studies highlighting some of the issues facing community-level initiatives.

The final day involved a workshop co-organised by FAO and GARC. The aim was to take one stage further the concept of a *Progressive Control Pathway towards Rabies Elimination* (PCP). This tool was originally developed by FAO to help countries establish a step-by-step approach to Foot and Mouth disease control by assessing ways of reducing the risks. The PCP could be a valuable planning and partnership tool for rabies elimination, as it provides a framework for measuring a country’s or region’s progress towards eliminating the disease. During the workshop, delegates were introduced to the basic framework, and discussed how the PCP concept could work in their own country.

In summary, the SEARG conference recognised the need for more government commitment, improved surveillance and more comprehensive information flow, underpinned by mechanisms for retrieving and analysing data from the local level, where rabies is experienced first-hand.

Contributed by Jane Coutts on behalf of the GARC team that attended the conference. More information on SEARG and the conference can be found on the network’s website at <http://www.searg.info/doku.php>



You Have Made our Day

Jane Coutts provides a personal story about the up and downs of organizing WRD outreach in Africa.

Last September, as World Rabies Day drew ever closer, and the WRD team was receiving more and more emails, we were doing our best to make sure everyone had the information they needed. Then, amidst the frenzy, I received an email that reminded me it was all worth while. It said, “You have made my day.”

GARC had received some funding to help people in African countries print posters for their WRD campaign. It was not very much funding initially, but we knew there was a chance we could attract more in years to come. It had not been an easy planning process, given the size and diversity of the African continent, and we were forced to reduce our help to a relatively small number of partners in a few countries. In some countries, there was more than one applicant, and we knew we needed to spread the resources as far as possible.

The email came from Lesotho, where there were two applicants. One was Dr. Tabitha Seiso at the Department of Agriculture, who organised rabies awareness campaigns on WRD but had difficulty accessing printed posters. The other was Mr. Bereng, who runs a community group in a remote part of the country, and participates in the [International Dog Bite Prevention Challenge](#). Last year his team managed to educate 15,000 children about the dangers of dog bites, how to prevent them and how to treat animals with



A boy holds a WRD rabies awareness poster in rural Lesotho. Photo: L. Bereng.

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GARC STRENGTHENS PARTNERSHIP WITH OIE AND DA-BAI

Amidst increasing regional efforts and the ongoing development of a strategy to eliminate canine-mediated human rabies in Southeast Asia by 2020, the Global Alliance for Rabies Control (GARC) strengthened its longstanding and successful collaboration with the Philippines Department of Agriculture-Bureau of Animal Industry (DA-BAI) and the Sub-Regional Representation for Southeast Asia of the World Organization for Animal Health (OIE SRR) with the signing of an Agreement on February 22, 2013 at the Philippine International Convention Center (PICC). The Agreement improves technical cooperation between partners and enables all of the organizations to work together to improve rabies prevention activities in the Philippines.



Pictured at the signing are Dr Mary Elizabeth Miranda, Director of Asian Region for GARC; Dr. Ronel Abila, OIE Sub-regional Representative; and Dr. Rubina Cresencio, DA-BAI Director (seated left to right). Also in attendance were Dr. Nilo Resontoc, DA-BAI National Rabies Coordinator; Dr. Emelinda Lopez, OIC of the DA-BAI Animal Health Division; and Dr. Danilo Ventura, Jr., President of the Philippine Veterinary Medical Association and Philippine Representative of the World Society for the Protection of Animals (standing left to right).

The Agreement specifies that the Veterinary Services of the Republic of the Philippines, through the DA-BAI, will spearhead the coordination and implementation of mass dog vaccination campaigns and other activities under the National Rabies Prevention and Control Program (NRPCP). Together with GARC, they will continue to promote

the use and implementation of OIE international standards on high-quality rabies vaccines, dog rabies control, and stray dog population control when developing and refining regional or national rabies programs.

The OIE will support the Veterinary Services of the Republic of the Philippines in the implementation of the NRPCP by providing injectable dog rabies vaccines through the OIE Regional Rabies Vaccine Bank for Asia funded by the European Union (EU) depending on availability and taking into consideration the 'Eligibility Criteria for use of the OIE Rabies Vaccine Bank for Asia (Injectable vaccines)', and other possible support mechanisms through the Stop Transboundary Animal Diseases and Zoonoses (STANDZ) Small Grant Facility funded by the Australian Agency for International Development (AusAID).

GARC will provide technical support in the implementation of dog vaccination campaigns and other relevant activities in GARC-pilot provinces in close collaboration with the Veterinary Services of the Republic of the Philippines and provide written reports on the use of the vaccines received under this Agreement to the Veterinary Services of the Republic of the Philippines. In turn, the Veterinary Services of the Republic of the Philippines will collect all dog vaccinations reports and submit them to the OIE on a quarterly basis.

Prior to this newly signed Agreement, GARC and OIE initiated a joint-partnership in 2011 with a mutual Letter of Exchange. This was followed by the establishment of a regional rabies vaccine bank with injectable rabies vaccine for dogs for countries in Asia in need initiated by OIE in 2012. Similarly, GARC has been an established partner of the DA-BAI in local, provincial, and national rabies control program planning and implementation.

Contributed by Dane Medina, Communications Officer GARC

...Africa Posters *continued from page 3.*

respect and responsibility. However, he has difficulty accessing not only posters, but rabies education and resources in general. I tentatively asked Dr. Seeiso if she would be prepared to deliver posters and help to the community group. She said she would be delighted.

Many of the posters were printed in a batch in South Africa and sent out to Lesotho and other countries. Just as the posters were despatched, a major truck-drivers' strike in South Africa stopped all transport of goods and delayed deliveries. The posters somehow reached the South Africa-Lesotho border, and Dr. Seeiso drove to the border to pick her posters up. Everyone was so resourceful. She then arranged for her department to take posters and outreach to Mr. Bereng's group in the remoter part of the country, where children and other members of the community took part in the WRD awareness drive.

This year, I again approached the two groups, and asked whether they needed materials. I suggested the community group contact the Department of Agriculture and ask if they would be prepared to help again. "No need," came the response. The department had already offered to help and share the resources again.

Other groups in countries such as Cameroon and Kenya are also sharing resources, some across departments in a One Health capacity, and some between groups. Thank you all for helping GARC to make our resources go as far as possible by collaborating. So thank you Dr. Seeiso and Mr. Bereng: you have made *our* day.

NEWS FROM THE COMMUNITY

The Tragedy of Rabies

Dr Abdus Salam Khan, FACP, Director of the Emergency Department, Shifa International Hospital, Islamabad in Pakistan shares his perspective.

As emergency room physicians we come across patients who are faced with death and need our help to fight this battle. Most of them are success stories, but when I see a patient with rabies, I know that we have lost the battle without even trying anything.

I recently had sleepless nights over one particular case. A 28 year old lady with a two year old child was chased by a stray dog and ultimately the dog bit the child on the face. She was taken to a local doctor in her remote city, and the doctor instructed them to go to the big city hospital for the vaccination and the immunoglobins. She came to the city hospital with her family and she was vaccinated, but without immunoglobins. Fast forward 18 days and she presented at our emergency department with signs of rabies. Now it is irreversible. Nothing can be done. How do you tell a two year old? Can we comfort them that it is OK?. How do we tell the mother to see her child for the last moments, and then it will be over for her? This case is especially tragic in that the patient and the family came to the hospital on time and the medical community failed them. I am speechless and ashamed.

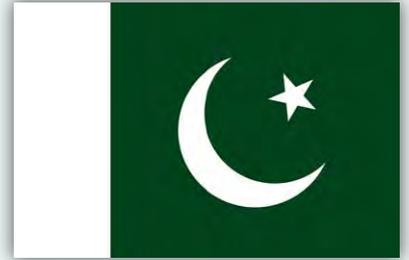
Although rabies and its devastation have been known for a long time, we are still not able to lessen its impact in my part of the world. We see patients showing the signs of rabies, and we cannot offer them anything. They eventually die in their home or other places.

We have failed as a medical community to address this disease in a meaningful way. Although we do education campaigns and celebrate World Rabies Day, using print media and electronic media, we have not yet been able to put a significant dent in the incidence of Rabies. Our emergency responder physicians sometimes don't know the latest guidelines and treat based upon their own understanding, which may result in a bad outcome.

Efforts are needed to educate the public regarding vaccination of their pets and the treatment of bite wounds. Government-run facilities see the majority of dog bite cases, but because of the lack of policy, resources and most important of all lack of emergency medicine training, this results in a less than optimal level of care. Private institutions also serve these roles and do a relatively better job, but their care is mostly out of the reach of common people due to the costs.

Being a member of the emergency medicine community and also involved in training of physicians, I am sure that persistent effort will ultimately improve care. I use my blog to propagate this educational aspect at www.emergencymedicineforum.org. I am working on forming a group to offer educational support along with logistic help to people with dog bites. We can start a rabies registry and update it on the net so that we can calculate the burden of disease in a more accurate way. I would also like to start a 24 hour active hotline to generate information and create awareness to act in the responsible way against dog bites and rabies.

Rabies control is a team effort and requires input from all stakeholders, but in the case of Pakistan unfortunately it has been neglected by too many.



Rising Rabies Infections Cause Livestock Losses in Namibia



Namibian Cattle farm, Photo: Brian J. McMorrow

Namibia's chief veterinarian officer, Dr. Emmanuel Hikufe, reported that rabies infections in human and farm animals are growing every year resulting in a livestock loss valued at N\$13million (approximately US\$1.45million) over a four year period beginning in 2008. A significant number of Namibian dogs are infected with rabies and are transmitting the disease at a high rate to cattle and to game animals, resulting in a large loss of income for farmers. To combat the rise of rabies, Hikufe called for a more aggressive national rabies control strategy, including the establishment of a public awareness campaign about the disease, a stricter stray dog control policy and an increased budget for canine vaccinations. Hikufe's findings were presented at the Field Epidemiology and Laboratory Training Programme (FELTP) workshop held in Namibia's capital Swakopmund in mid-February.

Summarized by Laura Baker, a GARC volunteer, from the [AllAfrica article](#) posted on February 18, 2013.

Rabies Transmitted by Organ Transplant

In March 2013, an army veteran in Maryland, USA, died of a rabies infection usually associated with raccoons. With no known exposure to animals, suspicion fell on a kidney transplant carried out almost 18 months previously, and stored samples were able to confirm rabies infection in the donor. This unusual situation has happened only twice before in the USA, in 1997 as the result of a corneal transplant and in 2004, when 3 recipients of organs died of rabies (and a fourth died too soon after the transplant for rabies to be suspected).



In the most recent case, the organ donor was a 20-year-old Air Force recruit. His symptoms were thought to be caused by a food-borne toxin, ciguatera, carried by saltwater fish, and the cause of death was recorded as encephalitis of unknown origin. Tests for HIV, hepatitis and some other diseases are carried out routinely on potential organ donors, but this donor was not tested for rabies, a rare cause of death not routinely considered. A rabies test after a death can take four hours once the sample reaches the lab, but kidneys remain viable for less than 24 hours after the donor dies, and other organs less than 6 hours. Doctors must weight the risk of possible infection with the risk of the patient not receiving the transplant.

Organs from the same donor went to recipients in Florida, Georgia and Illinois as well as the recipient in Maryland who died. Immediate rabies post exposure prophylaxis (PEP) was administered to these other recipients (who had shown no symptoms of rabies), and after 5 doses of vaccine, these people are now considered out of danger. A further 36 people who had close contact with the recipients or donor also have been urged to seek PEP.

The Centers for Disease Control and Prevention is looking into why this case was so different from the situation in 2004, when all recipients of donated organs died of a bat-associated rabies infection within seven weeks. The virus strain, the amount of virus present in the donated organs, the recipient's genetic predisposition or treatments may have influenced the outcome.

The case raises questions about the use of organs from people who die of poorly defined disorders. Updated guidelines on the use of organs have been developed since, and urge caution when considering donors with encephalitis, and "extreme caution" when the encephalitis appears to be from a virus. However, these guidelines were not in place at the time of the transplants in 2011.

Summarised by Louise Taylor from reports in the [New York Times](#), [NBC news](#), [Huffington Post](#), [USA Today](#), and [Washington Post](#).

Dr. Hilary Koprowski Dies



Dr. Hilary Koprowski, a pioneering virologist, died after a short illness on April 11th at his home in Philadelphia, aged 96.

Dr. Christopher Koprowski said that his father was a talented musician, with degrees in music and medicine from Poland. As a penniless immigrant in Rio de Janeiro, he made money teaching piano. He began working in a laboratory in Rio and eventually moving to the United States where his work became of international significance.

Together with fellow researchers Jonas Salk and Albert Sabin, Dr. Koprowski's 1950 clinical trial with a live-virus oral vaccine was the first to show that it was possible to vaccinate against polio. Thanks in part to his work, polio is now almost eradicated.

Dr. Koprowski was the Director of The Wistar Institute in Philadelphia from 1957 to 1991, and over his distinguished career contributed to more than 875 scientific papers and gained many distinguished honors and degrees. Under his leadership, the Wistar Institute developed a rubella vaccine that helped eliminate the disease in much of the world, and pioneered the development of monoclonal antibodies, now used to diagnose rabies, and to detect cancer antigens, and in cancer immunotherapy.

Dr. Koprowski made significant contributions to rabies prevention and control, developing the first human diploid cell rabies vaccine, based on tissue culture, which was more effective and safer than the traditional Pasteur technique, and the first recombinant rabies vaccine for animals.

Dr. Charles Rupprecht, Director of Research for GARC, worked at the Wistar Institute under Dr. Koprowski, and will host a tribute to him at the Rabies in the Americas conference in Canada during October; "Hilary was a true Renaissance man, and his wisdom and guidance will be sorely missed personally and professionally in the rabies field, especially when such leadership is in high demand but short supply."

Contributed by Louise Taylor and Charles Rupprecht based on a news report in the [Huffington Post](#), and [Dr. Koprowski's](#) and the [Wistar Institute's website](#).

The Bali Rabies Outbreak

A summary of the recent outbreak of Rabies on Bali in Indonesia has been published, showing the scale of the problem and offering lessons about the management of such emergencies.

Bali was historically rabies-free, but in 2008 rabies was detected on a peninsula on the South of the island, probably introduced by infected dogs travelling on fishermen's boats. At this point the island had no policies for rabies PEP and no dog bite surveillance, rabies diagnostic facilities, or vaccines for dogs. Despite culling efforts and vaccination attempts in 2008-9, the infection spread across the whole island. More than 130 people died and more than 130,000 were given post-exposure treatment for dog bites with control efforts costing over \$17million.

Early vaccination attempts by the government were hampered by the difficulty in handling the free-roaming dog population, covering only 40% of the dog population initially, and only 25% with a necessary booster 3 months later. Panic led to demand for emergency culling of dogs in some areas, but many communities objected. Dog culling may have even helped to spread rabies as vaccinated dogs were culled, new puppies replaced those culled and there was evidence of dog movement to avoid culls.

Consequently, these measures failed to contain the infection, but surveillance efforts set up with the help of the Australian government provided critical data to track the infection spread.

In 2009 the Australian government donated longer lasting vaccines and a local NGO, the Bali Animal Welfare Association (BAWA) with the support of the World Society for the Protection of Animals (WSPA) stepped up to implement mass vaccination campaigns. Better dog catching techniques allowed them to reach the necessary 70% vaccination coverage almost everywhere they vaccinated.

From Oct 2010 to April 2011, an island-wide mass vaccination campaign was completed by the government, BAWA and WSPA and from May to December 2011 a second was implemented by the government with the support of FAO. These finally brought the epidemic under control. The monthly number of confirmed dog rabies cases fell from 44.7 before mass vaccination to 10.8 during the first mass vaccination campaign, to 6.0 during the second mass vaccination campaign. The number of dogs culled fell from >108,000 to 40,000 to 14,000 over the same timeframes, but long term dog population management in Bali remains uncertain. Monthly human rabies deaths fell from 4.3 and 4.8 to 1.1 respectively. By December 2011, all but 30 villages (4.1%) were considered rabies free, with no new dog cases in 6 months. Although rabies incidence has been substantially reduced, the article urges that vaccination must continue until rabies is eliminated from the dog population.

A recent [new report](#) states that it has been almost one year since the last reported human rabies death. There are hopes that Bali will again be declared rabies free, a target set for by 2015, but this will require two consecutive years without a single occurrence of rabies in either animals or humans. Currently 2% of dog bites are reported to be from rabid dogs. Stage four of the government's free mass dog vaccination for the all 300,000 dogs in Bali will start mid-April and run until June this year. However, residents are expected to bring their dogs for vaccination, and there are concerns that attitudes towards responsible pet ownership have not improved significantly.

Summarised by Louise Taylor from an article by [Putra et al. in Emerging Infectious Diseases](#), April 2013 and a [Jakarta Post article](#) from March 28th 2013.



A Balinese girl holds her puppy, and a vaccinated and collared dog sits behind. Photo Katie Hampson.

Upcoming Conferences

5th International Symposium on Non-Surgical Contraceptive Methods of Pet Population Control will be held June 20-22, 2013 in Portland, Oregon, U.S. See www.acc-d.org/5thSymposium

"Science in the Service of Animal Welfare: Priorities around the world". This is a symposium of the UFAW International Animal Welfare Science Society and will be held at the Universitat Autònoma de Barcelona, Barcelona, Spain 4-5th July 2013. See www.ufaw.org.uk/conf.html

The 24th Rabies in the Americas (RITA) meeting will be held October 27-31, in Canada. Further details will be posted when available.

2nd GRF One Health Summit 2013, entitled "One Health - One Planet - One Future: Risks and Opportunities" will be held 17 - 20 November 2013 in Davos, Switzerland. See onehealth.grforum.org/

The International Society for Infectious Diseases has announced that the next International Congress on Infectious Diseases will be held in Cape Town, South Africa from the 2nd to the 5th of April 2014. Sign up for the 16th ICID mailing list at <http://www.isid.org/icid/>

The editor of the Alliance newsletter is Louise Taylor and the layout and typesetting is by Pete Else. If you have news items about rabies, please contact Louise at louise.taylor@rabiesalliance.org. For further information on the Alliance's work see www.rabiesalliance.org