



# RABID BYTES

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The newsletter of The Global Alliance for Rabies Control

## EDITORIAL

This newsletter will share encouraging news from the rabies community, news from field projects and success stories from countries' efforts in the fight against rabies. Additionally we have summarized some new publications for you which highlight aspects of rabies control which are not necessarily making the headlines.

While meeting rabies activists or government officials around the world I frequently hear two statements on rabies prevention and control "We already have the crucial tools" and "Having human and animal rabies vaccines available is not enough". These two statements highlight the sad paradox that despite good scientific and technical knowledge on rabies, this disease is still killing too many people and animals in the world. On one hand we have good vaccines and diagnostic laboratory tests; on the other hand there is the challenge of translating this knowledge into practice and adapting these useful tools for different settings. Working together for successful rabies control requires a broad approach [involving many different actors and targeting a variety of audiences](#). Easier said than done!

Often there is a lack of coordination and communication between those designing new tools, those deciding which tools are best to use, those purchasing the tools, those applying the tools and the end beneficiaries of the tools. These audiences all have different priorities and may use a different language, which can help to explain the almost contradictory statements above.

Along these lines I would like to share with you a superficial internet-based analysis of attention given to rabies by different audiences. Let's look at the number of Google citations (number of results returned when searching for rabies) as an indicator of resources aimed at the general public and the number of scientific publication from standard scientific databases as an indicator of scientific interest, over a 10 year period. There are around 3 million Google citations on rabies compared to about 3,500 scientific publications on or including rabies – positively surprising for a neglected disease like rabies.

Of course there are communicable diseases that are more prominent in both the general public media and in scientific outputs, such as malaria (11 million/ 30,000 for the indicators above) and tuberculosis (11 million / 50, 000). Malaria and tuberculosis occur in a similar range of countries to rabies, but have received much more international attention through the establishment of [the Global Fund](#) in 2002. However, back to rabies, it is interesting to observe a significant rise, almost a doubling, in Google citations in the years 2007 and 2008, probably due to the first and second World Rabies Day campaign reaching out to the general public across the world. In contrast, internet citations for malaria and tuberculosis, and scientific publications on rabies showed no major peaks in these years or in any other years

The visible indicators of interest from the two audiences seem to be driven by different mechanisms which would merit a more in-depth analysis on how public attention and scientific research are connected. A disconnect between the two is a problem for how we translate scientific knowledge into public policy, the subject of [another article in this issue](#). Of course, this exercise is not telling us anything about the attention given to rabies by the numerous people who are living in rabies affected areas with no means to access the internet or publish a scientific paper. We would be happy to receive your stories of bridging different audiences and making scientific tools work to bring about effective rabies control for those at risk.

*By Lea Knopf, Director of Institutional Relationships & Policy for GARC*

## NEWS FROM GARC AND WRD

### News from the GARC Philippines Office

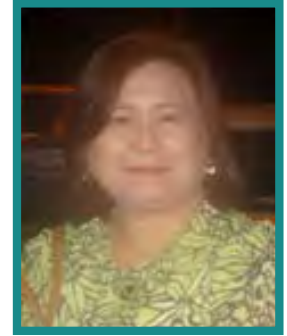
GARC would like to take this opportunity to introduce you to our new staff in the Philippines office but before we do that, all of us in GARC would like to send our most sincere thanks to Dr Betsy Miranda and Dr Maria Concepcion Roses for all of their tireless efforts in our Philippine office. We are sure that you will join us in sending our heartfelt best wishes for their future success in the field of global public health. Over the past several weeks, we have been adding professionals in the field of global public health focused on the field of rabies prevention to our office in the Philippines. Please join us in welcoming them to our GARC Team!

*Continued on page 2...*

...GARC Philippines continued from page 1.

**Ma. Luningning E. Villa, MD, MPH, Country Representative (Philippines and Indonesia)**

Dr. Ma. Luningning E. Villa has extensive experience in managing public health programs. Ning, as she is fondly called by her colleagues, has more than twenty-five years of involvement in various aspects of public health engagements such as administration, program and project management from the local to the national (Philippines) and regional (ASEAN) level.



She is not new to managing a rabies control and elimination program as she was the Philippines’ Department of Health (DOH) National Rabies Coordinator from 1996 to 2001. In 1997, she initiated the establishment of at least one Animal Bite Treatment Center in every province of the Philippines and the nationwide adoption of the Intradermal Regimen of Human Anti-rabies Vaccine. In 2008, under the purview of the ASEAN Plus Three Emerging Infectious Diseases Programme II, for which she worked as Programme Facilitator, the ASEAN Call for Rabies Elimination by Year 2020 was formulated and adopted by the ASEAN Member States. In 2010, she was WHO consultant to DOH on the drafting of the Medium-Term Plan and Manual of Operations of the National Rabies Prevention and Control Program. She is currently completing a study on rabies exposure.

Deciding to join the Global Alliance for Rabies Control was not difficult for her as public health management is her ‘first love’. The opportunity to work in GARC allows her to carry on her passion to make a difference in advancing public health globally.

**Sarah I. Jayme, DVM, Senior Veterinary Manager**

Being involved in various programs on transboundary animal diseases as a Veterinary Field Officer, Dr. Sarah Jayme is very keen to share her experiences in the implementation of GARC’s field projects.



She was part of the Foot and Mouth Disease (FMD) Task Force that successfully eradicated FMD in the Philippines. Aside from FMD, she led the field implementation of various animal disease control and prevention projects of the Food and Agriculture Organization (FAO) in the Philippines such as on Highly Pathogenic Avian Influenza (HPAI) and Ebola Reston.

Sarah also worked in the North Pacific for the Secretariat for the Pacific Community (SPC) for Influenza Pandemic Preparedness Project. She was also involved in the organizing the Animal Relief and Rehabilitation Philippines (ARRPh) for the areas affected by the typhoon “Haiyan” last November 2013.

Aside from her full-time work as the Senior Veterinary Manager of GARC, Sarah is currently studying part-time taking up Masters in Veterinary Public Health Management at the University of Sydney.

**Elaine Llarena, MA ,Communication and Education Consultant**

Ms. Elaine Llarena is an Assistant Professor at the College of Development Communication, University of the Philippines Los Baños (CDC-UPLB). Before joining the academe she was involved in the early stages of the GARC projects in the Philippines and Indonesia. Currently, she supports the communication and education team in the Philippines as a consultant.



Elaine has extensive experience as a communication specialist and manager in various animal health programs in the Philippines and Lower Mekong countries in Southeast Asia. She has also worked as a program officer in an animal welfare project in the Philippines which supports rabies control.

Her specialization in development communication, risk communication and research is a significant contribution to one of GARC’s goals which is to engage communities towards rabies elimination.

By Deborah Briggs, Executive Director of GARC.



## Earn money online for GARC

There are now a number of *FREE* ways you can support the Global Alliance for Rabies Control each time you use the internet.

### Earn as you search

[Goodsearch](#) is a Yahoo powered search engine that will pay us \$0.01 for every search you make through its interface.

A cent doesn't sound like much but, if you use Goodsearch consistently over the course of a year, you could generate between \$50 and \$100.

(I've found creating a shortcut in my favorite browser makes it easy to use Goodsearch everytime.)

### Earn as you buy

If buy goods online from USA or UK retailers, you can donate a percentage of your purchases from 1000s or retailers to rabies prevention – at no extra cost to you.

You pay the same but the retailer pays a small percentage to us. In fact, some retailers offer exclusive deals to members, so signing up to these fundraising services may even save you money.

For USA residents, please sign up to [Goodsearch.com/goodshop.aspx](#)

For UK residents, please sign up to [Easyfundraising.org.uk](#)

Install the browser add-ons to make sure every qualified purchase generates a donation.

### Please help

You're a busy person and these things – however quick and easy they are – will only raise money if you do them.

But, if you're reading this, you probably already know what a horrific disease rabies is - and that the immense suffering it causes is preventable.

By supporting Global Alliance for Rabies Control, you're joining the effort to eliminate human deaths from rabies and to reduce the immense suffering rabies causes in animals in forever.

Please do take a look at [Goodsearch.com](#), [Easyfundraising.org.uk](#), or [iGive.com](#) and sign up today.

If you have any questions about our fundraising, comments or thoughts about this newsletter, or our work in general, please do get in touch – we'd love to hear from you.

Written by [Liz Davidson](#), Community Engagement for GARC

## Ilocos Norte launch rabies education in the classroom

12 February 2014

Many children don't tell their parents when an animal bites them, particularly if the bite is minor. They are unaware of rabies and that the bite could be the entry point for the fatal virus.

If a child knows rabies is a risk it can save their life.

Ilocos Norte is a province of approximately 600,000 people in the north of the Philippines. On January 24, 2014 the Ilocos Norte Rabies Prevention Program Manual on Grade School Integration and Instruction was launched.



This means that from now on thousands of children living in Ilocos Norte will now be taught rabies prevention at school.

*Continued on page 5...*

## CARE: projects for lasting change

The Communities Against Rabies Exposure (CARE) project is now underway in six locations – four in Asia and two in Africa.

Too many rabies prevention schemes offer only short-term protection. Dog vaccination and sterilization are part of the solution but if not integrated within a sustainable structure the disease re-emerges. We have seen this time and again.

CARE is different. It is designed to bring about lasting change by engaging and aligning municipal and government bodies, the global scientific community and, most importantly, local communities in rabies prevention.

### Mass dog vaccinations and more

Eliminating rabies in dogs by vaccinating them removes the source of the disease (a dog bite is the source of transmission in 95% of human cases). But in addition to mass vaccinations, the CARE teams in Asia are working to establish sustainable diagnostic and disease surveillance systems to improve reporting of rabies – a notoriously underreported disease.

Training sessions held by GARC give local veterinarians and lab-technicians access to new techniques so they can assess the actual extent of the disease, the impact of the prevention measures, and track any outbreaks.

### Better treatment for more people

In the Philippines, active collaboration between local government units, other partner agencies and GARC has led to greater capacity in local Animal Bite Treatment Centers making sure more people have better access to timely and adequate treatment.

### “If only I’d known...”

To make sure people do know how to avoid rabies and what to do if exposed, we’re providing informational brochures, posters, and regular ‘caravans’ or ‘roadshows’ where, along with accessing written materials, people can come and ask questions.

Ilocos Norte is the latest Filipino province to bring rabies awareness into the classroom. In January 2014, the province implemented rabies prevention into the elementary school curriculum.

This far-reaching measure means that children between the ages of six and 12 will learn about rabies prevention at school this year and every year. These life saving messages are reinforced through modules in Science and Health, Filipino, English, Math, and Makabayan (Humanities). The teaching manual and materials were developed by GARC.

### CARE and collaboration

The CARE model is of collaboration and cooperation across society. It is fantastic that the three Filipino projects alone have already attracted over 1000 local health workers and students as volunteers to help with the mass vaccinations.

We believe that lasting change is possible. GARC creates and facilitates sustainable programs that strengthen the existing veterinary and medical structures. These programs would not be successful without the commitment and dedication of the local authorities and the communities themselves.

The CARE Project is a three-year initiative facilitated by GARC with funding support from the UBS Optimus Foundation and the World Society for the Protection of Animals (WSPA). The Office International des Epizooties (OIE) also provided additional canine vaccine support in the project sites in the Philippines.

CARE project sites are Ilocos Norte, Sorsogon, and Marikina City and Cainta Municipality in the Philippines, Nias in Indonesia, N’djamena in Chad and Tanzania.

*Summarized by Dane Medina, GARC Communications Officer*



*Children at one of the rabies caravans*

...Ilocos Norte continued from page 3.

This is a practical and sustainable measure that will save lives in the area.

Specifically tailored for the province, the Ilocos Norte Rabies Prevention Program Manual on Grade School Integration and Instruction was developed by GARC and is part of the Communities Against Rabies Exposure (CARE) Project in Asia supported by GARC and UBS Foundation

Present at the launch were representatives from GARC and its provincial partners led by Ilocos Norte Provincial Veterinarian, Dr. Loida Valenzuela, DepEd-Ilocos Norte Division Superintendent, Dr. Cecilia Aribuabo, and GARC Communication and Education Consultant, Ms. Elaine Llarena.



The provincial government was represented by Provincial Administrator, Atty. Windell Chua who gave the keynote message. DepEd Ilocos Norte Education Program Supervisor, Ms. Joye Madalipaya and the 12 Master Teachers who lent their expertise in the development of the five major subject areas (Filipino, English Science, Mathematics, and Makabayan) that were included in the curriculum manual were also there.

## NEWS FROM THE COMMUNITY

### Explaining vampire bat rabies persistence



Vampire Bat, *Desmodus rotundus*.  
Image by Ltshears (Own work) via Wikimedia Commons

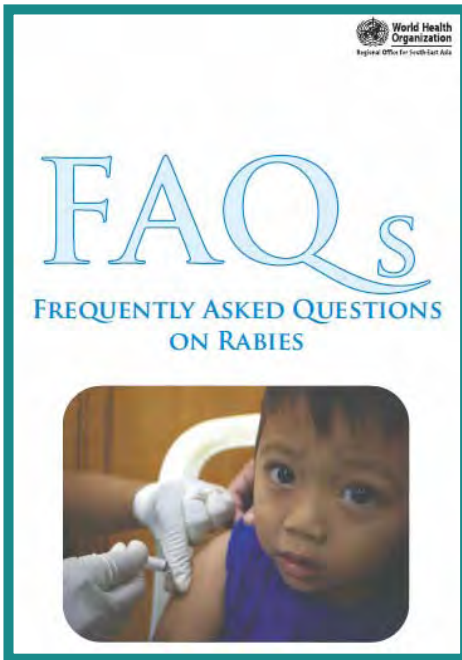
A new study has paired field data with modelling to understand how rabies infections persist in vampire bat populations. The results have implications for the control of rabies and other emerging diseases transmitted by bats.

Cattle farms provide vampire bat populations with almost unlimited amounts of food, and as farmers encroach into forest habitat, rabies outbreaks originating in vampire bat populations have become a significant source of livestock losses in Latin America. Rabies outbreaks in humans are also increasing in remote Amazonian populations, which may be linked to a combination of human encroachment into forested areas, a depletion of the bats' natural prey, and improved detection. Control measures involving indiscriminate culling of bats and vampiricide (an anticoagulant which kills bats who ingest it after grooming other bats) have been used since the 1960s, but even when used extensively they do not eliminate rabies infections from an area.

Data from infection studies in captive vampire bats and a unique long term field study monitoring individual rabies exposures in 17 colonies across four areas of Peru were used. The study tried to match the observed patterns of rabies infections with models assuming different factors relevant to transmission and also culling of colonies. The authors concluded that the best explanation for the data came from models that assumed (i) that most infections

*Continued on page 6..*

## Frequently Asked Questions on Rabies – New publication



Although rabies is one of the oldest diseases known to clinicians and the general public, I find that it can be confusing for many of us when we discuss the mode of transmission and case management of dog bite victims. We felt that there was a need for a technical document, particularly for rabies endemic countries which clarifies information for health professionals and the general public. Therefore the WHO Regional Office for South East Asia came up with a 'Frequently Asked Questions on Rabies' document considering problems and practical solutions. The document can be accessed [here](#).

These FAQs are an attempt to provide accepted and evidence-based answers to common questions about the disease. Although efforts have been made to include all possible situations, the reader is advised that these FAQs are by no means exhaustive and they may need to consult an infectious disease/rabies expert in situations where their doubts are not addressed. These FAQs are presented in two sections. The first section provides information for the general public. The second section gives advice to health providers on dealing with wounds from potentially rabid animals, and the administration of anti-rabies vaccines.

I had an opportunity to visit Kabul in December and there the Director of the Health Services was very happy to see the document and he told me that he had been searching for such a document which is useful for field level health professionals. He immediately requested that WHO Afghanistan translate it in to their local language. Similarly we have received requests for adapting and translating in other local languages of South Asia which is encouraging.

During 2013, WHO, FAO and OIE were involved in many other encouraging developments in rabies control and/or elimination including; (i) an advocacy meeting for elimination of human rabies transmitted by dogs from SAARC countries in Dhaka in August to finalize the 'SAARC Rabies Elimination Project' which has been submitted to the SAARC Development Fund for consideration, (ii) a Regional meeting on zoonotic diseases in Chiang Mai (Thailand) in August, (iii) the ASEAN intersectoral workshop on rabies prevention and control in October in Danang (Vietnam) and (iv) an Asia-Pacific Workshop on Multisectoral Collaboration for the Prevention and Control of Zoonoses in Kathmandu (Nepal) in November. Rabies control and/or elimination were discussed among partners and Member countries during these meeting/workshops. There were a number of national and intercountry workshops on dog rabies control and dog population management organized by animal welfare organizations and professional organizations. The region has also made great progress in the final stages of phasing out nerve tissue vaccine, training in the use of the dRIT for rabies diagnosis and cost-saving ID vaccination techniques to improve accessibility, availability and affordability of modern rabies vaccine, and the promotion of rabies elimination/control as a model for operationalization of the One Health.

*Contributed by Dr Gyanendra Gongal, Scientist, Disease Surveillance and Epidemiology, WHO Regional Office for South East Asia, New Delhi*

...**Vampire Bat Rabies** continued from page 5.

(around 90%) were non-lethal to the vampire bats and effectively immunized them (ii) Frequent movement of bats between colonies enabled viruses to be spread amongst them and persist in an area.

The conclusions have implication for laboratory studies and for control efforts. Many experimental studies use high doses of virus to generate 50-90% mortality in captive bats, which this study suggests is not a natural phenomenon. Selective destruction of individual colonies may well limit local spillover into cattle and humans, but it is unlikely to be an effective means to eliminate the virus from a region. If localized culling reduces previously immune individuals, or increases the dispersal of bats, then this could actually make a rabies outbreak worse. Effective control is likely to require a better understand of how human practices affect vampire bat movements and more spatially coordinated control efforts.

*Summarised by Louise Taylor from Blackwood et al "Resolving the roles of immunity, pathogenesis, and immigration for rabies persistence in vampire bats" in PNAS, vol. 110 p20837-42, December 2013*



## Research agendas not helping policy makers

A [recent paper](#) in *Infectious Diseases of Poverty* by Yin et al, highlights a serious disconnect between research being undertaken on rabies in China, and the information needed for effectively reducing its impact.

There has been recent and significant political progress on rabies control in China. The State Council issued official notices in 2009 and 2012 underlining rabies control as a priority and providing program objectives for 2015 and 2020. Specific rabies-related guidelines and regulations have been passed recently by 4 ministries, and intersectoral collaborative mechanisms have been set up to facilitate control efforts. A much improved (though likely still underreporting) surveillance system for human rabies has been developed, though surveillance in dogs remains inadequate.

The authors analysed the research in 189 medical research articles on rabies in China from 1963 to 2012 and added a further 12 official documents (reports, guidance and legislative documents). They found a huge increase in research into rabies over the last decade, probably related to the reemergence of rabies in China that peaked in 2007. However, almost all of the research was laboratory (135 articles) or clinic-based (23 articles) and only 31 articles were based in community settings. The authors found no articles on evidence-based control practices (eg. dog population characteristics or management, tools for monitoring or evaluating control efforts) or on evidence-based advocacy (eg. estimating the burden or cost of rabies).

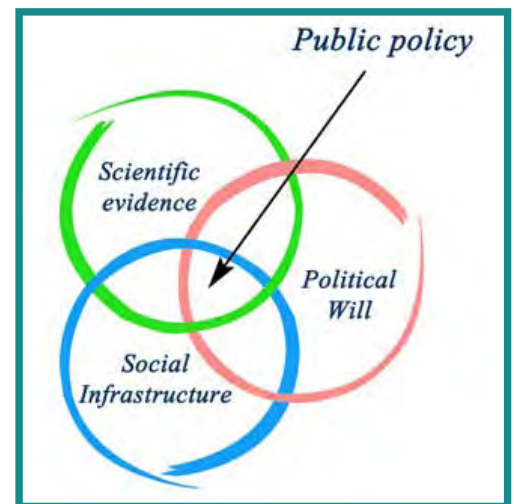
Significant information gaps which prevent the development of comprehensive strategies to reach the policy objectives were found. For example, no research has investigated the exact reasons why cases in humans have fallen in recent years. There is no data on the true incidence and the financial burden of rabies to people paying for post-exposure treatment and related costs, no monitoring of whether PEP availability has improved, or whether dog registration and vaccination procedures are working. Doubts over dog vaccine quality and the adequacy of the supply also persist.

The authors say that there is not enough research on health systems, economic evaluations, and evidence-based control practices to guide effective policies. Operational issues such as dog population characteristics, cost effective vaccination and education strategies, locally adapted dog population management practices and impact assessments of interventions are still lacking. Only with this type of information can a true national strategy be developed to achieve the goals set by policy makers.

A [similar study](#) in India by Kakkar et al. in 2012 came to the same conclusions. A total of 93 research articles from 2001 to 2011 showed that most focused on lab-based (57 articles) or clinical facility-based (25 articles) studies, mostly on the development of new interventions. Only 9 (10%) were community based studies, and less than 10% of the research looked at improving existing interventions or research related to health policy and systems. This is despite an earlier research prioritization exercise which suggested that socio-politic-economic research, basic epidemiological research and research to improve existing interventions ('actionable policy-relevant research') was most needed to effectively control zoonotic diseases. These authors suggested that the current policy 'impasse' and the failure to establish a national rabies control plan for India were partly due to the lack of necessary applied research. They suggest a strategic research agenda, focused on the needs of policy makers is needed.

Jakob Zinsstag, in his [editorial in \*Infectious Diseases of Poverty\*](#), points out that for many neglected tropical diseases, scientists (and funding bodies) prefer sophisticated molecular analyses over investigations into effective interventions in communities. Given that rabies is currently preventable, he suggests that this continuation of basic research while not engaging in the control of rabies appears almost cynical. He calls for research that translates knowledge into effective action by addressing the social, political, economic and psychological complexity of effective rabies control interventions, with the necessary collaboration between scientists and authorities.

Summarized by Louise Taylor from the publications, which are all freely available via [PubMed](#)





## FAO's Technical Cooperation Project in Bali

Rabies was introduced to Bali some time in 2008 and spread undetected in the canine population until the first person died of rabies in November 2008. Initial efforts by government to control the disease, while well intentioned, were ultimately not effective in preventing further spread of rabies across the island. The virus attacked relentlessly, and with it the human death toll continued to rise. In the month of October 2010 alone, eleven people died from rabies. At this time, a local NGO, the Bali Animal Welfare Association, demonstrated that mass vaccination of dogs was possible in Bali and that dog vaccination could reduce human deaths from rabies. In 2011, FAO was requested by the Ministry of Agriculture to assist the Bali provincial government to conduct mass dog vaccinations to progressively control the disease.

FAO facilitated an initial stakeholders meeting of all government and NGO stakeholders involved in rabies control in Bali which developed a control strategy and a comprehensive work plan with roles and responsibilities clearly assigned to members of provincial and district governments of Bali. A rabies control programme was then established based on the principles of comprehensive mass dog vaccination, community awareness, establishment of strong links between human and animal health services to follow-up bite cases, and a reduction in dog culling.

In all 234,974 dogs received rabies vaccine across all villages of Bali. Integrated Bite Case Management (IBCM) protocols allowed nurses in the hospitals where bite victims seek treatment to call in a rapid response team of veterinarians who immediately travel to the patients' villages, find the biting dog and send samples for testing. If testing proves the dog was rabid, emergency vaccination of dogs in the area is carried out to prevent any further spread of the virus.



*5 year old Komang Sentana, pictured with his parents, was playing in his yard when a rabid dog entered the yard and bit him above the eye. The integration of health and veterinary service into a rapid response not only saved his life, but doubtless protected others from the spread of rabies.*

The success of this initial campaign catalyzed further commitment and massive investment in rabies control on Bali by the Government of Indonesia and by the 2013 rabies mass vaccination campaign, over 95% of funding was being provided by Government. As a direct result of the Bali rabies control programme, human cases decreased from 82 human cases in 2010 to only 1 case in 2013. With further commitment and investment from the Government of Indonesia, the rabies virus may be eliminated from the island of Bali.

The rabies control strategy used on Bali is being enshrined in a Master Plan for the control and elimination of rabies in Indonesia, currently being developed by the Director of Animal Health. This includes mechanisms for stakeholder coordination and facilitation, rabies surveillance, response and control, rapid and accurate laboratory diagnosis, community engagement and heightened rabies awareness, and the building of increased capacity among livestock service staff to address the disease. This plan will play a key role in the development of a sustainable and comprehensive rabies control programme across the twenty-three rabies-infected provinces of Indonesia, and will support expansion of the Bali-style rabies control programme to the islands of Flores and Lembata.

Beyond Indonesia, the dog vaccination-focused rabies control strategy is being adopted by other countries in Asia and is expected to make a considerable contribution to ASEAN rabies control policy and to the ASEAN Road Map for Rabies Control by 2020.

*Submitted by the FAO Emergency Centre for Transboundary Animal Diseases (ECTAD) Indonesia.*

## Dog butchering exposes Nigerian meat handlers to rabies

Nigerian researchers have shown that local butchers in Abia State may be exposed routinely to rabies from apparently healthy, endogenous dogs when preparing the animals for human consumption. A [study conducted in southeastern Nigeria](#), whose native population consumes dog meat as part of the traditional diet, detected the rabies virus in the saliva and brain tissue of 5% of slaughtered dogs. Researchers also confirmed that butchers take few precautions around symptom-free dogs prior to slaughter, using their bare hands to muzzle animals without using adequate protection against bites, potentially placing butchers at high risk for contracting rabies.

A recent rabies outbreak in neighboring Cross Rivers State in Nigeria claimed the lives of 8 people who suffered dog bites, showing that rabies is a growing regional problem. To gain a clearer understanding of the extent of rabies in the area, researchers sampled saliva and brain tissue in 100 local dogs slated for butchering and tested them for the presence of rabies virus. The results of tests on saliva and brain samples were in agreement, and all positive cases of rabies (5%) were from apparently healthy, asymptomatic, indigenous breeds—confirming that dogs slated for consumption shed the virus in saliva at the time of butchering. Because dog meat is habitually consumed, and local butchers are unable to screen out infected animals and remove them from the food supply, the handling of infected dog meat may have implications on regional public health. There is potential for virus transfer if fluids or nervous tissues of infected animals come into contact with breaks in the skin before the meat is cooked.

In addition to the challenges of screening dogs for rabies, researchers found that a lack of rabies vaccination (for both butchers and dogs), unsafe dog handling habits, and low levels of formal education placed local butchers at high risk for rabies infection. A questionnaire distributed to 19 butchers of dog meat revealed that nearly all meat handlers (94.7%) had been bitten in the past during the butchering process, none were vaccinated, and very few had sought appropriate medical treatment (27.8%)—preferring traditional medicines based on local plants and ashes instead. No data was collected to correlate



exposure to infected dog meat to the number of rabies infections in people, but the study confirmed that the rabies virus can be present in seemingly healthy dogs in the dog meat trade in Nigeria. This poses an additional risk to butchers, their suppliers, and their customers. By disclosing the risky butchering practices in Nigeria, this study may encourage health authorities to provide targeted rabies education to the local population so that dog slaughter can be highlighted as an additional source of rabies exposure.

*Contributed by Laura Baker, a scientific writer and GARC volunteer, based on the [publication by Mshelbwala, Ogunkoya and Maikai](#) in *ISRN Veterinary Science*, Volume 2013 (2013), Article ID 468043, p1-5.*

## Upcoming Conferences

The Global Vaccine and Immunization Research Forum — co-hosted by WHO, the United States National Institute of Allergy and Infectious Diseases, and the Bill & Melinda Gates Foundation — will take place from 4-6 March 2014 in Maryland, USA. More information at [www.who.int/immunization/research/en/](http://www.who.int/immunization/research/en/)

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 second International Conference on Animal Health Surveillance (ICAHS2) will be held in LaHavana, Cuba, May 7-9, 2014. The theme is "Surveillance Against the Odds". See their website [www.animalhealthsurveillance.org](http://www.animalhealthsurveillance.org)

The 25th Rabies In the America (RITA) conference is due to be held in Mexico in October, further details will be posted when available.

The 5th International Meeting on Emerging Diseases and Surveillance (IMED 2014) is scheduled for October 31 - November 3, 2014 in Vienna, Austria, organized by ISID and ProMED. See <http://imed.isid.org>

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@rabiesalliance.org](mailto:louise.taylor@rabiesalliance.org). For further information on the Alliance's work see [www.rabiesalliance.org](http://www.rabiesalliance.org)