



# RABID BYTES

NOVEMBER 2014 • ISSUE 40

Me & My Dog .....	2
SARE.....	2
Managing Dog Populations .....	3
WRD 2014 .....	4
Jeanna Giese Wedding.....	5
Impacts of Rabies Control Measures .....	5
Towards a Rabies Free Kenya.....	6
When Rabies Immunoglobulins are Unobtainable.....	7
OIE Unveils New Tools for Fighting Rabies..	8
Recent Research Papers.....	8
Upcoming Conferences and Events.....	9

The newsletter of The Global Alliance for Rabies Control

## EDITORIAL

### Rabies prevention: help is here to make progress

As the excitement of World Rabies Day dies down, it's a great time to think about how rabies control efforts could be reinvigorated or even start building a new program to eliminate rabies in your region. GARC and its partners have been working together to provide you with the most effective resources to help you with these efforts.

Our most comprehensive practical toolkit is the Blueprint for Canine Rabies Prevention and Control – developed by GARC's Partners for Rabies Prevention network, including the WHO, FAO and OIE - to serve as a guide for countries that want to prevent human rabies by eliminating canine rabies within their borders.

It is a free, online resource, enabling ministries and other interested parties to help themselves through the process of designing, implementing and evaluating a large scale rabies control program. It leads users through all of the components of a successful canine rabies control/elimination program, before, during and after mass dog vaccination, with information on surveillance and communications aspects of such a program.

Just ahead of World Rabies Day, a full revision and extension of the Blueprint for Canine Rabies Prevention and Control was completed. The aim is for the Canine Rabies Blueprint to become a central reference point from where those interested in implementing canine rabies control can find all the resources they need – from international recommendations on rabies control strategies, guidance on PEP regimens and animal movement regulations, to detailed practical guides on vaccination techniques and lists of supplies needed for surveillance teams, to case studies of how it has been approached in other countries.

A full review of the content was carried out to make sure it was accurate and up to date, which resulted in more than 200 page edits, and 55 updated or new resources being added. In addition, several more significant changes were implemented to reflect the discussions at the meeting of Partners for Rabies Prevention meeting in April.

A revised section on Communication focuses on how to identify stakeholders and tailor messages to all those different audiences that have a role to play in rabies control. If stakeholders are involved from the development stages, control strategies that are appropriate for the setting and the community participation necessary for success is more likely to be achieved.

Integrated into this revision are links to more data on the cost of rabies to countries, in terms of human and animal lives lost, economic losses, and the costs of control measures. In addition, a policy toolkit to help users advocate to policy makers in their countries for increased efforts and investment in rabies control is included.

Finally, an important new section, on planning and evaluating progress towards rabies elimination (the Stepwise Approach towards Rabies Elimination, SARE), guides users through the necessary stages in a logical way (see separate article [here](#)).

More tools to help communities build awareness of and advocacy for greater efforts and investment in rabies control are anticipated to be incorporated into the blueprint as they become available.

GARC is hosting a free webinar on December 4th for those who would like to learn more about how to use these resources, and you will also have an opportunity to get some of your questions answered – for details and to register please visit [www.rabiesalliance.org/what-we-do/projects/global-webinars](http://www.rabiesalliance.org/what-we-do/projects/global-webinars).



## NEWS FROM GARC AND WRD

### Me and my dog: harnessing the internet to increase awareness

This World Rabies Day, GARC chose to celebrate effective rabies prevention at all levels, from international stakeholders to individuals, with the theme that most of you are now very familiar with – #TogetherAgainstRabies.

As part of these efforts, the online campaign *Me and my dog* reminded dog owners in rabies-endemic countries of the importance of keeping their dogs' vaccinations up to date. It also raised awareness among dog lovers in countries where rabies is well controlled, of the plight suffered by animals elsewhere.

The idea was simple enough: show your love for your dog by sharing a picture with the hashtag #TogetherAgainstRabies, and we would add it to a collection of photos from all over the world to show that people care, and to raise awareness of the life-saving importance of canine rabies vaccination. Photos could be added through the GARC website, Facebook and Twitter, and people were then encouraged to share the link with their family and friends.

The global response was phenomenal. People from around the world submitted photos and many signed the pledge to support the call for people to vaccinate their dogs and for governments to support canine vaccination for effective and humane rabies control. The campaign had global appeal and even attracted attention in countries where rabies is no longer endemic, but its runaway success was in India.

On September 26, #TogetherAgainstRabies trended nationally on Twitter, directly reaching over 555,000 people. The campaign also engaged over 50,000 people in India on Facebook. As the country with the highest number of rabies cases in the world, the Indian results were very encouraging.

Celebrity endorsements of the campaign included our patron Alexander McCall Smith, internationally renowned designer Orla Kiely and [Bollywood superstar Esha Deol](#).



One of our local partners in the Philippines overcame the online limitation of the campaign creatively by setting up a photo booth at their World Rabies Day event. This enabled participants to have photos taken with their dogs, and these were added to the collection. It proved to be an excellent light-hearted way of reminding communities about caring responsibly for their dogs through vaccination.

It's encouraging to know that the message of rabies prevention through dog vaccination has reached so many people, and the lessons learned will help us to reach many more in future. Please take a look and enjoy the hundreds of photos in the collection at <https://storify.com/RabiesAlliance/me-and-my-dog-togetheragainstrabies-1>. And remember, you're a major part of this. Your work helps enable the mutually beneficial human-canine relationship that so many people and dogs around the world enjoy.

We would like to thank the World Rabies Day Partners for their support of the campaign, with particular thanks to MSD Animal Health for the Indian outreach and Sanofi Pasteur and Merial for their global support.

### A tool for the planning and evaluation of rabies control programmes

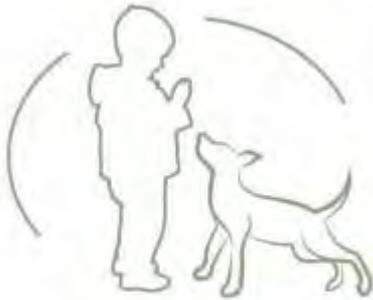
**The Stepwise Approach towards Rabies Elimination (SARE) was designed in response to questions from national governments of rabies endemic countries such as: How do we start?, What needs to be put in place first? Where should the emphasis be in capacity building while resources are so scarce?**

The planning tool was developed by FAO and GARC, in collaboration with WHO and other partners, with the support of the Bill and Melinda Gates Foundation. It provides practical guidance on how to elaborate and implement a national rabies elimination strategy in a stepwise manner - with the ultimate goal to eliminate dog-transmitted rabies. The concept and tool has been subject to various reviews by experts and inputs received during national or regional rabies meetings in Africa and Asia, and will continue to be revised following feedback.

The SARE is not prescriptive nor is it intended to replace existing regional or national rabies control strategies and is composed of six stages, ranging from 'Stage 0', where no information on rabies is available for a suspected rabies-endemic area, to 'Stage 5', where valid and timely data confirm the elimination of dog-transmitted rabies. Each of

*Continued on page 3...*

## Managing dog populations humanely and effectively



2nd International Conference on Dog Population Management

In many countries, dog population management runs side by side with mass canine vaccination programmes, and is often an integral part of established rabies control efforts.

There are many benefits to the community when this is done in an effective manner— along with a reduction in human and animal rabies cases, there are fewer attacks and dog bites, improved animal welfare, reduced transmission of other zoonoses and more responsible caring for pets. Unfortunately, mass killing of dogs is sometimes the response to a rabies outbreak, which causes tremendous suffering and is not effective as a way to control rabies.

Humane, effective and sustainable dog population management is a challenge worldwide. The 2nd International Conference on Dog Population Management, co-organised by GARC, will be held in Istanbul, Turkey, from 3-5 March 2015.

It brings the public sector together with specialists in animal welfare, animal health and education, ecologists, economists and social scientists to share and discuss intersectoral collaboration, innovation and evidence-based solutions for dog population management.

Participants from all over the world will have the opportunity to learn about innovative approaches to managing dog populations, share results of research and field work on the issue, and use the expertise and experience of speakers and other participants to improve animal and human health and wellbeing in their countries over the long term. Register now to join leaders in dog population management and be inspired by innovative and successful programmes from around the world - please visit [www.dogpopulationmanagement2015.org](http://www.dogpopulationmanagement2015.org) for further details.

You can also share your successes, challenges and innovations by submitting an abstract – the deadline is November 15th 2014.

The conference has been organised by the ICAM (International Companion Animal Management) Coalition, which was established to support the development and use of humane and effective companion animal population management worldwide. Current members are: [International Fund for Animal Welfare](#); [World Animal Protection](#); [Royal Society for the Prevention of Cruelty to Animals \(RSPCA\)](#); [Humane Society International](#); [World Small Animal Veterinary Association](#); and the Global Alliance for Rabies Control.

...SARE continued from page 2.

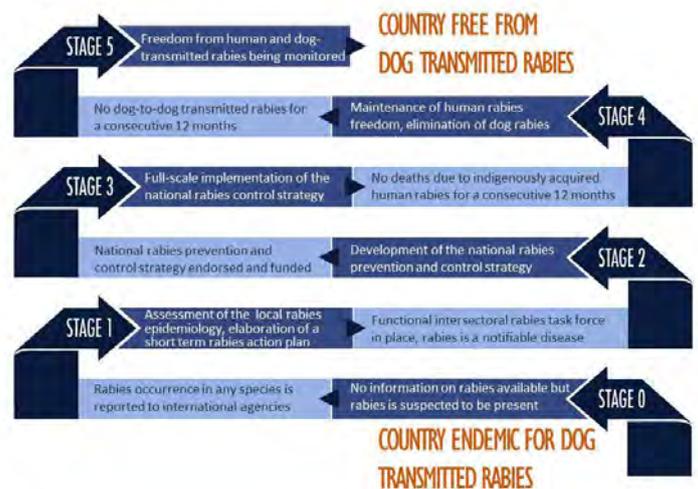
the 6 stages is characterized by a set of objectives to be reached and builds on the previous successes achieved, with activities in the main categories: Legislation; Data collection & analysis; Laboratory diagnosis; Information, education & communication; Prevention & control; Dog population related issues; and Cross cutting issues. Throughout each, suggestions for intersectoral collaboration are included and crucial core activities, such as targeted dog vaccination, raising awareness of rabies and rabies post exposure prophylaxis are included throughout all stages with progressive increases towards a full scale implementation.

As most operational and technical aspects of rabies control activities are already described in the Canine Rabies Blueprint, the [SARE planning tool](#) is linked into the relevant sections of the 'Canine Rabies Blueprint' as well as other relevant resources.

One way to kickstart a rabies control programme might be to hold a national rabies stakeholder consultation where SARE and the canine rabies blueprint are presented, discussed and national constraints and opportunities of rabies control are identified.

It is planned to continuously improve the tool over time through the sharing of experiences by regions and countries using it, and as relevant documentation of these efforts become available in the future.

Contributed by Dr Lea Knopf, who contributed to the SARE tool on behalf of GARC.



An overview of the stages and keys of the SARE.

## World Rabies Day 2014 - roundup



Around the world there are more dedicated activists working to end rabies than ever before and World Rabies Day is a chance to celebrate that every single vaccine, volunteer, and advocate help bring that goal a step closer.

Here is a brief summary of some of the highlights of World Rabies Day 2014:

Asia registered the greatest number of events – ranging from T-shirt design competitions for school children to mass dog vaccinations, to symposiums for experts.

The power of World Rabies Day to multiply efforts was felt in Pondicherry, India. Dr. Johnson wrote to tell us how he and another organizer found each other and were able to join forces as a direct result of

registering events on the World Rabies Day webpage.



On the African continent activities took place all the way from Tunisia to South Africa. Kenya launched its National Rabies Elimination Strategy – the significance of which is covered in this story.



Meanwhile in America, several international organizations joined forces for the Pan American World Rabies Day 2014 Initiative. This aimed to continue momentum and remind stakeholders that, despite excellent progress in reducing the number of canine rabies cases in the region, complacency is fatal and more work needs to be done, particularly in hot spots like Haiti.

In Europe, rabies is largely well controlled but nevertheless hosted various events ranging from fundraising to vaccinating the dogs of homeless people on the streets of Bratislava, Slovakia to awareness of rabies among Albania’s wildlife.

This year World Rabies Day also gave us an opportunity to celebrate something a bit different: rabies survivor Jeanna Giese married Scott Fraccasso and used the occasion to raise awareness of rabies and remind us all that miracles do happen.

Social media also played a large part this year. Beyond the Me and My Dog campaign, it has been great to connect with others working in the field and share their rabies prevention work. To get a flavour of the activity, go to <https://tagboard.com/TogetherAgainstRabies/190720>.

And, if you’re on Facebook or Twitter, please connect with us.



Overall more events were registered and more countries than ever took part. The numbers are encouraging but your voice matters too: if you have any feedback or comments about World Rabies Day, please get in touch with the campaigns team. [We’d love to hear from you.](#)

## NEWS FROM THE COMMUNITY

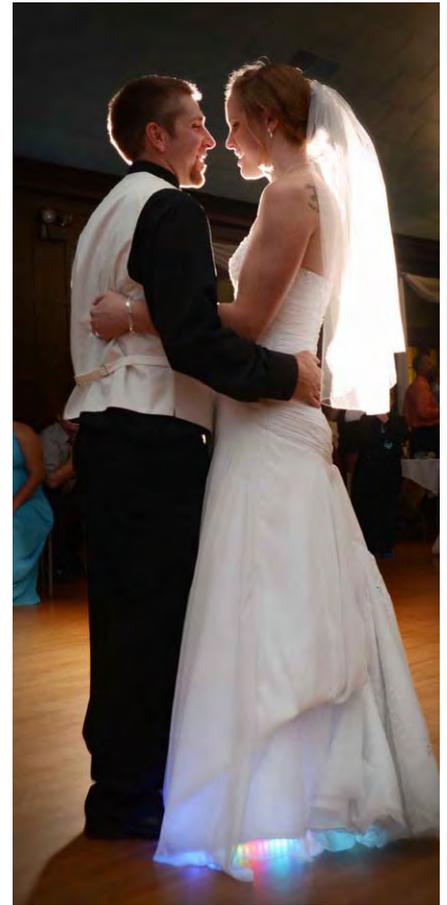
### Jeanna Giese remembers her experiences with rabies on her wedding day

On September 12th, 2004, I was bitten by a rabid bat at a church service in my home town of Fond du Lac, Wisconsin. After battling for my life, I became the first person in the world to survive symptomatic rabies without receiving a vaccination. On September 20th, 2014, I got married in that same town, and didn't forget what had happened 10 years earlier.

The wedding date was strategically picked to be between the date I was bitten and World Rabies Day. I made sure the dress I wore didn't hide the tattoo on my left shoulder (a flying bat in a cross with the words 'Miracles Happen' and 'September 12, 2004' surrounding the image). Pictures after the ceremony included the church where I was bitten and Dr. Rodney Willoughby, who created the Milwaukee Protocol to save my life, was in attendance.

My husband, Scot Frassetto, and I held two fundraising events during our wedding reception for the Global Alliance for Rabies Control. First, I had created a game in which guests would donate \$1 (or more) to pick a card. If the card that was picked was greater than a 6, my husbands and I would kiss; less than a 6 simply resulted in a donation. Second was the traditional "Dollar Dance," where guests paid \$1 (or more) to dance with the bride or groom. While most couples use the money for their honeymoon, we added this to our "kissing donation."

My husband and I went on a honeymoon after the wedding. While on our trip, we stopped in Ann Arbor, Michigan, to participate in the Great Lakes Bat Festival. I presented my story of survival and shared information about rabies awareness and the Alliance's mission. I also raised more money by asking for donations in exchange for World Rabies Day buttons. My husband and I raised over \$400 for GARC during our wedding.



*Jeanna Giese is an ambassador for the Global Alliance for Rabies Control, and continues to use her experiences to raise awareness about the threat of rabies.*

## Assessing all the impacts of a rabies control intervention

For the first time, a One Health framework has been developed to assess social, animal welfare and ethical impacts together with epidemiological and economic impacts of rabies control measures. Besides the usual measures of how dog rabies cases, dog bite incidents and human rabies cases changed as the intervention was carried out, community based interviews were carried out to measure how attitudes changed towards street dogs, the control programme, and dog related problems. Assessments of the intervention on animal welfare and ethics were also carried out.

The framework was tested with a case study of rabies control in Colombo City, Sri Lanka, comparing the periods 2002-6 (baseline situation) and 2007-2011 (intervention). In 2006, mass dog culling (by gassing) was banned and replaced with vaccination and sterilization of roaming dogs. Vaccination of owned dogs and PEP provision was unchanged between the two periods, but education on dog bite prevention and the establishment of dog managed zones were also implemented from 2007-2011.

Epidemiologic data suggested that dog rabies cases and dog bites fell significantly; from 172 to 68 total dog cases and from 13,871 to 9,216 for annual dog bites. There were 3 human deaths from rabies in each of the periods, while the total number of people seeking medical attention for dog bites in the City rose from 6,288 (baseline) to 7,680 (intervention), reflecting the increased awareness of the need for treatment (though clearly most people still do not present for treatment), and possibly also improvements to the reporting system. An estimated 9,384 dogs culled in the baseline period fell to 0 for the intervention, whilst 5,323 dogs were sterilized during the intervention period. Costs for each component were derived, and the total cost of programme was assessed for each period. Around \$1.00m more was spent during the intervention period than the previous years, with 80% of this being in the animal health sector, and 20% in the human health sector.

The intervention averted an estimated 738 DALYs (life years spend with disability), attributed to the reduction in psychological distress of dog bite treatment, as deaths were unchanged. Community surveys revealed a better acceptance of the control methods and the roaming dog population, fewer dog related problems and a reduction in the perceived dog

*Continued on page 7...*

## Towards a Rabies-free Kenya; Kenya takes the bold step!

The 2014 World Rabies Day celebrations may easily be the most important Kenya has held so far. Three occurrences made the 2014 event distinct from the previous ones and a milestone for Kenya.

The first and most significant was the launch of the National plan to systematically and progressively reduce rabies burden and eventually eliminating the disease in humans through mass-dog vaccination; starting with pilot regions comprising of areas with the highest burden of rabies disease, before spreading the elimination campaign to the rest of the country. Such a plan promising a Kenya free of Rabies by 2030 has not existed before, and the fight against rabies in Kenya has hence been uncoordinated, patchy and unsuccessful.

The second distinct occurrence was the proceedings of the World Rabies Day pre-conference, attended by over 250 veterinarians, para-veterinarians and medical doctors. Most notable was the review of evidence that helped “burst 3 myths” that have encouraged inaction towards rabies in the country and the region.

**Myth 1** has been that Rabies is but a small public health problem. This misconception was countered by the evidence that Rabies kills up to 2000 people in Kenya every year, each of which is 100% preventable.

**Myth 2** has been that wildlife serves as important reservoirs for the rabies virus, and elimination is the difficult without controlling the wildlife phase. Prof. Sarah Cleaveland, a world re-known rabies expert, presented convincing data from the Serengeti ecosystem that demonstrated that controlling rabies in domestic dogs, controlled rabies in wildlife.

**Myth 3** has been that stray dogs are far too many and will be a major hindrance to rabies control. Participants realized that the contribution and population of strays was exaggerated, and that most ‘stray dogs’ have owners and a number of dogs sufficient to break the rabies cycle are available for parenteral vaccination.



Photo: Sarah Cleaveland

The third distinct occurrence was the quick political buy-in to the vision of rabies elimination in Kenya. Dr. Andrew Mutava, the County Executive Officer for Health in Makueni County where the launch was conducted, stated that his ministry spent up to 24 million shillings (approximately 300,000 USD) annually on anti-rabies vaccines for the more than 2000 patients reporting to his health facilities with dog-bite wounds. He argued that if half of these monies were directed towards dog vaccination, his county would not only save human lives but would also make substantial savings to the health sector, promising to work with his livestock counterpart to eliminate rabies in Makueni. Kenya is comprised of 47 such Counties, each with a budget they can allocate to tackle public health problems such as Rabies.

Kenya has established an effective health and livestock inter-ministerial unit dubbed the Zoonotic Disease Unit (ZDU), which facilitates coordination to control zoonotic diseases in Kenya. The adoption of a National strategic plan for the elimination of Rabies, backed by scientific data, the conducive political environmental and existence of structures such as ZDU for the implementation of the plan are ingredients of a possible success story. Kenya’s journey to rid herself of Rabies is on course. She must believe it is within reach, and like never before, get on to work and be a leading example to her neighbours in the belief, Yes We Can – stop the Rabies menace!

*Thumbi Mwangi is a Researcher at the Kenya Medical Research Institute working closely with Kenya’s Zoonotic Disease Unit, and a Faculty member at the Paul G. Allen School for Global Animal Health, Washington State University.*

## When Rabies Immunoglobulins are not affordable or not available

We are experiencing a severe artificial shortage of Rabies Immunoglobulins (RIGs) in India because companies are not producing enough of them. In Shimla (Himachal Pradesh, India) and also in other parts of the country there are currently no RIGs available in the local market. This may be in part due to the Drug Price Control Order of Government of India which limits the price that companies can charge for essential medicines. Whilst this makes drugs more affordable for patients, it also makes the market less attractive for pharmaceutical companies who may reduce or stop production. Compounding this problem is also the low demand for RIGs in India – a low volume of prescriptions by doctors and then even lower numbers of patients actually purchasing them due to the unaffordable costs involved. Faced with low demand due to the cost, the chemists find that expensive RIG stock expires before it is sold, and tend not to store it in future.

Whilst RIGs are not necessary for patients who have previously been fully immunized against rabies, it is a critical part of PEP for unvaccinated patients. As it takes about 7-10 days for the vaccine to initiate active immunity in the patient, there is no substitute for RIGs' ability to immediately neutralize the virus in the wound. Abbreviated courses of rabies vaccine alone have been shown to stimulate more rapid immune responses, but these are only recommended for previously vaccinated people.

Whilst the use of rabies vaccine is high, the use of RIGs is very low amongst bite patients. At the Shimla anti-rabies clinic at DDU hospital, 1,834 people presented with animal bites in 2013, including 1,168 dog bites and 580 monkey bites. All of these received vaccine, but even after counseling over its importance, only 4 patients opted to receive RIG, because of the expense of the product (a cost of around 1200 Rupees (around \$20) for equine RIGs or 30,000 Rupees (around \$500) for human RIGs for an average patient). The vaccine is now given free as a result of the shift to low cost intra-dermal vaccination, but RIGs have to be purchased from the market. There was no active follow up after the patients who received PEP in 2013.



*A scratch by an animal is raised after RIG is injected locally*

A 38 year old woman, from a family that could have afforded the RIG, died following a dog bite in Shimla district in 2009. She had received a full course of rabies vaccine, but was not prescribed RIGs as it was not available either in the hospital, or in chemist shops.

Recently, a woman tourist died in Delhi when she was bitten by a stray dog in Manali, a tourist town in Himachal Pradesh. She was given a full course of vaccine IM (intra-muscularly) but not immunoglobulins, as they were not available.

In another case that was referred to IG Medical College from a distant civil hospital a 32 years old male who was bitten on the lower lip by a suspected rabid dog on September 5, 2014 developed rabies within 2 weeks of bite. He was given all doses of rabies vaccine IM but RIGs were not available in the market. He succumbed to the disease later in the medical college.

Local medics are also frustrated as Post Graduate Students of Tanda Medical Collage Kangra could not find RIG for themselves after they were bitten by a suspect rabid dog.

Due to the scarcity, we at DDU hospital and the medical college here are now left with no option but to experimentally give RIGs only locally in the wound, as limited quantities of RIGs are being made available from the government Central Research Institute in Kasauli for this purpose. We are following such patients and no deaths have been reported after three months of follow-up even in patients bitten by suspected rabid animals. The follow up will continue for one year and results will be shared on a wider scale so as to make RIGs affordable for poor patients and available in situations of scarcity.

*Submitted by Dr. Omesh Kumar Bharti, an Epidemiologist and Corporation Health Officer in Shimla, Himachal Pradesh, India. A presentation by Dr Bharti on this subject is available [here](#).*

*...Assessing Impacts continued from page 5.*

population. They also suggested that education had resulted in less fear of roaming dogs and rabies. When asked about dog population management going forwards, no community groups mentioned culling as an appropriate strategy, instead preferring sterilization, vaccination and education.

The animal welfare assessment took into consideration the distress cause by each aspect of the control programmes (culling, vaccination, dog catching nets, sterilization etc), and the number of dogs subjected to each. Overall the intervention was deemed to have a low-intermediate animal welfare impact, compared to the intermediate-high impact of the baseline situation. A more qualitative ethical assessment considered aspects of rights, fairness and virtue.

Although the reporting of non-monetary outcome makes traditional cost-benefit calculations more difficult, the authors argue that this approach has important implications for rabies control strategies, given that the acceptability of control programmes is critical to community participation and therefore their chances of success.

*Summarised by Louise Taylor, based on "A One Health Framework for the Evaluation of Rabies Control Programmes: A Case Study from Colombo City, Sri Lanka" published by Barbara Häslér et al. in October 2014 (PLoS Negl Trop Dis 8(10): e3270. doi:10.1371)*

# The World Organisation for Animal Health (OIE) unveils new tools to support the fight against rabies

Rabies is everyone’s concern: the World Organisation for Animal Health (OIE) has launched a new web portal and an interactive infographic on rabies to raise awareness on the disease and to encourage the mobilisation of the international community around this cause.

What is rabies? How can it be controlled? How can we react? A wide range of answers can now be found on the new [rabies web portal](#) which the OIE uploaded on the occasion of the World Rabies Day 2014. This platform brings together a wealth of information on rabies and on action taken worldwide to combat the disease including the new concept of regional vaccine bank. It does not only contain technical information, but also a whole page devoted to OIE’s communication tools, including disease information summaries, educational material, videos and statements.

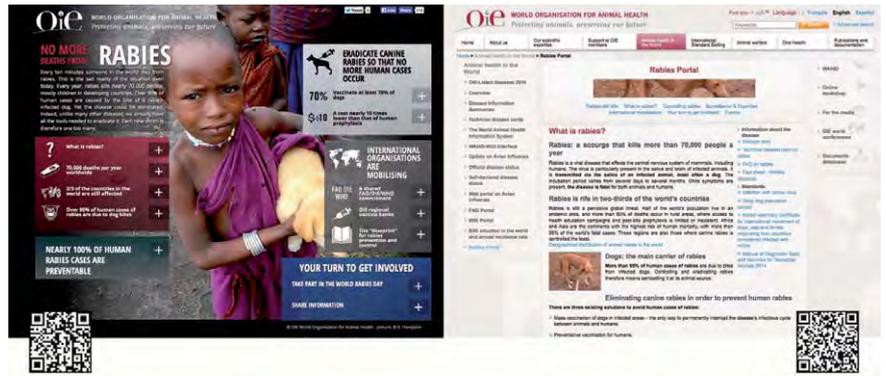
This platform notably displays the new OIE’s [interactive infographic on rabies](#), a very useful device to better know, understand, and combat the disease. Through it, the OIE recalls key facts on rabies and gives access to various documents and links. It is available in [English](#), [French](#), [Spanish](#) and [Russian](#).

These new tools address a broad audience and the OIE encourages it to use and disseminate them as widely as possible, since everyone has their contribution to make to the global fight against rabies.

*“In addition to the OIE’s missions of setting standards and promoting international solidarity in order to prevent and control rabies, it is essential to inform populations on the ravages brought about by this devastating disease,” stresses Dr. Bernard Vallat, Director General of the OIE. “Rabies is a disease that is all too often under-estimated, and it is urgent for all to become aware of the fact that there are solutions. Vaccinating 70% of dogs in risk areas would make it possible to eliminate rabies in humans. Every ten minutes, somebody somewhere in the world dies of rabies. Each year, rabies claims around 70,000 human victims, mainly children in developing countries. However, rabies can be eliminated. That is why, today, every rabies victim is one victim too many.”*

OIE and GARC have been working together for years, particularly on global human canine-mediated rabies elimination and the development of regional rabies control and elimination strategies, including dog vaccination campaigns and demographic control of dog populations. They signed a [cooperation agreement](#) in September 2014 to pursue and strengthen their collaboration in the future.

Contributed by the Communication Unit at OIE. Please share the link to the new infographic (<http://www.oie.int/infographic/rabies/>) or integrate it into your website (`<iframe src="http://www.oie.int/infographic/rabies/" border="0" scrolling="yes" height="650" width="600" frameborder="0"></iframe>`).



## Recent Research Papers

Here we aim to list recent research papers most relevant to GARC’s mission.

### General reviews

[Rabies control and elimination: a test case for One Health.](#)

One Health approaches have successfully controlled rabies in different parts of the world. Integrated strategies are needed to enhance the cost effectiveness of measures to control and eliminate rabies, particularly in low-income countries.

[Human rabies deaths in Africa: breaking the cycle of indifference.](#)

Rabies victims die because of neglect and ignorance, because they are not aware of these life-saving biologicals, or because they cannot access them or do not have the money to pay for them. Breaking the cycle of indifference of rabies deaths in humans in Africa should be a priority of governments, international organizations and all stakeholders.

[Infectious Disease. Implementing Pasteur’s vision for rabies elimination.](#)

Increasing evidence shows that global canine rabies elimination is a feasible goal, but it will take intersectoral collaboration, political will and funding to make this a reality.

### Mass Dog Vaccination

[Achieving population-level immunity to rabies in free-roaming dogs in Africa and Asia.](#)

The vast majority of freer-roaming dogs studied in South Africa and Indonesia seroconverted but with considerable variation in titres, partly attributable to illness and lactation. Attaining >70% coverage in these settings is feasible, but attrition of immune individuals necessitates repeat vaccination of populations within at least two years to ensure community protection from rabies.

Continued on page 9...

...Recent Research continued from page 8.

[A one health framework for the evaluation of rabies control programmes: a case study from Colombo city, Sri Lanka.](#)

A One Health framework is used to assess the value of rabies interventions in Colombo City, Sri Lanka. The methods include utilize, epidemiological, economic, animal welfare, societal and ethical measure to assess the impacts of a change in rabies control practices.

**Human Post Exposure Prophylaxis**

[The Abbreviated Intramuscular Schedules for Rabies Vaccination: Zagreb regimen.](#)

Compared to the Essen regimen for intramuscular administration of Post exposure prophylaxis, the Zagreb regimen has higher compliance, lower medical cost and better immunogenicity at an early stage.

[Rabies Postexposure Consultations in New Zealand from 1998 to 2012.](#)

Few returning travelers had had pre-travel immunization, and only 20.3% of them had received WHO-advised postexposure management whilst abroad. Thus, 79.7% of the cohort theoretically remained at risk for contracting rabies because of inappropriate management following possible exposure to the disease.

[Human Rabies Post-Exposure Prophylaxis and Animal Rabies in Ontario, Canada, 2001-2012.](#)

Rabies cases in animals decreased from 2001 to 2012, but the expected concomitant decrease in the number of rabies post-exposure prophylaxis (RPEP) administered failed to occur. Recent guidelines could be revised to more effectively target high-risk exposures and reduce RPEP use where the risk of rabies virus exposure is exceedingly low.

**Wildlife Rabies**

[Rabies and rabies virus in wildlife in mainland China, 1990-2013.](#)

All wildlife-originated RABVs were found to belong to genotype 1 RABV except for a bat-originated Irkut virus isolated in 2012. Chinese ferret badger, and raccoon dog isolates were distinct from local dog-originated RABVs, and suggest the possibility of wildlife reservoirs in mainland China through the ages.

**Surveillance**

[Twelve years of rabies surveillance in Sri Lanka, 1999-2010.](#)

The number of rabid dogs has remained relatively unchanged, but the number of suspect human rabies is decreasing, indicating successful use of free PEP and increased rabies awareness. Transportation of samples to laboratories is limiting effective surveillance and better rabies surveillance will require the introduction of molecular methods and the establishment of more regional rabies diagnostic laboratories.

[Comparison of biotinylated monoclonal and polyclonal antibodies in an evaluation of a direct rapid immunohistochemical test for the routine diagnosis of rabies in southern Africa.](#)

A comparison of the dRIT protocol using biotinylated polyclonal antibody (PAb) preparation and the classical two monoclonal antibodies. Whilst the PAb dRIT had a diagnostic sensitivity and specificity of 100%, marginally higher than that obtained in the Direct Fluorescent Antibody test, the classical dRIT produced false negative results on samples with mongoose RABV variants. Antibody preparation should be optimized for the geographical area of focus.

**Upcoming Conferences and Events**

*Thanks to all the students participating in the Global One Health Challenge and competing for the trip to Spain. Don't forget - the closing date for entries is November 30th. For the entry form and guidelines, please visit <http://rabiesalliance.org/world-rabies-day/global-one-health-challenge/>*

The 2014 International Society for Disease Surveillance Conference will be held 9-11th December in Philadelphia, USA. Further details are available [here](#).

The 2nd International Conference on Dog Population Management 2015 will be held in Istanbul, 3-5 March 2015. <http://www.dogpopulationmanagement2015.org>

The 3rd International One Health Congress, to be held 15-18 March 2015 in Amsterdam, The Netherlands, will have the theme **PREVENTION AT THE SOURCE**. Further details are

available at <http://isvee2015.org>

The editor of the GARC newsletter is Louise Taylor, and typesetting is by Pete Else. You can contact Louise 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).