



# RABID BYTES

The Newsletter of  
The Alliance for Rabies Control

Issue 2 February 2007

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## Editorial

Welcome to the second issue of 'Rabid Bytes'! The global response to our first Newsletter was very positive and we are pleased to see the many requests coming through our website to be added to our mailing list. This is indeed good news and we encourage all of you to continue to forward the Newsletter to all of your friends and colleagues around the world.

Education is clearly the key to preventing human rabies. Whether it is providing detailed education at a basic research level to scientists or providing education to the general public as to the epidemiology of rabies, proper wound management, and responsible pet ownership, all levels of the dissemination of knowledge are important. Each one of us then, has a part to play in the global dissemination of rabies information. By taking the opportunity to tell a friend, colleague, or neighbour about

rabies, we will increase the visibility of this terrible disease and surely save human lives in the process. With this idea in mind, we invite each of you to send us your own new and relevant information about rabies from your laboratory, country and region. Additionally, as part of our own expanded educational program, we are happy to announce that this and future issues of Rabid Bytes will be available in French thanks to the translation efforts of Dr Eric Fèvre, a Board Member of ARC.

In this issue, you will find rabies information from our rabies colleagues in Iran, South Africa, Ethiopia, Tanzania and the Ivory Coast. We are also pleased to provide information to you from Dr Ray Butcher, a Board Member of The Blue Dog Trust and ARC on a new educational tool for children, promoting responsible pet ownership. I look forward to hearing from you soon, best wishes to all of you!

Deborah J Briggs, Executive Director, ARC

## World Rabies Day, 8<sup>th</sup> September 2007

The Alliance is supporting the initiative to declare the first Annual World Rabies Day, scheduled for September 8<sup>th</sup> 2007. The goal of this unique effort is to increase the awareness of the continuing global burden of rabies by involving 55,000 participants in various activities and events across the world. Each participant will represent one person who dies unnecessarily from rabies each year.

The objectives of WORLD RABIES DAY are to increase global awareness about rabies prevention and control, the scale of the rabies tragedy and the feasibility of preventing and controlling the disease in both humans and animals.

There are many events that are currently in the planning stages across the world including a global 'Run for Rabies' to be staged at various Colleges of Veterinary Medicine across the world, a 'Rock and Roll for Rabies Control' Concert in Bangkok, a 'Walk for Rabies' in Karachi, Pakistan, and a Swimathon in the Philippines. Indeed, there are events being coordinated to increase rabies awareness on every continent!

Support from partners and corporate sponsors has been enthusiastic, with financial commitments already received from Sanofi Pasteur and Berna Biotech and



others in process.

The Centres for Disease Control and Prevention in the US, The Pasteur Institute, WSPA and others are partnering with ARC to make this event truly a global success. The proposal to declare a World Rabies Day will be officially submitted to the 168 Member States of the OIE and the OIE Administration Commission during their Annual meeting to be held in Paris,

France in May of this year.

As a member of the international community, we urge you to join forces with us to make a difference in rabies awareness and prevention across the world by planning an event, educating a friend about rabies, donating your expertise and/or funding to help support this worthwhile cause. The new logo for WRD was designed by the team at CDC and is available in many languages. Please contact us for more information about receiving the logo in your language!

A dedicated website, [www.worldrabiesday.org](http://www.worldrabiesday.org) is now active or you can contact [info@worldrabiesday.org](mailto:info@worldrabiesday.org) for more information. Please start spreading the word about World Rabies Day! Together, we can stop the ongoing tragedy of rabies.

## Cerebral Malaria Cases may be Rabies

Rabies has been confirmed as the cause of at least 10% of encephalitic deaths in children, a recent study from Malawi has reported. At the Queen Elizabeth Central Hospital in Blantyre, Dr Mallewa and his colleagues investigated 133 cases of fatal brain infection in children between 2 months and 3 years of age. On the basis of clinical symptoms, 58 were diagnosed as dying of cerebral malaria infection, and 10 were diagnosed as dying from rabies. Where permission was received (29 deaths, including 26 due to cerebral malaria), post mortem



Photo: Dr BJ Mahendra

examination of brain tissue was conducted. The results indicated that an additional four patients had in fact died of rabies, giving a total of 14 deaths due to rabies out of the 133. Three of these

were originally attributed to cerebral malaria and one was attributed to meningitis. The findings indicate that patients were frequently infected with more than one agent upon admission to hospital, and that the symptoms of rabies may be modified by other infections leading to misdiagnosis. Overall, the study suggested that around 11% (in this study, 3 out of 26) of deaths that are currently diagnosed as cerebral malaria may in fact be attributed to rabies. The implications of this study are profound and imply that in regions of the world where malaria and canine rabies co-exist, the disease burden of rabies is a significantly greater problem than previously realized. The study should also alert medical professionals to consider rabies as a differential diagnoses for patients succumbing to encephalitis in rabies endemic regions of the world

The study was published in the January edition of the journal *Emerging Infectious Diseases* and can be downloaded from:

<http://www.cdc.gov/ncidod/EID/13/1/136.htm>

## Rabies in Iran

In Iran, rabies continues to be a major public health problem and all of Iran's provinces are affected (see map). Both dog and sylvatic rabies occur but dog rabies tends to be concentrated in urban areas, whereas sylvatic rabies in foxes, jackals and wolves (pictured) occurs in more rural regions. A 5-year dog rabies vaccination and control programme has eliminated canine rabies in the capital city of Tehran, but similar programmes in other areas have been less successful.

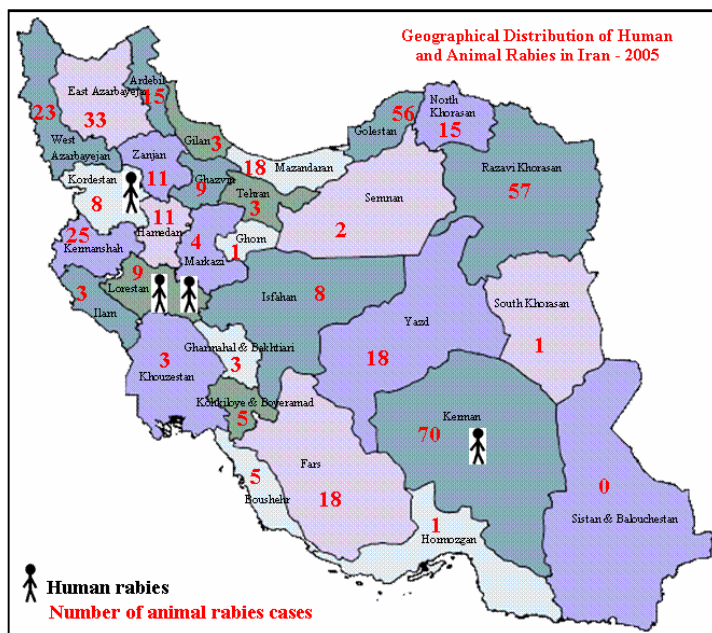
Three hundred human rabies treatment centres operate throughout Iran, mainly carrying out post-exposure prophylaxis, and all are stocked with cell culture vaccine and Human Rabies Immunoglobulin (HRIG). Cell culture vaccine is the safest rabies vaccine currently available and immunoglobulin provides immediate passive immunity at



the site of the bite to help to neutralize any rabies virus that could have been inoculated at the wound, see:

<http://www.who.int/immunization/topics/rabies/en/index.html>

The provision of post-exposure prophylaxis has had the biggest single impact on reducing the number of human rabies deaths in the country. In 2005, 122,212 people were treated after exposure to suspected rabid animals of which 9,624 received



both HRIG and vaccine. Four deaths of exposed but untreated patients were reported.

We thank Dr. Ahmed Fayaz, who is the Director of the World Health Organization Collaborating Centre for Reference & Research on Rabies at the Pasteur Institute of Iran, Tehran, Iran, for supplying this valuable information. The Pasteur Institute in Iran has a long history of rabies research, including the first field trial for cell culture rabies vaccines.

## Blue Dog CD-ROM launched

Sadly, dog bite injuries in people are very common, and children are twice as likely to be bitten as adults. Children are also more likely to sustain severe injuries, especially to the neck and face. Usually these injuries to children occur in their own home, and are due to an unsupervised child initiating an interaction with a familiar dog. There is no evidence that any particular breed is more dangerous (or indeed safer) than any other. One solution to the problem is to teach young children (aged 3 to 6), and their parents, how to behave appropriately towards their dog. The challenge has been to find a tool that is appropriate and effective.

The Blue Dog is an interactive CD-ROM that children find fun to use and when guided by a teacher or parent, they can learn important lessons. A diverse set of experts including veterinarians, behaviour specialists, paediatricians, child psychologists, teachers and graphic designers have contributed to this exciting and unique project. The CD-ROM's value as a learning tool in children of the target age group has been scientifically assessed by Dr Kerstin Meints and her team from the InfantLab, Child Psychology Department, University of Lincoln, with very encouraging results. It is currently available in

english, and translation to several other languages is underway. For more information, see:

[www.thebluedog.org](http://www.thebluedog.org).

The project is managed by the BLUE DOG TRUST, and any

financial surplus will be used to fund further research. While the current CD-ROM is aimed at families in developed countries, it is likely that the education approach will work anywhere in the world. The challenge is to identify the factors that trigger bite injuries in different cultures and to develop the most appropriate educational tools. Hopefully future research in this area will result in similarly effective products.



Contributed by Ray Butcher, a veterinarian at the Wylie Veterinary Centre near London, UK, a veterinary advisor to the World Society for the Protection of Animals (WSPA), and a board member of both the Blue Dog Trust and ARC.

## Protecting Endangered Ethiopian Wolves from Rabies



This piece was contributed by Karen Laursen, of the University of Edinburgh, and the Frankfurt Zoological Society. Karen is a board member of ARC.

Rabies is a well recognised scourge in rural and urban areas of Ethiopia, where its incidence in humans is one of the highest in Africa. Livestock deaths (including cattle, horses and donkeys) caused by rabies contribute to already high poverty levels. Rabies is also the most immediate threat to the endangered Ethiopian wolf, the world's rarest canid, with only 500 individuals remaining. Ethiopian wolves live only in the high-altitude grasslands of Ethiopia, with the largest population found in the Bale Mountains in the south-west. Although fox-like in appearance, the Ethiopian wolf is more closely related to grey wolves, and thus domestic dogs. Like other wolves, they live in packs of two to 13 adults, and all pack members cooperate to raise young and patrol boundaries, but unlike wolves they hunt alone. Wolves contract rabies from exposures to domestic dogs living in or near wolf populations. At least three outbreaks of rabies among the Bale Ethiopian wolves have occurred during the last 14 years, causing up to 70 percent mortality. The wolves can be indirectly protected against rabies by vaccination of domestic dogs by injection, but dogs in Ethiopia are difficult to handle, and this can be logistically difficult, time consuming and costly.

A study is currently being conducted by researchers at the University of Edinburgh and the Ethiopian Agricultural Research Institute, lead by Dr Karen Laursen, to determine the feasibility and costs of using oral vaccines in both dogs and wolves. The project is comparing dog vaccination strategies in different cultural and demographic settings in Ethiopia through a fully replicated, randomised experiment. Bait trials using placebo vaccines are also being conducted in Ethiopian wolves, to determine whether wolves will take oral vaccines, and if so, whether coverage levels are sufficient to reduce the probability of extinction in the wolf population as a whole. The work should determine the most cost-effective method of protecting dogs, humans and Ethiopian wolves from the threat of disease in this country. The Ethiopian wolf conservation project's website is: <http://www.ethiopianwolf.org>.

## A National Rabies Control Strategy for Tanzania

A workshop was held in Morogoro, Tanzania in December 2006 to formulate a national strategy for rabies control in Tanzania. Over the past 15 years, Tanzania has been a focal country for rabies research in Africa, with active collaborations between medical, veterinary and wildlife sectors. A substantial body of research data has now been generated on rabies epidemiology, dog vaccination strategies and rabies surveillance, which indicate that elimination of canine rabies in Tanzania is a realistic goal.

The workshop was hosted by the Ministry of Livestock Development and involved participants from the Ministry of Health, Ministry of Natural Resources and Tourism, Ministry of Regional Administration and Local Governments and research institutes, including the National Institute of Medical Research, Tanzania Wildlife Research Institute, and Sokoine University of Agriculture. Overseas participants included scientists from Edinburgh University, UK and Princeton University, USA.

During the two-day workshop, research findings were presented and working groups (pictured) convened to

address planning of dog vaccination campaigns, provision of human post-exposure prophylaxis and financing of the strategy. The draft document is now undergoing final editing before being circulated to potential donor agencies for funding.



This piece was contributed by Sarah Cleaveland of the University of Edinburgh who has been involved in rabies control in Tanzania for over 10 years, and is a board member of ARC

## A Personal view from Sebastien Kigou

As an Information Systems graduate, I joined the rabies program at CDC in Atlanta, Georgia, USA in September 2006 to help with electronic data management. While I was working on data and databases, I learned about rabies and its impact on humans, domestic animals, and wildlife. Moreover, I was impressed by the scientific and technological infrastructures set forth to monitor, control, and fight the disease effectively. Meanwhile, I couldn't help but think about what was happening in my home country of Ivory Coast, West Africa. My mind was constantly wandering around the avenues of Abidjan and those of the rural areas where sick dogs walked the streets. Many sick

dogs are living in the streets. In the rural areas almost every family has a dog which in most cases is not vaccinated. So far, I have mentioned only dogs. What about wild animals coming in contact with cultivators everyday? In Ivory Coast, more than 90% of the rural population depend on agriculture. Then, I realized how these populations were exposed and endangered. Yet, I haven't heard of any rabies campaign, animal mass vaccination, or strategic rabies eradication policy since I left Ivory Coast. If records on rabies patients are available, they would be largely underestimated because data sources lack reliability and consistency. Rabies is indeed a neglected threat in this part of the world. Up until now, the situation in Ivory Coast is very similar to most West African Countries'. In some countries it may be worse.

Nonetheless, I am very optimistic. The Alliance for Rabies Control (ARC) has made it clear that "the tools for effective rabies control are available – what is lacking is the motivation, commitment, and resources" to lessen the burden of rabies on humans and animals. I am more than pleased to be part of this journey with ARC to fight rabies in Africa and in Asia. Together, we can tackle rabies.

Sebastien is a Guest Researcher and Data Management Specialist in the Rabies Team at the Centres for Disease Control, Atlanta, USA



## The Reality of Rabies

The following account was contributed by Lucille Blumberg who is Head of the Special Pathogens and Epidemiology Units National Institute for Communicable Diseases Johannesburg, South Africa.

An outbreak of human rabies was reported from a rural area in the Limpopo Province of South Africa in the period August 2005- June 2006. Over this period 27 cases were reported, the majority in young children. Eighteen cases were laboratory confirmed and all resulted from exposures to dogs. The outbreak occurred in an area where rabies is endemic in jackals. A recent upsurge in dog related rabies had been noted, but no laboratory confirmed human cases had been reported in

the preceding 18 years.

Following confirmation of rabies as the cause of illness in a 'cluster of children with fatal encephalitis', an intensive community education campaign was launched, together with a post exposure treatment programme to manage human victims and institution of an extensive dog vaccination programme.

One of the victims was a 3 year old child who lived in a remote village, was licked on the face by his own puppy, and died of rabies 3 weeks later. Category 3 exposures involving mucous membrane licks are often not perceived as a risk for rabies, either by the community or health professionals, and post exposure treatment may not be sought. Rabies is also frequently not considered as a risk from one's own puppy.

## ARC Edinburgh Launch

On the 27<sup>th</sup> January, ARC held a reception in Edinburgh to raise the profile of rabies and the work of the charity. Amongst the guests were Alexander McCall Smith, our Patron and author of the series "The No.1 Ladies' Detective Agency", and Nigel Griffiths, the local member of parliament (both pictured with Deborah Briggs). Several other representatives from the scientific and political community attended and the response to the establishment of ARC was very enthusiastic. Many guests attending the reception indicated that they were unaware of the ongoing tragedy of rabies across the rest of world and expressed interest to help where possible to increase the visibility of ARC and to promote their programs.



## ARC joins WSPA



The Alliance for Rabies Control has officially joined the membership of the World Society for the Protection of Animals (WSPA). WSPA focuses on issues affecting the individual animal and believes that protecting animals involves the prevention of unnecessary suffering, ensuring a good quality of life or a humane death based around the five freedoms. We look forward to working with WSPA in the coordination of WRD and other rabies-related issues throughout the world. WSPA's website is: <http://www.wspa-international.org>

## Upcoming meetings

The First Scientific Meeting Of Rabies In Asia (RIA) Foundation, RIACON 2007 is scheduled for March 3-4, 2007 and will be held in Bangalore, India. Details are available at <http://www.rabiesinasia.org/progsch.htm>

The OIE Conference entitled "Towards the Elimination of Rabies in Eurasia" is being held at the OIE headquarters in Paris, May 27-30<sup>th</sup> 2007. More information is available at <http://www.oie.int/eng/rabies2007>

The Rabies in the Americas Conference (RITA) will be convened in Leon, Mexico east of Guadalajara in central Mexico from October 22-26/07. Details should be available soon at <http://www.rabies-in-the-americas.org>

If you have any news items or information of interest to those wanting to reduce the burden of suffering of rabies, then please contribute to this newsletter. The Editor-in-chief of the ARC

newsletter is Louise Taylor who can be contacted via [arc@rabiescontrol.org](mailto:arc@rabiescontrol.org). For detailed information on the work of ARC, please see our website: [www.rabiescontrol.org](http://www.rabiescontrol.org).