



RABID BYTES

The Newsletter of
The Alliance for Rabies Control

Issue 5 November 2007

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Editorial

This edition of Rabid Bytes provides several stories about rabies across the world including a small glimpse into some of the events held to celebrate the first World Rabies Day on September 8, 2007.

We are still in the process of collecting information and urge all of you who have not yet completed the report form to do so as soon as possible so that we can include all of the data from every event held in association with WRD: http://www.worldrabiesday.org/event_feedbackform_en.php

Once we compile these data, we will be sending a final report to each of you and will also post the report on our website. Our WRD team will be using the collected data to approach new partners and sponsors and encourage them to join us for WRD 2008. To date, from the data we have already received and compiled on the global involvement for WRD 2007, 74 countries held events, 1.5 million people across the world were educated about rabies prevention and 270,000 animals received rabies vaccination! These

numbers will definitely increase as more reports from individual events are forwarded to us.

The entire WRD team wishes to congratulate everyone that organized or was involved in an event for WRD and we look forward to your continued involvement in 2008. Clearly, by working together we have made a significant impact on the level of global awareness of rabies and how to prevent this horrific disease.

Other articles in this newsletter include information on the devastating effect of an outbreak of rabies on the wild dog population in Zimbabwe, an interesting look into the past history of rabies in Edinburgh, and a summary of a newly published article on human rabies contracted through transplanted organs. Once again, each one of you reading this month's Newsletter is invited to submit a short article to share your rabies experiences and research with all of our colleagues and friends across the world.

Best wishes, Deborah J Briggs, Executive Director, ARC

Rabies in African Wild Dogs

The Malilangwe hills in southeastern Zimbabwe were said to be a 'Mecca' for wild dogs (*Lycaon pictus*) during the 1940's, but during the early 1950's a severe outbreak of rabies was reported in domestic dogs, and soon after the wild dogs disappeared from Malilangwe. In 1994 the Malilangwe Conservation Trust was established protecting the 400 km² wildlife area and the past 12 years have seen a return of wild dogs to the region. Stray domestic dogs seen on the property were routinely destroyed and a number of these tested positive for rabies. Efforts to protect wildlife from diseases transmitted between domestic and wild animals are becoming increasingly difficult as veterinary controls deteriorate, and as human pressure increases along the boundaries of wildlife reserves.

Between 27 March and 2 June 2007 the wild dog population of Malilangwe was decimated by another outbreak of rabies. Of the 75 individuals known to frequent the private game reserve which abuts Gonarezhou National Park, only two survived. The survivors were adult males from separate packs of 19 and 21 animals each. These two packs were resident on the reserve. No survivors from the largest pack (35) which moved between Gonarezhou National Park and Malilangwe have been reported.

One of the decimated packs (originally 21 animals) had been closely monitored by wildlife cinematographer Kim Wolhuter. This pack was comfortable around Kim's vehicle so it was possible to monitor and vaccinate 19 animals once rabies had been confirmed in the pack and two dogs had succumbed. Wild dogs were vaccinated from the vehicle using drop-out darts and were given a booster 7 days after the initial vaccination. It was possible to keep the dogs near the vehicle by providing two fresh impala carcasses. Dogs affected by rabies tried to feed but their efforts were largely unsuccessful as they appeared to have difficulty swallowing. These animals had the same problem when attempting to drink, and interestingly, they showed no fear of water and were even seen bathing. Other clinical signs of infection included biting branches, repeated rolling, running the side of the mouth along the ground as if trying to remove something, pawing at an open mouth, and non-aggressive nipping of other individuals, especially while resting. During the late stage of infection their stomachs were clearly withdrawn and they were weak and wobbly. Excessive or frothy saliva was not noted and the dogs were not aggressive. Despite management's efforts to save a core population of wild dogs, all but two animals succumbed. One of the surviving animals had been fitted with a radio collar and vaccinated at the same time - 12 days earlier than the rest of the pack. This early inoculation may have been the reason he survived.



This piece was contributed by Sarah Clegg, consulting ecologist to Malilangwe Trust and Kim Wolhuter, a wildlife photographer and filmmaker who runs Wolhuter Media. Malilangwe rabies video clips are available on www.wildcast.net in the archive for May 2007.

A Historical Account of Rabies in Edinburgh

Attitudes to rabies in the United Kingdom are inevitably determined by the many years of freedom from this disease that we have enjoyed. However, by 1874 human deaths from rabies in Britain had reached a peak of 74 per year. In 1850, three human deaths were recorded in the Edinburgh area. One of these was presented to the Medico-Chirurgical Society of Edinburgh by Dr James Struthers.

An eight year old boy, John Weston, had been bitten on the right eye-brow by a dog. Struthers saw him within an hour and a half and described his treatment. "There being reason to believe that the dog was mad at the time of the accident, I resolved to destroy the bitten parts as speedily as possible. The patient, being much frightened and very unruly, was put under the influence of chloroform. The two wounds were laid into one, the lacerated parts excised, and the whole of the raw surface carefully cauterised, first with the nitrate of silver and then with the pernitrate of mercury"

The wound healed and the boy remained well until 27 days after the accident when Struthers was called at 2am. "I found him sitting in bed in his father's arms. He was restless and fidgety, never keeping the same posture for a minute at a time. His look was quite peculiar and expressive of profound dread. His pulse was 112, rather weak and remarkably irregular. While holding his hand I blew suddenly on his face when he sprang, convulsed, to the other side of the bed, covered himself with the clothes, shook and cried very much and beseeched me not to breathe upon him any more. This established the diagnosis."

Struther's detailed description of the remaining fifty hours of the boy's life is extremely harrowing. There was "constant spasmodic movement and jerking of the limbs and every two or three minutes there occurred a fit of general convulsions..... the countenance was distressed... He was perfectly sensible [conscious] and knew and named those around him". Struthers ends this account with the words, "He expired calmly", probably from exhaustion, dehydration and respiratory failure.

The treatments prescribed over the symptomatic period were laudanum (tincture of opium), tincture of cannabis and muriate of morphia (morphine hydrochloride) by suppositories. Little imagination is needed to visualise the circumstances of this 19th century death of a child. The child was treated (with every therapeutic measure available to the physician) and died at home. If such a situation arose in Edinburgh now, 150 years on, the therapeutic measures would be more effective in alleviating suffering, but the outcome would be almost certainly the same.

This article was contributed by Dr David HA Boyd, MD FRCPEd. Retired consultant physician, based upon the original article published in the Monthly Journal of Medical Sciences Edinburgh. 1851, Vol 12, p9-15.

Inaugural World Rabies Day – History in the Making!

The inaugural World Rabies Day on September 8, 2007 was celebrated globally as a great success and an important step forward for rabies prevention and control. As a founding partner, Alliance for Rabies Control was proud to spearhead this effort with tremendous partnership from numerous international leaders in the field of rabies: the US Centers for Disease Control and Prevention (CDC), World Health Organization (WHO) and their regional offices and collaborating centers, World Organization for Animal Health (OIE) and their collaborating centers, the Pasteur Institute, Canadian Food and Inspection Agency, World Society for the Protection of Animals, World Veterinary Association, Commonwealth Veterinary Association, American Association of Veterinary Medicine and its associated Student Association of Veterinary Medicine, British Veterinary Association, University partners, and numerous other veterinary medical and student veterinary medical associations around the world.

The participation of so many veterinary students around the world is an important step in ensuring that our future veterinarians are educated on the significant impact and role they play in rabies prevention and control, while hopefully empowering them towards this cause" said Dr. Deborah Briggs, Executive Director for ARC.

The Alliance for Rabies Control is particularly appreciative towards the countless World Rabies Day event coordinators around the world. "It truly was the tremendous effort of our partners 'on the ground' who made this campaign happen," says Peter Costa, Global Communications Coordinator for ARC. "For example, some event coordinators, like Dr. Garg in India, educated 100,000+ people in their efforts and the Pan-American Health Organization (PAHO) worked to coordinate activities in at least 15 countries, including Brazil's donation of 800,000

doses of canine vaccine to assist rabies prevention in Haiti as they reinitiated their national rabies control program. It was the global network of individuals who made this campaign a huge success."

To thoroughly evaluate the success of World Rabies Day, a feedback form is posted on the web. The information gathered here will help guide the campaign for 2008 and in future years. **Please help us evaluate the campaign by filling out the information on you local event:** http://www.worldrabiesday.org/event_feedbackform_en.php.

This piece was contributed by the WRD communications team: Peter Costa, ARC and Abbigail Tumpey, CDC.



World Rabies Day in Pictures

These pictures represent a small selection of the events carried out, but we hope demonstrate the diversity of events and the number of participants around the world.



Participants in a rabies awareness march in Dinsho, Ethiopia

A march organised by the Ethiopian Wolf Conservation Programme took over the high street in Dinsho and chanted slogans such as "Down with Rabies" and "Vaccinate Me". Posters were also distributed to onlookers. Photo: Dr. Graham Hemson



Start of a bike race, Tanzania

Competitors raced for 50km in the Bariadi District of northern Tanzania. Photo: Serengeti Carnivore Disease Project



Hike for Rabies in Colorado, USA

Organised by the U.S. Department of Agriculture, APHIS Wildlife Services. Photo: Gail Keirn

▲ **Student nurses march in Thailand**
In Pisanuloke, Thailand a rabies awareness day was opened by the governor. Over 200 nursing students, 500 health volunteers and others were involved and events included dog shows from the army, dog vaccinations, games and poster presentations. Photo: Dr Thavatchai Kamoltham



Veterinary medicine students offer free vaccinations.

For 2 weeks before WRD, rabies vaccinations for dogs and cats were offered by veterinary medicine students and their teachers near the campus of Don Mariano Marcos Memorial State University, La Union, Philippines. More than 300 dogs and cats were vaccinated. Photo: Dr Ebenezer Burgonio



▲ **School children learning about rabies. Hisar, India.**
Photo: S.R. Garg



Rabies education in Balsas, Maranhão, Brazil.

Campaigners, on foot and on bicycle, handed out information to the general public. Photo: Dr. Yuri Pedrosa

Awareness walk in Pakistan

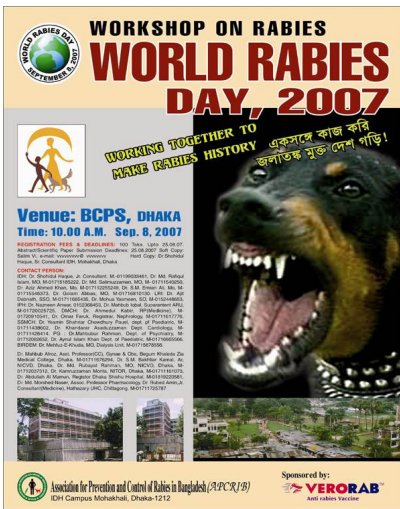
In Karachi a large crowd gathered at the Quaid's Mazar at 9am and walked towards Purani Numaish. A few hundred schoolchildren, their parents and teachers, as well as doctors and their families held banners, posters and balloons and distributed thousands of flyers to passers-by. Speakers extolled the importance of wound washing and proper Post Exposure Prophylaxis. Photo: Naseem Salahuddin



Vaccination after a small group discussions on rabies in Mufumbwe, Zambia.

The department of Veterinary and Livestock Development has embarked on raising community awareness of rabies through small group meetings, teachings, short video clips on rabies and vaccination of dogs and cats. Photo: Dr Perfecto B. Kabanshi





WORKSHOP ON RABIES
WORLD RABIES DAY, 2007

WORKING TOGETHER TO MAKE RABIES HISTORY
একসাথে কাজ করি জনগোষ্ঠীকে মুক্ত দেশে পরিভূক্ত করি

Venue: BCPS, DHAKA
Time: 10.00 A.M. Sep. 8, 2007

Association for Prevention & Control of Rabies in Bangladesh (APCRIB)

◀ **A seminar in Dhaka, Bangladesh**
The Association for Prevention & Control of Rabies In Bangladesh (APCRIB) and the Director General of Health Services organised a scientific seminar to mark the occasion. Awareness of the seriousness of rabies among medical doctors, the veterinary community and the general public was raised. The Honorable Advisor to Health and Family Welfare was chief guest and the WHO Representative a special guest. Photo: Dr M Salim Uzzaman



▲ **Walkers in Bicol, Philippines**
Over 400 pet owners joined the event in Naga City. Activities included a poster contest participated in by elementary and high school students, a fun dog walk with 60 canine participants, dog vaccinations, grooming and castration. A total of 220 dogs were vaccinated, 98 dewormed, 79 were groomed and 15 castrated. Photo: Dr Rona P. Bernales

▶ **Puppet show, Jodhpur, India**
To educate children about rabies organised by the Marwar Trust in Jodhpur, India. Photo: Bishan Shukla



▶ **Students of the Indira Gandhi Medical College walk in Shimla, India**
The college also held a quiz for school students about rabies, a public speaking contest among medical students, and a poster and slogan contest about rabies was held in the town hall for the general public. Photo: Anmol Gupta



▶ **Sterilizing feral cats, USA**
Volunteer veterinarians sterilized and vaccinated 180 feral cats in Gainesville, Florida. Photo: Julie Levy

▶ **Village children adopt previously stray dogs in Sri Lanka.**
The dogs are kept at the Kandy Association for Community Protection through Animal Welfare (KACPAW) shelter for at least 6 months, vaccinated against rabies, parvovirus and distemper, dewormed and spayed. The new owners receive a vaccination record book, new chain and red collar. Spaying female dogs with owners is part of the organization's humane rabies and dog population control programme. Photo: Champa Fernando



▶ **School children attend an interactive lecture in the Philippines**
Eighty enthusiastic and inquisitive elementary school pupils attended a video presentation and interactive lecture about rabies prevention at Don Mariano Marcos Memorial State University, Bacnotan, La Union, Philippines. Photo: Dr Ebenezer Burgonio



▶ **Runners in Edinburgh, UK**
Runners reach the finish line of a course around the picturesque Arthur's seat in the city centre. Photo: Louise Taylor



▶ **5km Dog Walk Pennsylvania, USA**
Held with a Run for Rabies event in scenic Fairmont Park, organised by the University of Pennsylvania, Student Chapter of the American Veterinary Medical Association.



▶ **Pre-exposure Rabies Vaccination, Philippines**
Under the new anti-rabies law, children aged 12 and under from high incidence areas are given free pre-exposure treatment against rabies. This ceremonial inoculation is the first pre-exposure treatment given to a child following the law's implementation. Photo: Saneekan Rosamontri



Rabies transmission through organ transplants

Fifteen published deaths from rabies as a result of organ donations have been reviewed by Bronnert *et al.* in the Journal of Travel Medicine. The authors suggest that the risk of rabies following transplants may be increasing with the widespread presence of bat rabies and as more people travel to rabies-endemic countries. Older cases of organ transmitted rabies occurred through infected corneas, but the more recent cases implicate a much wider range of organs. Once rabies has entered the CNS, virus can travel outwards, eventually involving most if not all major neural and non-neural organs.

Two organ donors were recently responsible for four deaths in the USA (after liver, kidney and iliac artery transplants) and three in Germany (after lung, kidney and kidney-pancreas transplants) respectively. A recipient of a lung from the US donor died of operative complications and three further recipients in Germany survived. Of the survivors, one had detectable rabies immunity prior to the operation and corneas subsequently removed from the other two tested negative for rabies.

In the above mentioned cases, both donor patients had a history of rabies exposure (a bat bite in the USA, and a dog bite acquired in India for the German patient), which were not detected prior to transplantation. The authors point out that diagnosis of rabies can be difficult, especially in the early stages of disease. Both donors also tested positive for illegal drugs, and their neurological symptoms were wrongly attributed to drug usage.

The authors review the available techniques for detecting rabies in potential donors and their organs and conclude that currently none are 100% effective. They state that neurological symptoms in a potential donor that cannot be fully explained by other diagnoses, should exclude the patient from organ donation.

This piece was abstracted from a paper sent by Dr Henry Wilde of the Dept. of Medicine, King Chulalongkorn University Hospital, and WHO Collaborating Center for Research in Rabies, Bangkok, Thailand; Journal of Travel Medicine, 2007, vol14, p177-180.

World Rabies Day in Brazil: A Political Commitment

Commemorating World Rabies Day (WRD) in Brazil began with a letter from the Ministry of Health in Brazil requesting support for the event from the Federal Councils of Veterinary Medicine, Medicine and Nursing; the National Council of State Secretaries of Health (27); the National Council of Municipal Secretaries of Health (around 5,000); all Schools of Veterinary



Medicine in the country (130); and other political and academic institutions playing a role in health leadership in Brazil. The event was organized in coordination with the Pan American Health Organization and the agricultural sector. Many of these institutions' web pages included information about WRD and invited professionals from both health and agricultural sectors as well as the community to participate in the initiative. All 27 Brazilian States held activities related to WRD, ranging from workshops, the distribution of informational materials, press conferences, radio and TV news, and social events such as one held during the National Congress of Veterinary Medicine (attended by 1,400 veterinarians), which was dedicated to WRD.

Brazil's success in eliminating human rabies transmitted by dogs provides an example that even a large country (with 180 million inhabitants) can stamp out this dreaded disease. The incidence of dog-transmitted human rabies has dropped from 150 reported human cases 20 years ago to 6 human cases in 2006, and only a single case for 2007 (up to 20 November of this year). The government has vaccinated about 26 million dogs and cats annually and provides post-exposure prophylaxis free of charge in all municipalities, among other measures.

Contributed by Dr. Cristina Schneider of PAHO, based on an interview with Dr. Lucia Montebello, responsible for the National Rabies Program at the National Secretary of Health Surveillance, Ministry of Health, Brazil.

RITA XVIII in Mexico

The 18th Conference on Rabies In The Americas was held in Guanajuato, Mexico, September 30 – October 05, 2007. The meeting included 79 oral presentations and about 50 posters covering all aspects of rabies, including epidemiology, pathogenesis, human prophylaxis, and rabies control in different countries. A few of the conference's many highlights included: The development of a new rabies serological test eliminating the need for expensive conjugate presented by Prof Anthony Fooks from VLA, Weybridge, UK; Dr Charles Rupprecht spoke about research conducted by his team at the CDC in Atlanta on a modified live rabies vaccine in animal models that may lead to a reduced dosage rabies vaccine in the future; the identification of a new canine rabies virus variant discovered in Limpopo Province in South Africa was described by Dr Louis Nel, Pretoria, South Africa; Dr Yolande Rotivel from the Institut Pasteur, France detailed a unique pre-exposure vaccination project in the Amazon region where outbreaks of human rabies transmitted by vampire bats have occurred; and promising data from the Phase I clinical trials in humans of a monoclonal antibody cocktail was described by Dr Lex Bakker, Leiden, The Netherlands. In 2008, RITA will be held at CDC in Atlanta, Georgia, USA.



World Rabies Day September 28, 2008

The second annual World Rabies Day will be on September 28, 2008 and is expected to occur on the same date every year thereafter. The vision is to eventually have WRD endorsed by the UN as an officially recognized Observed Day. Because September 8th has already been designated by the UN as 'World Literacy Day', it was necessary to change the date for WRD. Please join us by planning an event for WRD 2008 and make this event an even bigger success next year!

Many thanks to all those people who sent us WRD reports and pictures. The editor of the ARC newsletter is Louise Taylor who can be contacted via arc@rabiescontrol.org. If you have any news items or information of interest to those wanting to reduce the burden of suffering of rabies, then please contact Louise. For information about rabies and ARC see www.rabiescontrol.org.