



RABID BYTES

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The newsletter of The Global Alliance for Rabies Control

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EDITORIAL

It is hard to imagine that our Newsletter has been in print for 6 years. Through the written contributions of our readers from across the world that are working on rabies prevention activities, the Newsletter has become a focal point for highlighting what individuals and communities are capable of when they decide to become advocates for eliminating human and animal suffering. As we come to the end of 2012, I also am also both sad and happy to announce that our dear friend and colleague Peter Costa has accepted a brand new position that has been created at Lehigh University in Pennsylvania, US. Pete will be the new Vice Provost-Student Affairs, with a remit for student health and safety issues.

There is no need for me to detail to our faithful readers all of the things that Pete has contributed over the past six years to help the Global Alliance for Rabies Control in our global efforts to increase educational awareness about how to prevent rabies. Pete's novel ideas about how to improve communications has accomplished more than anyone could ever have imagined. He has literally helped GARC to change the world of people from all walks of life living at daily risk of dying of this dreadful disease. Pete not only brought the idea of digital communication to rabies, he promoted it, lived it daily, and made it successful. He and Abbigail Tumpey from the CDC were critical in our launch of the first World Rabies Day and their vision about how the WRD initiative could change the world has all come to fruition. I am very sad to see Pete leave us but am also happy for him and his wife Maria and their son, Nicholas, as Pete's new position will provide their family with many new and wonderful opportunities to continue to change the lives of others on a daily basis. On behalf of not only all of us at GARC, but from everyone across the world that has been touched by Pete and his work, we want to wish him the very best of success in his new position. Pete has promised us that he will remain involved with GARC on various educational projects in the future, and we look forward to those collaborations.

We would also like to welcome our new campaigns coordinator, Deepashree Balaram, who trained as a veterinarian and will oversee the world rabies day campaign going forwards. You can contact her at info@worldrabiesday.org.

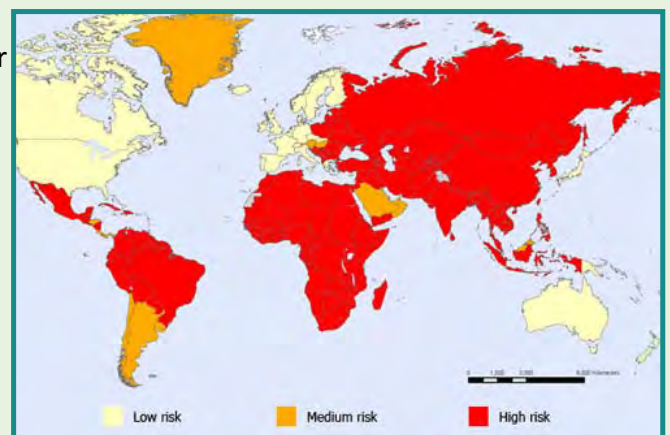
Finally, I want to wish all of you a very happy holiday season and a wonderful start to the New Year.

Deborah Briggs, Executive Director, GARC

NEWS FROM GARC AND WRD

Global Fight against Rabies Receives Major Boost ahead of World Rabies Day

Just in time for World Rabies Day (28th September), the Global Alliance for Rabies Control (GARC) revealed details of their latest initiatives against this most feared of diseases. Rabies is a disease of poverty that mainly affects children in Asia and Africa, threatening the life of over 3 billion people. In nearly 100% of cases in these areas infection with rabies will be fatal; however, this doesn't have to be the case - rabies is virtually 100% preventable. The Communities Against Rabies Exposure (CARE) programme, led by GARC in collaboration with local governments, Universities and research institutes, has received a multi-million dollar grant from the Optimus Foundation in order to expand their successful trial of community-led rabies



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...**Major Boost for GARC** *continued from page 1.*

elimination in Bohol, Phillipines to communities in Chad, Indonesia, Tanzania and further areas of the Phillipines. This trial will expand the benefits seen in Bohol, where rabies deaths were reduced to zero over a three year period, to a population of nearly 4.5 million, almost 1.5 million of whom are children.

Dr Deborah Briggs, Executive Director of GARC spoke of the hopes for the CARE programme, “In Bohol we saw just how powerful a community-based intervention can be in the control of rabies. By combining educational activities with vaccination of dogs we were able to remove this significant threat to life in the region in just three years. Thanks to the new funding from the Optimus Foundation we hope to be able to dramatically reduce the impact of rabies on millions more lives, and help to maintain this protection in the long-term.”

GARC also announced a grant from the Bill & Melinda Gates Foundation for the development and promotion of the activities of the Partners for Rabies Prevention group including the development of health economic models and a global rabies elimination plan. These plans will be developed in collaboration with leading PRP players, including the WHO, CDC (USA) and a number of Universities and will bring together expertise from a variety of fields in order to provide much-needed research to help inform and advance policy decisions.

Phyllis Costanza, CEO of the Optimus Foundation, spoke of the need for an integrated approach: “To eliminate rabies--especially for children who are the primary victims--it is essential to address the cause and effect of this deadly disease. As dogs are responsible for more than 98% of rabies infection in children, we must coordinate with veterinary, medical and public health experts. We must also work with community leaders and educators to ensure they understand and can teach children about how to avoid rabies. We encourage funders to unite behind this innovative approach and to support efforts by the Partners for Rabies Prevention and the Global Alliance for Rabies Control to eliminate rabies worldwide.”

The announcement of these new initiatives comes ahead of [World Rabies Day](#), celebrated around the world on September 28th. This year's events will include: a mass dog vaccination and intensive education campaign in Illocos Norte, Philippines, a classroom and community outreach program with radio and cinema shows in Masaka, Uganda and a seminar on rabies surveillance for veterinary and medical students at the University of Sao Paulo State, Brazil.

This GARC press release was issued on 25th September 2012.

WRD Events in Yemen Work to Co-ordinate Rabies Control

Yemen has a high risk of rabies, mostly due to the lack of a comprehensive strategy to control rabies in dogs. There is little co-ordination between the ministries charged with treating human victims of dog bites, tackling the stray dog problem and vaccinating animals. Residents are often fearful of the many stray dogs that chase them as they try to go about their everyday business. The situation seems to have worsened in recent years and from 2008 to 2012, the health ministry used more than 23,000 vaccinations to treat bite victims.

This year, WRD events in Yemen hosted by the Yemen Organization for the Protection of Animals ([YOPA](#)) sought to improve awareness and work towards a better rabies control a strategy for the country. A Workshop meeting brought together leaders in the field of rabies prevention and control from the responsible official authorities in Yemen and major international agencies. The aim was to start to develop a unified strategy for rabies prevention and control.

Free rabies vaccinations for pets were also offered from 27th September to 2nd October 2012 in collaboration with Sana'a Veterinary Clinic to encourage animal lovers to take care of their animals and to eliminate the disease at the source of infection.

Other awareness raising activities were carried out also. There is a great need, especially in rural communities to make sure that people know when and how to seek treatment for dog bites so that they can prevent the onset of rabies.

Summarised from information from Mahmood ABDO, Chairman of YOPA in Sana'a, Yemen. A news article on the world rabies day activities is available [here](#).



YOPA vaccination clinic

2012 WRD Report from Karachi, Pakistan

She had boarded a bus in her village to journey 50 kilometers into the city, and hobbled another two to reach the Emergency Room at the Indus Hospital in Karachi where treatment is free. She was exhausted, her tongue was dry, her skin shriveled and the furrows on her forehead and cheeks were lined with sweat and dust. She held out her frail, trembling hand and in a hoarse whisper cried out to the nurse: "Son, I am tired. Please help me". She held out her withered hand wrapped in a dirty piece of cloth. The nurse unraveled it and exposed a piece of flesh. Five days back a wild looking mangy dog had lunged at her and chewed up a piece of her forearm, leaving a gaping window into the bone.

The nurse washed the wound thoroughly with soap and water, injected Rabies immune globulin into it, and vaccine into the skin of her wasted arm and loosely covered the wound with a bandage. He advised her to return on subsequent days for the vaccine series. "Son, I must go back to my village. It is too far and I cannot come back. My girl is alone and I must feed her. May Allah bless you." She shuffled away and disappeared into the crowd of waiting patients.

Several weeks later a young girl led the same woman into the ER. A dirty bandage hung over the wound. "My mother has a headache and she is confused. She wants to drink water but she can't swallow. Doctor, you know a dog bit her arm last month". The girl's eyes held fear. I turned away from her to hide my repulsion at the death sentence. Inaccessible care near her home was the reason for her cruel fate.



WRD puppet show, Pakistan.

This and other similar tales have taken decades of advocacy to reach the attention of Pakistan's health authorities. On World Rabies Day 2012 it was announced that the government is opening ten rabies PEP centers in rural and urban locations in each province. The center for Master Trainers for the province of Sindh will be at the Indus Hospital in Karachi. Hopefully the centers should materialize by the end of the year so that dog bite victims will receive complete care in their own district and not have to travel distances. There is a dim light at the end of the tunnel.

Written by Dr Naseem Salahuddin who is the Head of the Dept. of Infectious Diseases, The Indus Hospital, Karachi in Pakistan and President of Rabies in Asia Foundation (Pakistan Chapter).

NEWS FROM THE COMMUNITY

Rabies a Health Priority in 12th Plan for India

Acknowledging that rabies is a major public health challenge in India, the government proposes to make it a priority disease for control under the 12th Five Year Plan (2012-2017). Currently India does not have a comprehensive national rabies control programme. The existing prevention activities are being carried out by various organizations and municipal bodies, and inter-sectoral coordination is lacking.

Strategies to prevent deaths due to rabies were developed during the 11th Plan which targeted reduction of rabies deaths in humans by at least 50 per cent by the end of the Plan period in Ahmedabad, Bangalore, Pune, Madurai and Delhi. Experience gained from the implementation of the pilot project indicates that the strategy is feasible, reproducible and implementable. It is now proposed to roll out a comprehensive control strategy for both human and animal components in the 12th Plan. All 35 States/UTs will be covered for the human component and the animal component will be piloted in selected 30 cities.

The programme will include training health professionals to deal with animal bites, awareness creation and minimising animal bites. On the veterinary side, the focus is on sterilisation and vaccination of dogs, with a larger involvement of civil society and municipal bodies.

The number of animal bites in India is not reliably known, though some studies have estimated it to be as high as 17.4 million a year. The last survey conducted by the Association for Prevention and Control of Rabies in India in 2003 was supported by the WHO and put the number of deaths at 20,000. About 90 per cent of the mortality and morbidity due to rabies is associated with dog bites. Modern, safe and effective anti-rabies cell culture vaccines are being used for post-exposure treatment in India after the government banned the production and use of nervous

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WHO Expert Consultation

A recent World Health Organization (WHO) International Expert Consultation on rabies urged countries where canine rabies is endemic to initiate and strengthen their rabies prevention and control activities, and to increase the level of awareness about the disease, particularly among children. It noted that under reporting and misdiagnosis of human rabies cases, and problems of access to post-exposure prophylaxis (PEP) in rural areas where dog rabies is uncontrolled remain big problems.

Around 70 participants attended the Consultation held at WHO's headquarters in Geneva, Switzerland, on 18–20 September 2012.

Participants discussed a wide range of topics including a review of the rabies situation in domestic and wild animals in endemic countries, laboratory diagnosis techniques, the management of rabid patients, rabies biological products, the need for immediate wound treatment and full effective PEP, and the economic burden of the disease.

“A re-assessment of the burden of rabies made during the meeting showed that 50 000 people, mostly in Africa and Asia, still die in spite of 20 million others receiving PEP worldwide,” said Dr François Meslin, Team Leader for Neglected Zoonotic Diseases at WHO's Department of Control of Neglected Tropical Diseases. “Data show that the majority of fatal cases involve people from poor, rural communities without access to dog bite management centres and rabies biologicals. Also, too many PEP delivered in the world today are not administered to the right people.”

It was recommended that national rabies control programmes involve the animal and public health sectors as well as other sectors such as education, local government, police and civil society, particularly animal welfare and conservation associations. Research into the socioeconomic challenges of implementing rabies control and the potential for integration of rabies control into that of other canine transmitted diseases (such as echinococcosis and leishmaniasis) was called for.

Having reviewed recent successful canine rabies control programmes in Africa, Asia and Latin America, the consultation urged WHO to continue to advocate for human rabies prevention through the elimination of rabies in dogs and to promote a wider use of the intradermal route for PEP, which reduces volume and the cost of cell-cultured vaccine by 60% to 80%. WHO's target, as outlined in its NTD roadmap (published in January 2012) is to eliminate human and dog rabies in all Latin American countries by 2015 and human rabies transmitted by dogs in South-East Asia by 2020.

Based on the news story available on the WHO website [here](#).



...12th Plan for India *continued from page 3.*



On WRD 2012, Dr Bharti's team gives preEP to 57 ragpickers at the Shimla municipal waste dumping site. These people are at high risk of rabies, but unable to afford PEP.

rabies history. Otherwise it would remain another promise that would never be fulfilled in near future.

Submitted by Dr. Omesh Kumar Bharti, Corporation Health Officer for Shimla-1, Himachal Pradesh, India. The article is partly based on [this news report](#) from the Hindu. The report of the steering committee on health for the 12th Five-year plan can be accessed [here](#).

tissue vaccine in December 2004. Intradermal rabies vaccination has been promoted at the State level in designated rabies clinics.

The WHO says prevention of human rabies is possible through mass dog vaccination, promotion of responsible dog ownership and dog population control programmes with a partnership approach. Many countries in South America and Asia have successfully used this strategy to eliminate transmission of rabies. However, this is a challenge for India as it has a large population of dogs (around 25 million) and very low vaccination coverage. The challenge is greater as the majority of dogs are stray dogs, as is the case with Srinagar where the dog:human ratio is 1:14. Another challenge is the government of India has still not made rabies a notifiable disease so many deaths go unreported.

The rabies control aspects of the 12th plan need further elaboration and a detailed plan of action, if we want to make

Asian Rabies Experts Emphasize the Need to Work Together and to Involve Communities

Rabies experts from 12 Asian countries gathered for 3 days in Yogyakarta, Indonesia, for the Ninth annual meeting of the Asian Rabies Expert Bureau (AREB). They discussed the rabies situation in their respective countries, as well as strategies to achieve elimination of dog-transmitted human rabies and how to implement them. Successful pilot projects were presented, emphasizing the need for multisectoral collaboration, including community active involvement and empowerment, as well as commitment and cooperation of the ministries of Health (MOH) and Agriculture (MOAG).

This strategy has proved effective in Bali, historically a “rabies-free” island, where a rabies outbreak claiming over 140 human lives since 2008 has now been brought under control. “Coordination mechanisms have been established at the provincial and district/municipality levels between the MOH, MOAG and the Ministry of Internal Affairs (MOIA); joint teams of the MOH and MOAG are investigating rabies cases; 58 rabies prevention centers for animal bite management have been established in Bali, and health workers have been trained to rabies vaccination of bite victims”, Dr Rita Kusriastuti, Director of VBDC MoH Indonesia, said. “In order to prevent and control rabies at the source, mass vaccination campaigns of dogs have been carried out together with humane dog population management and promotion of pet ownership responsibility”, Dr Pudjiatmoko, Director of Animal Health in DG of Livestock and Animal Health MoAG, added. Communities were empowered through information, education and communication. As a result, the number of human rabies cases has been dramatically reduced.

Several “success stories” from different Asian countries were presented. The Bohol Rabies Project, a landmark field project in the Philippines supported by the Global Alliance for Rabies Control (GARC), has demonstrated that rabies can be eliminated and children saved by empowering communities to take responsibility, and bringing different sectors of society (educators, physicians, veterinarians, government officials, community leaders and the general public) to work on a common goal. In Bohol, thanks to coordinated initiatives over 70% of dogs have been registered and vaccinated and education on rabies prevention and responsible dog ownership has been integrated into elementary schools curriculum. Bohol model has been recognized by the President of the Philippines for its excellence (Galing Pook award, 2011) and is being adapted to other rabies endemic areas in South-East Asia. In Indonesia, for example, CARE (Communities Against Rabies Exposure) Project, derived from Bohol model, has been recently launched in Nias Island, North Sumatra and is expected to contribute to rabies elimination using a similar intersectoral approach. “Nias project will concentrate on dog vaccination work collaboratively with Directorate General of livestock and animal health MoAG, as well as on prevention of human rabies with MoH in a concept of One Health”, explained Dr Rita Kusriastuti.

Another example came from India, with the Adopt a Village Project, carried out in several villages in the rural area South-East of Bangalore. An education and awareness program was conducted for people living at daily risk of rabies. This involved communicating facts about rabies via messengers (school teachers, health care workers, local leaders) and media (posters, television, etc.) to dispel myths and encourage behaviour change. School children took part in a drawing competition and learned about rabies playing specially developed games. Numerous initiatives have been undertaken to convey rabies knowledge to general population: educational videos shown regularly in the local television network and in schools, murals displaying key messages painted on houses, and many others. Local leaders and women from Self Health Groups were recruited to implement these activities in their own villages and their continued involvement is crucial in sustaining anti-rabies activities now that the project has been completed. On 8-10 October, Indonesia will commemorate World Rabies Day. The celebrations, led by religious leaders, will take place in Maumere, Sikka District, East Nusa Tenggara Province where several innovative anti-rabies actions have been taken.

This is a press release from [AREB](#). AREB, founded in 2004, is an informal network of rabies experts from 12 countries: Bangladesh, Cambodia, China, India, Indonesia, Lao PDR, Myanmar, Pakistan, Philippines, Sri Lanka, Thailand, and Viet Nam. AREB is committed to contributing to rabies elimination in Asia. For more information about AREB, please contact Dr Rita Kusriastuti, Director VBDC at rita.kusriastuti@gmail.com or Dr Betty Dodet, AREB coordinator, at info@dodetbioscience.com.



Million Death Study in India Estimates Rabies Deaths

The Million Death Study (MDS) seeks to assign causes to all deaths in 6,671 randomly selected areas of India (each with a population of around 1,000 people) between 2001 and 2014. Investigators use an enhanced verbal autopsy technique to attribute a cause to each identified death.



A new study used MDS data from years 2001-2003 (122,429 surveyed deaths, of which only 8.7% were of unknown cause), and found 95 recorded due to rabies, with a further 45 deaths due to dog bites being confirmed as rabies cases. Averaged across the 3 years of data, this corresponds to a rate of 1.3 rabies fatalities per 1,000 deaths. These deaths were not distributed evenly across the country, they almost all occurred in rural areas, and outside hospitals. 65% of patients did not seek treatment and only 1 received a full course of PEP vaccines (no RIG).

Combining this proportion of deaths due to rabies with United Nations Population Division estimates of deaths in India, the authors estimated that 12,700 deaths in India were due to symptomatically identifiable furious rabies in 2005. This figure is the first attempt to estimate rabies deaths based on a representative sample of actual deaths from across India, and is considerably lower than previous estimates (17,137 and 19,713) for rabies deaths in India. However,

the verbal autopsy method would not detect deaths due to paralytic or abnormal rabies. The proportion of rabies cases presenting with paralytic or abnormal symptoms is unknown, though figures of less than 20%, or one third have been suggested.

The authors conclude that although canine rabies elimination in India is not likely to be achieved soon, the fact that rabies cases are clustered suggest that significant reductions in human deaths could be possible with targeted control measures.

Summarised by Louise Taylor from the paper: Suraweera et al (2012) Deaths from Symptomatically Identifiable Furious Rabies in India: A Nationally Representative Mortality Survey. [PLoS Negl Trop Dis 6\(10\): e1847](https://doi.org/10.1186/147528756101847)

Rabid Beavers in Northeastern United States

This summer has seen a number of people innocently enjoying the water in the north eastern US attacked by an unusual threat – rabid beavers.

In July, 11 and 8 year-old sisters swimming in a lake in Virginia were attacked by a rabid beaver. One required around 15 stitches on her upper thigh, whilst the other sustained three wounds just above her knee,

In August, a 51 year old boy scout leader was attacked whilst swimming in the Delaware River. A beaver swam through his legs and bit him in the chest. The man managed to throw the animal away, but it came back biting him in the leg, buttocks, arm, hand and torso before he managed to grab it and hold its jaw closed. He finally threw the animal ashore where boy scouts killed it with stones.



In September, an 83 year old lady taking her regular swim in another lake in Virginia was just leaving the water when a beaver attacked her and started chewing on her leg. The lady, a friend and later a paramedic fought with the animal for over 20 minutes, using canoe paddles to try and beat it away, and finally trapped it in a fishing net. Finally, in September, children that had just finished a fishing competition at a Nature Centre watched as a beaver leapt out of the water, onto the dock and started acting aggressively and chasing them. In this case fortunately the children were taken to safety, no one was injured, and animal control officers shot the beaver.

In all cases the animal was killed and later tested positive for rabies.

Summarised by Louise Taylor from news reports in the [Huffington Post](https://www.huffpost.com), [Huffington Post](https://www.huffpost.com), [Washington Post](https://www.washingtonpost.com) and on [CBS News](https://www.cbsnews.com). Although the news reports do not state the variant, it seems most likely that these were spillover infections of the raccoon rabies variant.

Popular Science Book Focuses on Rabies

Rabid: A Cultural History of the World's Most Diabolical Virus is a popular science book, published in July. It was written by Bill Wasik, a journalist interested in technology and crowd dynamics (think of ideas 'going viral'), and his wife Monica Murphy a veterinarian with a degree in public health. This combination of interests has produced a book that explores not only the conventional science and history of rabies, but also its impact on cultures worldwide, from the earliest recordings 4,000 years ago, through our understanding its transmission and prevention, right to its influence on modern zombie films.

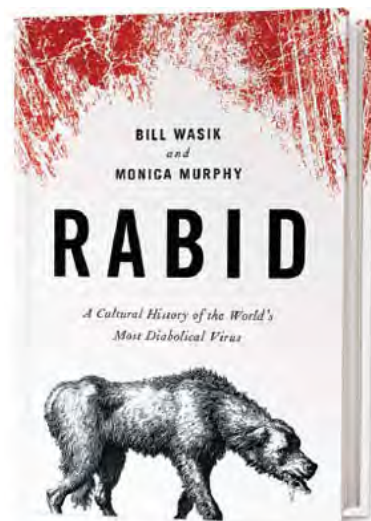
At first the focus on the horrific aspects of rabies and the reliance on media references put me off as sensationalist. I worried that the reality of rabies and its impacts on many countries where rabies is endemic would be left out to focus on how the horror of rabies has been used to sell books and movies. But the book is more balanced with detailed research and there are excellent chapters on Pasteur's work to develop the vaccine, the science and controversy of work to help patients survive clinical rabies and the recent outbreak of canine rabies on Bali, which leave you with realistic impression of the historical and modern quandaries of working in rabies control. Throughout, the personalities of victims, researchers, novelists and philanthropists touched by rabies are used to chart a very human history. In the later chapters as the names and situations became familiar to me, I found it even more compelling.

The book neatly and readably charts the progress of mankind's understanding of rabies, its causes and its cures from ancient texts to possible future uses of the rabies virus to treat other diseases. Along the way I learnt that the 4,000 year old Laws of Eshnunna set out fines for owners of rabid dogs that infected and killed people. An Ayurvedic text, written by Suśruta at least 2,000 years ago included a highly accurate description of the disease and first identified hydrophobia as a characteristic and fatal symptom. Many early 'cures' for rabid animal bites are detailed, from applying burnt herbs to the wound, to sweating out the evil, to applying poultry dung and vinegar, and any number of ways to use parts of the offending rabid dog to prevent the onset of rabies.

The book makes interesting observations, such as the dual role of dogs in human society (as beloved pets and as problematic strays) and how concepts of the disease itself and general rage (meaning animalistic fury) have been intertwined in many cultures. It shows how the fear that rabies exerts on us has influenced fictional writing from Charlotte Bronte to Edgar Alan Poe (who may even have died to rabies himself) to modern zombie films. The authors suggest that clinical symptoms of rabies have influenced the fictional characteristics of werewolves, vampires, monsters and zombies, playing on our innate fear of man transforming into animal. I was surprised to find that a 1998 paper in Neurology was devoted to this subject.

This is a cultural history which makes a priority of mentioning how the fear of rabies can affect communities – an aspect often left out of more clinical medical accounts. Very little popular science writing focuses on rabies. If we are interested in increasing awareness about rabies, we need as many tools as we can get. To me the reality of rabies is fascinating and frightening enough – but if this book pulls in readers attracted by the pulp fiction horror aspects of the book, and leaves them with an understanding of the reality, then that is fine by me.

This review is a personal opinion of Louise Taylor of GARC, who despite living in Pittsburgh, the cultural home of zombie movies, is still not a fan of the undead.



Upcoming meetings

The 11th meeting of the Southern and Eastern African Rabies Group (SEARG) will be held close to Dar es Salaam in Tanzania between 12 and 15 February 2013. For more details see www.searg.info.

The 4th International Meeting on Emerging Diseases and Surveillance will be held February 15-18, 2013 in Vienna, Austria and updates are available at: <http://imed.isid.org/>

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

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