

## WHAT COULD BE THE NEXT GLOBAL PANDEMIC?

AS A NEW ZIKA VACCINE GIVES HOPE FOR 2016 OLYMPICS,  
EXPERTS WARN OF A HOST OF OTHER DISEASES THAT COULD BE ENTERING A LEAGUE OF THEIR OWN

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**World Zoonoses Day: 6<sup>th</sup> July 2016, Brussels.** The threat of the Zika virus has loomed large in the run up to the 2016 Olympic Games, with 40 affected territories and countries in the Americas confirmed since the outbreak began in 2015. Host country Brazil has seen 1,616 cases alone.<sup>i</sup> But last week, news broke of an experimental animal vaccine which could offer protection for the human population.<sup>ii</sup>

While this is a hopeful development, animal medicines leading to benefits for human health is not a new phenomenon, nor is the potential risk from diseases which pass between humans and animals, known as zoonoses. With 75 per cent of emerging infectious diseases from the last 10 years originating from animals, there is an ever-increasing likelihood that the next big pandemic will be zoonotic in nature.

To mark **World Zoonoses Day** (6<sup>th</sup> July 2016), experts from the global animal medicine association, **HealthforAnimals**, have highlighted the risk zoonotic diseases already pose to highlight the need for urgent focus. These diseases include **Ebola** and **rabies** (which causes one human death every 15 minutes<sup>iii</sup>).

Executive Director for HealthforAnimals, Mr Carel du Marchie Sarvaas comments: "To combat the global zoonotic threat, HealthforAnimals advocates the use of preventative veterinary medicines and the widespread use and development of vaccines. For example, rabies causes more than 60,000 deaths each year but is entirely preventable through canine vaccination programmes."

**Leptospirosis** is another major, yet under-recognised global threat to public health. However, there is a vaccine for pets against the bacterial infection, which is most commonly spread by rodents.

The World Health Organization has set up the Leptospirosis Burden Epidemiology Reference Group in partnership with other international actors to conduct global research. The aim is to collect transmission data and create a policy targeted towards decreasing the burden of the disease. Pet owners are also encouraged to vaccinate as a way to best protect themselves from infection which can be passed on through direct or indirect contact with contaminated animal tissues, organs, or urine.

Mr du Marchie Sarvaas continues: "Protecting animals from these diseases has many benefits, from safeguarding human health to supporting greater animal welfare around the world.

"Whilst there are often barriers to implementing preventative veterinary medicines and vaccines in the fight against the spread of zoonotic diseases, the animal health industry must work together with NGOs, inter-governmental bodies, governments and regulators around the world to encourage access to medicines. Otherwise the cost will continue to be human lives."

## What could be next? A Summary of Animal-Human Diseases Around the World

At least 60 per cent of human pathogens are zoonotic- i.e. can affect animals too.<sup>iv</sup> These diseases can have a devastating impact on human and animal populations alike.

Disease	Transmitted to animals and humans	Recorded Human Deaths/Cases
Rift Valley Fever	Via bites from infected mosquitoes or via direct or indirect contact with the blood or organs of infected animals. <sup>v</sup>	<ul style="list-style-type: none"> <li>▪ Whilst most human cases are relatively mild, from 1931-2012 the disease was responsible for nearly 3,000 human deaths across 17 African countries between 1931-2012.<sup>vi</sup> The real impact is seen in the animal world as the disease is fatal to livestock</li> </ul>
Rabies virus	Via the saliva of infected animals. 99 per cent of human cases are caused by dog bites. <sup>vii</sup>	<ul style="list-style-type: none"> <li>▪ 60,000 deaths annually<sup>viii</sup></li> </ul>
Yellow Fever	Via infected mosquitoes.	<ul style="list-style-type: none"> <li>▪ In 2013 it led to 29,000 – 60,000 deaths<sup>ix</sup></li> </ul>
Ebola virus	Researchers believe the virus is spread by bats and monkeys. Infected humans can pass Ebola to another via broken skin or mucous membranes with blood and other bodily fluids.	<ul style="list-style-type: none"> <li>▪ Since initial outbreak in 2014, 11,310 fatalities.<sup>x</sup></li> </ul>
Malaria	Via infected mosquitoes.	<ul style="list-style-type: none"> <li>▪ One million people die each year. The largest killer of children – one every 30 seconds.<sup>xi</sup></li> </ul>
Tuberculosis	A bacterial disease usually caused by an organism called mycobacterium tuberculosis. Spread through the air from one infected person to another.	<ul style="list-style-type: none"> <li>▪ One third of the world's population is infected with TB<sup>xii</sup></li> <li>▪ All mammals</li> </ul>
Dengue Fever	Via infected mosquitoes.	<ul style="list-style-type: none"> <li>▪ In 2010, 2013 and 2015, nearly 2.4 million cases were reported annually across the globe.<sup>xiii</sup></li> </ul>
Toxoplasmosis	Caused by the parasite toxoplasma gondii. Cats are the parasite's host and it's passed to humans through food or water contaminated with infected cat faeces.	<ul style="list-style-type: none"> <li>▪ 714 confirmed congenital cases in EU/EEA 2008 – 2012.<sup>xiv</sup></li> </ul>
Influenza A virus	Primary host is wild waterfowl but also other species. Transmission of avian influenza e.g. H5N1 and H7N9 through human contact with infected species.	<ul style="list-style-type: none"> <li>▪ From 2003 through March 2014, 650 human illnesses caused by avian influenza A (H5N1) were reported globally, approximately 60% of which were fatal.<sup>xv</sup></li> </ul>
Leptospirosis	Caused by bacteria of the genus <i>leptospira</i> . Spread via water contaminated with urine from infected animals, but also contaminated food or soil.	<ul style="list-style-type: none"> <li>▪ 0.1 to 1 per 100 000 people living in temperate climates are affected each year, with the number increasing to 10 or more per 100 000 people living in tropical climates.<sup>xvi</sup></li> </ul>
Lyme Disease	Spread by bites from infected ticks.	<ul style="list-style-type: none"> <li>▪ Found in more than 80 countries worldwide.<sup>xvii</sup></li> </ul>

To find out more about zoonotic and vector borne diseases and the ways in which animal health plays a role in safeguarding human wellbeing, visit [healthforanimals.org](http://healthforanimals.org) or follow the conversation on twitter @Health4Animals.

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## Notes for editors

### HealthforAnimals

HealthforAnimals is an organisation representing manufacturers of veterinary medicines, vaccines and other animal health products in both developed and developing countries across five continents. The mission of HealthforAnimals is to foster a greater understanding of animal health matters and promote a predictable, science-based regulatory environment that facilitates the supply of innovative and quality animal medicines, vaccines and other animal health products into a competitive market place. These products contribute to a healthy and safe food supply as well as a high standard of health and welfare for animals and people.

For further information on HealthforAnimals visit: <http://healthforanimals.org/>

## References

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- <sup>i</sup> [http://www.paho.org/hq/index.php?option=com\\_content&view=article&id=11599&Itemid=41691&lang=en](http://www.paho.org/hq/index.php?option=com_content&view=article&id=11599&Itemid=41691&lang=en)
  - <sup>ii</sup> <http://www.sciencealert.com/two-zika-vaccines-are-gearing-up-for-human-trials-after-success-in-mice>
  - <sup>iii</sup> [http://www.who.int/rabies/rabies\\_Infographic\\_updated\\_Global\\_International\\_meeting.pdf?ua=1](http://www.who.int/rabies/rabies_Infographic_updated_Global_International_meeting.pdf?ua=1)
  - <sup>iv</sup> <http://iiad.tamu.edu/about-iiad/about/>
  - <sup>v</sup> <http://www.who.int/mediacentre/factsheets/fs207/en/>
  - <sup>vi</sup> [http://www.infectionecologyandepidemiology.net/index.php/iee/article/view/28024#F0002\\_28024](http://www.infectionecologyandepidemiology.net/index.php/iee/article/view/28024#F0002_28024)
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  - <sup>x</sup> <http://www.cdc.gov/vhf/ebola/outbreaks/2014-west-africa/previous-case-counts.html>
  - <sup>xi</sup> [http://www.unicef.org/health/files/health\\_africamalaria.pdf](http://www.unicef.org/health/files/health_africamalaria.pdf)
  - <sup>xii</sup> <http://www.cdc.gov/tb/statistics/>
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  - <sup>xvi</sup> <http://www.who.int/zoonoses/diseases/lerg/en/index2.html>
  - <sup>xvii</sup> <http://www.lymediseaseassociation.org/index.php/about-lyme/cases-stats-maps-a-graphs/940-lyme-in-more-than-80-countries-worldwide>