

# Chapter 11

## Open Source Educational Initiatives to Improve Awareness of Rabies Prevention

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### ABSTRACT

*Rabies is the deadliest infectious disease known to humans and animals and yet is almost always preventable even after an exposure has occurred. The lack of educational awareness is a major reason why over 55,000 people die of the disease every year. The Global Alliance for Rabies Control, in association with international partners in the field of public health, initiated new educational initiatives aimed at increasing global awareness for those living at daily risk of exposure to rabies. Three of the open source educational initiatives are described in this chapter, including: World Rabies Day; the establishment of a freely accessible scientifically accurate education bank; and hosting global webinars that connect public health experts interested in reducing the burden of rabies in their regions.*

### INTRODUCTION

Most readers of this chapter will have a specific image of fear and horror in their mind when they hear the word “rabies” and yet few people truly understand the actual disease itself including how they might be exposed to the virus causing rabies and what the current recommendations are

in the event that they were exposed. Increasing awareness on these two issues could save tens of thousands of lives as a lack of true understanding of how rabies viruses are transmitted and how the disease can be prevented are the root causes of almost every human rabies death. Added to the lack of awareness about disease transmission and prevention is the fact that the majority of human

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rabies deaths occur in populations belonging to the lower socio-economic group where access to resources, including education and anti-rabies biologicals, are limited or non-existent (WHO, 2010). Finally, an evaluation of the highest incidence of disease per age group reveals that at least 50% of all rabies deaths occur in children under the age of 15 indicating that children are not aware of what rabies is, how they could be exposed to infection, and what to do if they were exposed (Rupprecht et al., 2008).

Rabies is in fact, a neglected viral zoonotic disease that is almost always transmitted from an infected mammal to a human (WHO, 2011; Wilde, Briggs, Meslin, Hemachudha, & Sitprija, 2003). Rabies has the highest case fatality rate of any disease known to infect humans and animals (Rupprecht, 2004; Rupprecht et al., 2008). There have been very few patients that have survived rabies because, once clinical signs are evident, the disease progresses rapidly and almost every patient will succumb to the disease within a few days. The World Health Organization (WHO) reports that there are at least 55,000 human deaths every year, thus one person dies of this horrific disease every 10 minutes (WHO, 2010). There are a number of different types, or variants, of rabies viruses circulating in the world and each rabies virus variant tends to be transmitted within one species of animal although ‘spillover’ of viral infection to other species can and does occur. In fact, it is the spillover of disease to humans that result in human fatalities. Human to human transmission of rabies is extremely rare and has only been laboratory confirmed to have occurred occasionally through organ transplantation although anecdotal transmission of rabies was reported through human bites (Dietzschold & Koprowski, 2004; Fekadu et al., 1996; Lapierre & Tiberghien, 2005). The majority of human rabies deaths, approximately 99% of all estimated global deaths, occur in Africa and Asia after being exposed to (usually through a bite) a rabid dog (WHO, 2005, 2010). Rabies viruses circulate on every continent

in the world, with the exception of Antarctica, resulting in over 3.3 billion people living at risk of contracting the disease.

In North America, the circulation of canine rabies virus variants was eliminated through mass dog vaccination programs initially launched in the 1950’s. However, different rabies virus variants continue to circulate within the wildlife population and unvaccinated pets, including dogs and cats, can become infected through exposure to infected wild animals. In the US, between 0 – 6 human rabies deaths are reported annually. Most of these deaths occurred after being exposed to an infected bat for which the patient did not seek prompt medical treatment (Gibbons, Holman, Mosberg, & Rupprecht, 2002; Messenger, Smith, Orciari, Yager, & Rupprecht, 2003).

Despite the extremely high fatality rate of rabies, this disease is almost 100% preventable. Rabies, unlike many other infectious diseases, can be prevented even after an exposure to the infectious agent has occurred. Post-exposure prophylaxis (PEP) consists of washing the wound where rabies virus may have entered, and then administering anti-rabies biologicals to the patient, including vaccine and immunoglobulin (WHO, 2010). In over three decades since modern cell culture rabies vaccines (CCVs) were developed, there have only been a handful of patients that have died of rabies after having received appropriate PEP thus confirming that prompt treatment after exposure could save thousands of lives (Deshmukh, Damle, Bajaj, Bhakre, & Patil, 2011; Hemachudha et al., 1999; Shantavasinkul et al., 2010). Since rabies is preventable and no one would willingly chose to die of rabies if they knew how to prevent the disease, the fact is that the lack of educational awareness on all levels of society is one of the major reasons why humans still die of this disease.

This chapter will outline the role of open source educational awareness in the prevention and control of rabies throughout the world, focusing on three specific initiatives that have used different educational platforms to promote rabies awareness

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