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Vaccine responses to emerging viral infections

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Severe epidemic outbreaks of viral tropical diseases transmitted through the bites of *Aedes* mosquitoes have occurred worldwide in the past few years, including yellow fever, dengue fever, Zika and chikungunya disease outbreaks. The live attenuated strain 17D Yellow Fever vaccine was most helpful in the fight against the 2015 epidemic of yellow fever in Angola and the Congo Democratic Republic. One hopes that the new tetravalent chimeric yellow fever-dengue vaccine will be of significant help in the fight against dengue fever worldwide, especially in Brazil, Mexico and the Philippines, where the vaccine has now been licensed. Similarly, new vaccines have been developed or are in advanced development against chikungunya virus fever. However, we still badly miss an efficient vaccine against Zika fever, which continues to cause congenital microcephalies in Latin America, the West Indies, Mexico and even the southern parts of the United States. Major efforts should be made to develop an efficient vaccine against the disease that could help protect the local populations, especially pregnant women, and the travelers to and from that area of the world. The same applies to the development of a vaccine against Ebola fever. The chimeric rVSV-ZEBOV vaccine was very efficient in the ring vaccination Phase III trial in Guinea which was organized by the World Health Organization to fight the 2014-2016 Ebola fever epidemics in Western Africa. Unfortunately, the trial had to be stopped before completion, because of lack of cases. One can only hope that data on the efficiency of the vaccine against Ebola virus challenges in animal models will be accepted by health authorities as a proof of the vaccine efficacy and will allow its official licensure. The use of the vaccine in a ring vaccination strategy would be a major asset in the fight against any eventual new outbreak of Ebola fever.

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