

EMERGING VIRUSES OF THE UNITED STATES

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INTRODUCTION

Emerging viruses are those that cause the appearance of an as yet unrecognized infection, or a previously recognized infection that has expanded into a new ecological niche or geographical zone and often accompanied by a significant change in pathogenicity¹. Surveillance, prevention and control are important factors to fight these virus because of the lack of effective pharmaceutical solutions. Several of these virus are endemic in developed countries. Then, the major emerging viruses affecting the United states and the prevention measures that could be taken will be studied.

DENGUE VIRUS

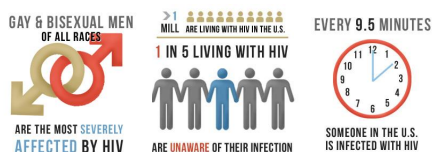
It can be transmitted by two species of mosquitoes (*Aedes aegypti* and *Aedes albopictus*) which are presents at USA. This virus is mostly prevalent in tropical countries but the increase of USA travelers to these areas could drive to the virus import². Last outbreak occurred at Florida in 2009. It is basic to prevent mosquitoes bites.

Source: Brazil government website; <http://www.brasil.gov.br/sobre/health/programs-and-campaigns/fight-against-dengue-1/>



HUMAN IMMUNODEFICIENCY VIRUS (HIV)

Virus responsible of AIDS disease. First cases appeared at USA in 1981. There are 50000 new infections every year. To prevent the infection is very important to know the ways of transmission, especially using protection during sexual relationships.



Source: AIDS.gov

SIN NOMBRE VIRUS

The Hantavirus Pulmonary Syndrome, which can be fatal because can lead to a respiratory failure, is caused by SNV. It first appeared in 1993 in the Four Corners area. The infection occurs through rodents, mainly through *Peromyscus maniculatus*. For that reason, prevention is based on avoiding the rodents presence using traps, eliminating food of accessible sites, etc.



Source: CDC; http://www.cdc.gov/hantavirus/pdf/HPS_Brochure.pdf

H1N1

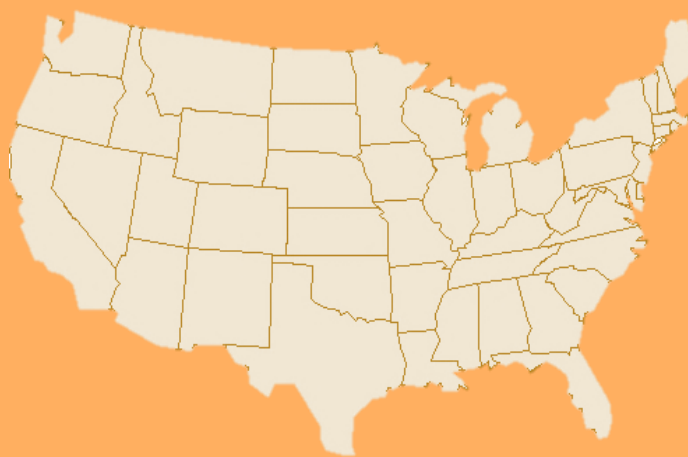
H1N1 is a subtypes of *Influenza virus A* which arise at Mexico on March in 2009 because of the recombination of three existing influenza virus. First cases arrived to the USA on April of the same year². WHO declared a state of global pandemic the 11th of June. The tips to prevent H1N1 infection are the same as in the case of seasonal influenza.

Influenza A(H1N1)

How to Protect Yourself and Others

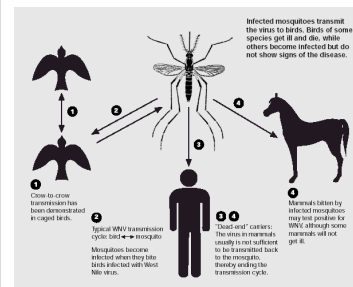


Source: WHO World Health Organization



WEST NILE VIRUS (WNV)

WNV is a flavivirus which cause encephalitis. It is transmitted to human by *Culex pipiens* and *Culex restuans* mosquitoes. First outbreak in USA occurred in New York area during august of 1999⁴. The best way to avoid the infection is prevent mosquitoes bites.



Source: CCHD Environmental Health Division; <http://www.cchd.net/west-nile-virus.html>

MAIN HEALTH ORGANIZATIONS FOR DISEASE CONTROL AND PREVENTION



Centers for Disease Control and Prevention
CDC 24/7: Saving Lives. Protecting People.™

American organization which collaborates to create the expertise, information, and tools that people and communities need to protect their health through health promotion, prevention of disease, injury and disability, and preparedness for new health threats.



WHO is the directing and coordinating authority for health within the United Nations system. It is responsible for providing leadership on global health matters, shaping the health research agenda, setting norms and standards, articulating evidence-based policy options, providing technical support to countries and monitoring and assessing health trends.

CONCLUSIONS

All the studied emerging viral diseases of the United States have appeared due to the phenomenon of zoonosis, that is, the virus has adapted to be able to infect humans from another animal host. This diseases usually develop a severe symptomatology which can lead to death. Moreover, nowadays there are few effective pharmacological treatments against these virus. For those reasons, prevention and control systems are a key point to fight the emerging virus spread.

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