**Dengue Fever (Dengue or Black Bone Disease)**

*Research provided by the Kansas Association of Local Health Departments*

This month, we will be focusing on a new vaccine preventable disease called Dengue Fever. While Dengue has been a problem for many years, the ACIP and CDC approved a vaccine for it on the routine vaccination schedule late last year.

***What is it?***

Dengue Fever, also known as Black Bone Fever, is a mosquito born illness the occurs in areas with high mosquito populations. High mosquito populations typically occur in tropical and subtropical areas like South America. However, it can happen in any place where infected mosquitos live. Mild Dengue Fever cases typically have mild symptoms including headache, muscle pain, and nausea. However, a high fever of 104 F is common with Dengue Fever. In severe cases, this high fever can cause Dengue Shock Syndrome and lead to hemorrhagic fevers and blood vessel damage that can lead to death. However, Dengue Fever symptoms present four to 10 days after the mosquito bite.

***Difference Between Dengue Fever and Zika (and other mosquito borne illnesses)***

Dengue Fever symptoms can be easily mistaken for other mosquito-borne illnesses such as Zika. Zika, which is a mild infection in most people, can be transmitted through mosquitos, sex, or blood transfusions. Zika, while mild for most, is a serious disease for pregnant women and causes birth defects in babies such as microcephaly. Dengue Fever, on the other hand, is only transmitted through mosquitos and is marked by a high fever as noted above. Both Dengue Fever and Zika have vaccines being tested, but a Zika vaccine is not currently recommended in the United States.

***History***

Dengue Fever is well known in Asian culture, being chronicled in the Chinese medical encyclopedia in 992 AD. The disease has been tracked through various countries, and by the 1800s the word “dengue” became universally adapted after an 1828 outbreak in Cuba. As globalization increased, Dengue Fever carrying mosquitos did as well, providing ideal conditions for the disease to spread. Most epidemics of Dengue Fever occurred every 10 to 40 years, however, rapid expansion of Asia after World War II increased transmission, leading to the first highly fatal epidemic occurring in southeast Asia in the late 20th century in Thailand. Today, Dengue Fever, along with Malaria, are the leading cause of infection and death in tropical areas where mosquitos reside.

Dengue Fever was classified as an infectious disease by the World Health Organization in 2012 and have become more severe as the epidemics expand.

***Vaccine Development***

Dengue Fever vaccination development began in the 1920s in the United States. However, it was hindered by the fact that it is an RNA virus and has four serotypes. By early 2020, a vaccine became available for those who had previous Dengue infections. By March 2021, it was approved in both Europe and the United States. The current vaccine is about 76% effective in preventing symptomatic Dengue Fever in children 9 to 16 years old. The Dengue vaccine is only recommended for those who had previously had Dengue.

***Research and Other Vaccine Candidates***

Along with the current vaccine, many other pharmaceutical companies are working on a Dengue vaccine for those who have not had Dengue before. However, in 2017, a group in the Philippines vaccinated children who had not been previously exposed. The problem, according to the manufacturer, is that the current Dengue vaccine can put children at a higher risk of getting Dengue if they have not had it before.

In 2022, many US pharmaceutical companies are in clinical trials of Dengue vaccines, including Merck and GSK. However, more information and clinical trials are needed to determine effectiveness.

 ***What We Can Learn***

While Dengue Fever is not severe for most, it can cause death in severe cases – which are more common than we believe. A vaccination for Dengue Fever can prevent severe responses in children. With vaccination such as these, we can prevent disease that have become commonplace in our society.

**Sources and Further Information**

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