The evolution of H3N2: An important opportunity for making the right changes in the prevention of flu and pandemic H3N2.

Authors: Alice Stewart Joshua Ross Jennifer Phillips Craig Ford Jesus Obrien

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University of California-Los Angeles

School of Exercise and Sport Science

The World Health Organization (WHO) is confronting a new insect-borne virus as it battles flu. The WHO estimates more than 9 million people succumb to influenza each year, and influenza alone is responsible for more than 300,000 deaths worldwide. The virus in question, the H3N2, infects mainly adults and is transmitted by biting insects. The H1N1 viruses that have proved fatal in children and pregnant women are transmitted through airborne particles of airborne viruses.

While both viruses share some genetic elements, the variety of similarities and differences between the two viruses offers an opportunity to make the necessary changes in the clinical testing and prevention of H3N2 and H1N1. Understanding the evolution of the viral mechanisms is important if potential dangers of such diversity in the H3N2 virus are to be addressed. Here, we explore the breeding ground for those viruses and make important suggestions.

How are the H3N2 and H1N1 viruses related?

How the H3N2 and H1N1 viruses differ

Both influenza viruses are carried by numerous wild animals such as cows, bats, bees, and certain insects. The most common site of transmission is through eating raw and undercooked meat and poultry. There are actually three forms of H3N2. The first forms of H3N2 are similar to the flu virus circulating in North America: an almost identical virus to the influenza A virus circulating in animals and humans today. An unusual and novel form of H3N2, also named H3N2V1, is spread through inhalation of the virus in animals or through the mouth and has appeared in the Philippines. Another form of H3N2, H3N2N1, is a flagellum- carrying viral protein that propagates through the air. The most dangerous form of the virus is H3N2N2N1. It can also be transmitted via bee stings and local flora. This virus causes fever and vomiting.

Both H3N2 and H1N1 viruses have a history of pandemic outbreaks. In 1918, pandemic H1N1 caused a pandemic that devastated China and other Asian countries in 1918-1919. In 1957, H3N2 caused an H1N1 pandemic, which killed both children and adults. But unlike the current flu epidemic, both pandemics emerged decades after a previous epidemic. This might mean that previous infections in the general population have been cleared by the immune system. The differences between these viruses may have been more likely to contribute to the severity of each pandemic. The â€œwild typeâ€ H3N2 had been present in Europe and North America for a long time before the 1957 H1N1 pandemic, but the H1N1 virus that began circulating in the southern hemisphere just a few years later contributed to the severity of the 1957 and 1968 pandemics. This may indicate a possible mutation of the virus that increases its virulence.

How can we overcome the possibility of pandemic H3N2 in developing countries?

The lack of a laboratory for testing the virus in developing countries poses a major challenge to prevent the spread of H3N2 and H1N1 infection. And the fact that the virus can be airborne, that is, transmitted through the air, in developing countries poses another challenge. Even in developed countries like the United States, carriers of H3N2 and H1N1 infection often do not present to health care workers when they present with the symptoms of influenza, because they have been bitten by an infected mosquito.

This is why it is important for public health officials to work with professionals and ethicists from countries that have access to modern diagnostic and environmental surveillance laboratories to meet this diagnostic challenge. Different approaches and technologies may be required. For example, the use of the person-to-person transmission assay in the U.S. has helped to detect transmission of this virus. An international multi-modal approach combining some of these approaches is necessary. This approach will help avoid placing patients in hospitals. It will also help prevent unnecessary infections and the spread of the virus to other parts of the world.

A Fire Hydrant In The Middle Of A Field