

NEW Directions

in Emergency Preparedness



Biosurveillance Update – January 16, 2014

Influenza

As many have heard, influenza has increased hit prevalence in New York State over the past month. Several reports have emerged, naming the 2009 H1N1 virus as one of the primary causes of seasonal influenza in both New York State and throughout the rest of the country.

Throughout the fall, influenza seemed to have less of an impact in New York than in years past. In fact, seasonal epidemiologic reports on flu transmission throughout the state indicated sporadic reporting of influenza through early December 2013. Steps were taken to ensure that public information campaigns and healthcare facilities were prepared as early in the season as possible. Early vaccination campaigns and mitigation measures to stem transmission of influenza throughout the state seemed to work well. In an attempt to combat the transmission of influenza in the healthcare sector, the New York State Department of Health and its Commissioner Dr. Nirav Shah enacted a “mask regulation” requiring all personnel to be vaccinated or wear a surgical or procedure mask in areas where patients are present or being treated. Pharmaceutical manufacturers introduced both the trivalent and quadrivalent formulations and have been able to ensure enough supply in all the vaccination venues. The two formulations available this season are the seasonal trivalent vaccine, which includes the main Influenza types A/California/7/2009 (H1N1), an H3N2 virus that is antigenically similar to the cell propagated prototype virus A/Victoria/361/2011, and the Influenza B/Massachusetts/2/2012 like virus. The quadrivalent vaccine includes an influenza B/Brisbane/60/2008 virus in addition to the others aforementioned. Both the Centers for Disease Control (CDC) and State health departments have been deploying campaigns throughout the season to ensure that information about vaccination and this year’s prevalent strains remain on the minds of health professionals and the public and that mitigation measures are utilized to stem transmission.

As of mid-December, however, influenza is widespread throughout the state (a 54% increase), with 34 counties reporting laboratory-confirmed influenza cases. The increase is being attributed to gatherings during the holidays, as well as record low temperatures and weather systems that have plagued the state. Interestingly, the reports of patient visits for influenza-like illness have remain low at 1.01%, which is below the regional baseline for this time period according to the NYSDOH. Only 43 patients have been admitted to hospitals as a result of laboratory-confirmed influenza, a 19% decrease over the first week of December, and no pediatric deaths have been reported during this time period. Twelve counties have not yet reported influenza cases during this season. Also, healthcare associated influenza activity is low, with only 17 cases reported to public health statewide. The CDC has ranked influenza transmission in New York as low in comparison to the nation. Taking this all into consideration, the number of patients with laboratory-confirmed influenza is well below the state’s historical curve for seasons past and continues to be low overall, indicating that mitigation measures are helping to stem the typical rise in cases during this time of year.

Google has joined the surveillance game by collecting data on influenza-related Internet searches on ILI throughout the country and within individual states and publishing these flu trends [on their website](#). According to Google’s data, influenza transmission throughout the state of New York is moderate. While this determination is based primarily on public Internet searches vs. laboratory reports, it mirrors the national report published by the CDC. In many states, the number of potential cases reported by Google runs parallel to the number of cases actually reported to the Department of Health.

Remarkably, the majority of influenza cases confirmed by laboratories this year have occurred within the 18-49 age group (317 cases to date). By far, H1N1 seems to be the most prevalent influenza A virus of the season, surpassing Influenza A (H3). Clinicians should keep H1N1 in mind when evaluating patients with ILI and report these cases to local or state public health venues.

According to the CDC, early antiviral treatment with the pharmaceuticals currently available can shorten the duration of ILI symptoms and reduce the complications associated with influenza. So far, samples submitted for testing have been most susceptible to the antivirals Oseltamivir (Tamiflu®) and Zanamivir (Relenza®). For more information regarding the use of antivirals in the treatment or chemoprophylaxis of patients with confirmed influenza, please [click here](#).

Informational and vaccination campaigns and mitigation/regulation in healthcare facilities do work and are helping New Yorkers and their providers to keep influenza cases low. For more information regarding the state's influenza reporting, please [click here](#).

Influenza A (H5N1) – Bird Flu Update

There has been a human death associated with Influenza A (H5N1) in Alberta, Canada - the first H5N1 death reported in North America. Canadian health officials are calling it an isolated case, reporting that the decedent contracted the virus while traveling in China. He became ill on an Air Canada flight that originated in Beijing. He was hospitalized upon arrival in Edmonton and died two days later. There has been no evidence of sustained transmission of this influenza strain related to contact with the decedent. H5N1 is presently thought to not transmit easily among humans; however, it can cause severe respiratory symptoms in those infected, and the mortality rate is approximately 60%.

Chikungunya Virus in the Caribbean

The winter months are typically a time when many New Yorkers travel south, either for the season or for vacations. January through March and Spring Break are wonderful times for vacations in the south and the Caribbean. The island of St. Maarten at the northern end of the Lesser Antilles is often a popular destination. Known for its warm sunny beaches, nightlife and boating, this island boasts one of the most difficult airports to access in the Caribbean.

Recently, a new vacationer -- the Chikungunya Virus -- has emerged on St. Maarten and the nearby islands of St. Barthelemy, Martinique, and Guadeloupe, causing an illness called Chikungunya fever. The outbreak has been identified as the first indigenous transmission of Chikungunya fever in the Americas. Thus far, 167 suspected cases on St. Maarten have been identified, along with 27 cases on Martinique, and 21 cases on the island of St. Barthelemy.

Although a travel advisory has been issued by the CDC regarding these identified cases and the potential for travelers to become infected, it is expected that thousands of vacationers will visit this part of the Caribbean during the winter months. Health centers should be vigilant and suspect patients complaining of sudden onset of high fever (>102 degrees F), joint pain, and travel history to the Caribbean within the last 7 -12 days. Suspect cases should be reported to the local and state departments of health.

Once known to exist in sub-tropical and tropical regions of Africa and Southeast Asia, Chikungunya was identified in the temperate region of Europe. The name Chikungunya derives from a word in the Makonde language meaning "that which bends up," which describes the contorted physique of a patient suffering from the disease. The disease is rarely fatal, but has a high morbidity. Once acquired, it can last for several weeks and is very painful. The disease typically develops in humans approximately 4-7 days after being bitten by an infected mosquito. Signs and symptoms mimic dengue and include high fever, headache and significant pain in the joints. In 2009, obstetricians in Thailand delivered an infant from a Chikungunya-infected mother. Within hours of the caesarian section, the infant developed the disease, leaving doctors to suspect that the virus can penetrate the maternal – fetal barrier although there is no laboratory research to confirm it. There is no specific treatment and no human specific vaccine is available. Diagnosis is made by clinical presentation and laboratory testing utilizing real-time polymerase chain reaction. Treatment is symptomatic, but use of interferon has been documented. Please [click here](#) for more information regarding treatment protocols, fact sheets, and algorithms.

The Chikungunya virus is spread mainly by *Aedes aegypti* and *Aedes albopictus* mosquitos. The distribution of the *A. aegypti* covers most of the southern United States, Mexico, Central America, and northern South America, with a potential distribution that reaches to the Canadian border as far north as Maine. Currently, the CDC, the European Centers for Disease Control, and the Pan-American Health Organization are working closely together with the Caribbean governments and public health offices to assist in controlling the mosquito populations on the islands, the only effective available means of reducing transmission.

The emergence of Chikungunya in the western hemisphere is troubling. Due to the wide distribution of its vectors, cases could be seen in the United States as summer approaches and could support sustained transmission should these populations access the virus from an infected patient. For a CDC fact sheet on Chikungunya, please [click here](#).