

West Nile fever epidemic in Israel

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Israel is seeing the largest outbreak of West Nile fever in almost a quarter-century. Case numbers are up 400 percent from the same period last year. Thus far, at least 175 people have contracted the mosquito-borne virus and at least 11 people have succumbed to the infection, according to the Israel Ministry of Health.

This initial stage compares to the entire length of the 2000 outbreak, when serological testing confirmed 439 cases with 29 fatalities.

The virus that causes West Nile fever is a single-stranded RNA virus, from the genus *Flavivirus* that also includes the Zika virus, dengue virus, and yellow fever virus. Birds are the primary hosts of the West Nile virus. Humans and horses both exhibit disease symptoms from infection, but there are only vaccines available for horses at present. Treatments for infected people are supportive only. Humans can't transmit the virus to each other, except in rare cases through blood transfusions, organ transplants or from a mother to her infant during her pregnancy, delivery or while breastfeeding.

About 20 percent of infected individuals will exhibit symptoms of fever, headache, vomiting or a rash. One percent will go on to develop inflammation of the brain and spinal cord that can lead to neck stiffness, confusion and even seizures. Once the infection involves the nervous system, fatality rates rise to about 10 percent. Recovery can take weeks or months.

Typically, outbreaks occur during the late summer months, a byproduct of rising temperatures and humidity. However, given the recent acceleration of heat waves, together with torrential rains and flash floods becoming commonplace, outbreaks of vector-borne viruses like West Nile, malaria, Zika, and dengue are occurring earlier than expected.

Professor of molecular virology Roger Hewson, at the London School of Hygiene and Tropical Medicine, told the *Telegraph*, "Israel's hot and humid summers create

an ideal environment for mosquitoes to breed and proliferate. These conditions [climate change] can extend the mosquito breeding season and increase their populations, thereby enhancing virus transmission rates."

The West Nile virus was first isolated in 1937 from a woman in the West Nile region of Uganda. The earliest documented outbreak occurred in July 1951 in an agricultural communal settlement of Maayan Zvi near Haifa, Israel. For decades afterward, most West Nile fever epidemics had occurred in Israel or Africa.

However, due to globalization and mass travel among the world's population, the epidemiology of the West Nile vector-borne disease rapidly shifted by the 1990s. In a recent report on the West Nile virus (WNV), the authors wrote, "WNV was first detected in New York City in 1999 and subsequently spread rapidly throughout the entire Western Hemisphere, including the United States, Canada, and Argentina. Concurrently, epidemic activity increased in Europe, the Middle East, and Russia."

They added, "In 2018, Europe experienced an unprecedented WNV epidemic, with human cases exceeding 1,900, seven times higher than in previous seasons. In 2020, locally transmitted cases of WNV were reported for the first time in the Netherlands and Germany. Evidence suggests interactive WNV cycles on all continents except Antarctica."

Notwithstanding the impact climate change and globalization have had on the emerging rates of infectious diseases and threats posed by pandemic potential pathogens, there is an additional factor of concern in relation to the current outbreak of WNV in Israel. It coincides with the genocidal campaign that has seen Gaza's infrastructure decimated. Health authorities have cited possible direct and indirect links between the outbreak and the ongoing assault on the Palestinian enclave.

Most of the WNV cases have occurred in Tel Aviv, Petah Tikva and Kiryat Ono, located within 80 kilometers of the Gaza border. As a November 2023 article in the *Jerusalem Post* noted, “It is important to note that many nature areas in the South have recently turned into military positions. These locations produce waste and stagnant water, which are ideal breeding grounds for mosquitoes. Moreover, due to the war, there has been a lack of treatment for breeding areas in the South, allowing the mosquitoes to thrive.”

Furthermore, the complete mobilization of all of Israel’s resources to prosecuting this campaign of annihilation also means funds for public health measures are being diverted at the population’s peril. Professor Hewson noted, “Disruptions caused by conflict can exacerbate poor living conditions, leading to inadequate waste management and increased standing water. [The] conflict strains public health resources, making it harder to control mosquito populations effectively and respond promptly to outbreaks.”

There has as yet been no mention of the implications of the WNV outbreak for the 2 million and more Gazans who are trapped in the enclave under conditions where the entire infrastructure has been demolished and access to healthcare, food, water and shelter are nonexistent. There is no way to implement standard public health precautions such as preventing formation of standing water and widespread use of mosquito repellent.

Gaza has become a breeding ground for infectious diseases, with the entire population made vulnerable to large scale epidemics of not just WNV, but flu, pneumonia, bacterial dysentery, cholera, polio, measles and meningitis.

The International Rescue Committee (IRC) noted in mid-April that even if an immediate ceasefire were implemented, they expected nearly 12,000 people would lose their lives in Gaza as a result of disease. And if the genocidal campaign persisted, nearly 90,000 could die of secondary health impacts.

Dr. Seema Jilani, Senior Health Technical Advisor for Emergencies, observed, “With Gaza’s health system decimated by Israel, diseases once easily controlled are now spreading, and children, especially malnourished children, are the most susceptible. Projections suggest that the spread of cholera, measles,

polio, and meningococcal meningitis pose a mortal threat ... Immunity, previously ensured thanks to high levels of vaccination, is now decreasing especially among children and babies, who have now missed multiple doses of key vaccines including Hepatitis B, polio, and rotavirus.”

Jilani added, “Respiratory infections and other endemic infectious diseases are currently widespread due to exposure, overcrowding in shelters, lack of access to proper sanitation facilities, and inability to access treatment. The IRC and partners working in Gaza have seen children die from diarrhea—affecting children at rates 25 times higher than before October 7th—otherwise easily treated with fluids and antibiotics. Half of the over 330,000 respiratory infections reported from October to January were children under 5, many of whom might face fatal or debilitating consequences given the current state of health care in Gaza.”



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