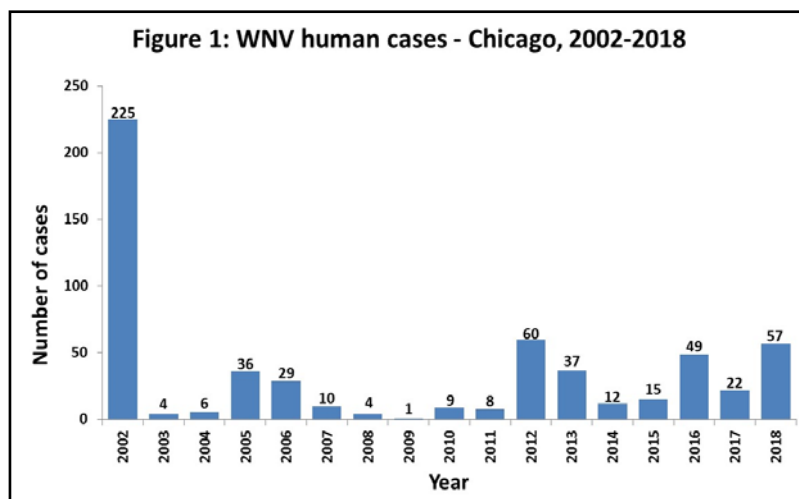


# Healthy Chicago Data Brief

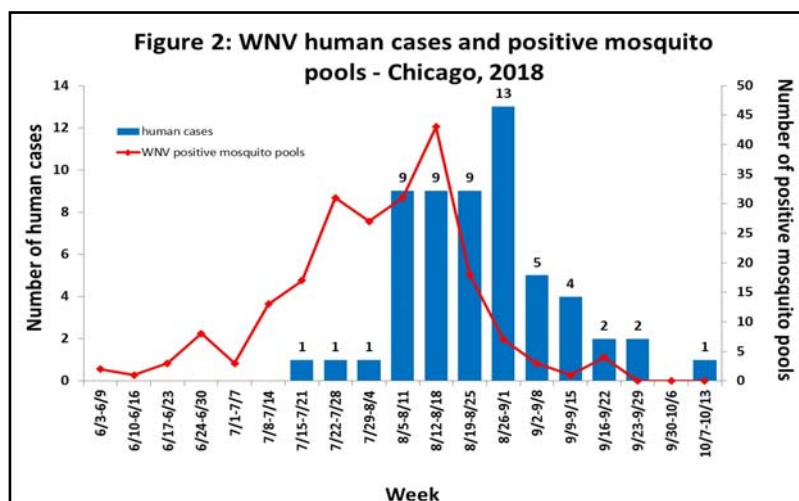
## West Nile Virus



West Nile virus (WNV), which is most commonly spread by the bite of an infected *Culex* mosquito, first emerged in the eastern U.S. in 1999. In 2002, WNV reached Chicago for the first time with 225 human cases reported that summer. In response, the Chicago Department of Public Health (CDPH) implemented city-wide surveillance and mosquito control measures, which resulted in a dramatic decline of human cases in subsequent years (Figure 1). Chicago continues to have one of the most robust urban mosquito control programs in the country.



In 2018, CDPH completed its 16<sup>th</sup> consecutive year of data-driven mosquito monitoring and control. In the spring, CDPH placed larvicide in more than 80,000 catch basins across Chicago to help eliminate immature mosquitos. From June to September, adult mosquitos were collected from 83 traps across the city, examined under microscopes to determine species and sex, “pooled” with mosquitos that could carry WNV and then tested for the virus on a weekly basis. When a substantial density of WNV was detected in mosquito pools for 2 consecutive weeks, CDPH sprayed implicated geographic areas to control adult mosquitos. In 2018, we sprayed four times, covering six wards and 84.2 linear miles.



While most people infected with WNV do not have symptoms, about one in five develop a fever and/or mild symptoms. About one in 150 infected people develop a serious illness that affects the central nervous system and can result in death. Serious illness can occur in people of any age but those over the age of 60 and those with certain medical conditions are at greater risk.

In 2018, temperature and precipitation conditions were favorable for breeding *Culex* mosquitos. Health care providers reported 57 human WNV cases in Chicago. Human case reports peaked in August, about two weeks after rises in positive mosquito pools (Figure 2), consistent with previous years. Forty-four percent (44%) of reported cases were in Chicago residents older than 60 years, 77% were hospitalized and three died (Table 1).

**Table 1: WNV human case details - Chicago, 2018**

	#	%		#	%
Gender			Race/ethnicity		
Female	28	49.1	Black	17	29.8
Male	29	50.9	Hispanic	12	21.1
Age			White	22	38.6
0-19	0	0.0	Oth/unk*	6	10.5
20-39	9	15.8	Vital status		
40-59	23	40.4	Alive	43	75.4
60+	25	43.9	Deceased	3	5.3
Hospitalization			Unknown*	11	19.3
Yes	44	77.2			
No	9	15.8			
Unknown*	4	7.0			

\*some case details are unknown because an investigation could not be completed

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## Improving Health Equity

CDPH is committed to achieving health equity, ensuring every resident has the opportunity and resources they need to get and stay healthy. WNV can be found in almost every part of Chicago and in every demographic group. Preventing human infection relies primarily on reducing the mosquito population. Decisions on how to best reduce the mosquito population are based on real-time mosquito data collected throughout the city and are not influenced by case demographics. By far the most effective intervention is larvicide, which is applied to more than 80,000 catch basins based on historic data. In areas where WNV-infected adult mosquitos emerge, data-based spraying decisions help ensure equitable prevention efforts.

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### How can you prevent West Nile virus?

Mosquitoes can lay eggs in small amounts of standing water, so limiting their habitats helps reduce the spread of the virus.

- Regularly empty outdoor water sources such as buckets, flower pots, pool covers, birdbaths and pet dishes.
- Make sure doors and windows have tight-fitting screens to prevent mosquitos from entering homes.

People can also reduce personal risk of WNV by taking steps to keep mosquitos from biting.

- When possible, stay inside at dusk, dawn and other times of heavy mosquito activity.
- If you need to be outside, wear long sleeves, long pants and socks and use an EPA- registered insect repellent (see link below) properly to prevent mosquito bites.

### What is CDPH doing to prevent West Nile virus?

- Treating 80,000+ catch basins with larvicide every spring to reduce the mosquito population before mosquitos emerge
- Performing field surveillance across Chicago to monitor and test mosquitos for WNV and other viruses
- Spraying to kill adult mosquitos in targeted areas when WNV-infected mosquitos are in abundance
- Distributing information to the public about personal protection and water source reduction
- Disseminating reports highlighting weekly mosquito activity and testing results during the mosquito season

### Additional Resources

#### National statistics and maps

<https://www.cdc.gov/westnile/statsmaps/index.html>: This page includes additional links and an interactive map to view current or historical national, state and county-level data for human cases of WNV

#### Environmental Protection Agency (EPA)-registered insect repellents search tool

<https://www.epa.gov/insect-repellents/find-repellent-right-you>: Find an insect repellent containing the active ingredient DEET, Picaridin, IR3535, Oil of lemon eucalyptus, Para-menthane-diol or 2-undecanone

#### Additional prevention tips

<https://www.cdc.gov/westnile/prevention/index.html>



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## ChicagoHealthAtlas.org

The Chicago Health Atlas is a website developed by CDPH and the Smart Chicago Collaborative to allow users to easily explore, analyze and download health-related data for the city of Chicago. Users can view data on their desktop or mobile device for more than 160 data indicators to explore the demographics, health outcomes, behaviors and social characteristics of Chicago residents and their neighborhoods.

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