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Think You're Safe Now? Think Again.

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This year West Nile virus has hardly been a blip on the radar screen in the Washington area. Out of 1,191 cases and 30 related deaths reported in the United States so far in 2004, only five cases have been in Maryland and only three in Virginia. The District has reported no cases of West Nile virus infection.

But the danger is not gone. Outbreaks wax and wane from season to season and region to region, but the virus is entrenched in insect and bird populations and likely will recur. We need vaccines and treatments so that we can relegate West Nile to the list of diseases that we can handle easily.

West Nile virus was discovered in 1937 in Uganda, but it did not find its way to the United States until 1999. It infects birds and other animals and is transmitted by mosquitoes.

People infected with West Nile usually experience mild, flu-like symptoms, but in rare cases, the virus can infect the brain, causing life-threatening conditions such as encephalitis and meningitis.

West Nile first appeared in the Western Hemisphere in the New York City area. As it has reemerged each subsequent summer, it has spread -- to the Northeast and the mid-Atlantic, to the South and Midwest, and ultimately to the West. What started out as a relatively small threat in 1999 (62 reported human cases) has become an annual epidemic involving thousands. This summer's hot spots are Arizona and California, where nearly 656 cases and 14 deaths have been reported so far. We have not yet reached the peak of the epidemic, which usually occurs in September.

We cannot predict where the next hot spot will be. We also do not know why areas hit hard in the early years of the epidemic have been relatively free of West Nile disease recently. Perhaps people and birds exposed to the virus develop immunity. But as protected bird populations die off and are replaced by their offspring, a new wave of infections could crop up throughout the country.

Given the disease's seasonal nature and its unpredictable pattern, it is essential to develop measures to counteract it. Since the first cases were reported in the United States, the Department of Health and Human Services, particularly the Centers for Disease Control and Prevention and the National Institutes of Health (NIH), as well as local and state public health authorities, have responded with a vigorous public health and research program aimed at improved surveillance and public awareness, vector control and the development of diagnostics, treatments and preventive strategies.

NIH-sponsored research, conducted with partners in academia and industry, has yielded several potential vaccines to prevent infection. One promising candidate is being tested in human volunteers, while others

will enter clinical trials soon.

Several innovative treatments also are being tested to treat people who are infected with West Nile. For example, in a clinical trial being conducted at 60 sites across the country, hospitalized patients at high risk for developing encephalitis, a serious inflammation of the brain, are being given antibodies from people in Israel who recovered from West Nile virus infection. These patients are being monitored to see if the antibody treatment prevents the most severe manifestations of West Nile virus disease.

In addition, a large number of drugs are being screened to identify candidates that are effective in preventing and treating West Nile. Several show promise. Studies are underway to develop more sensitive and rapid tests for detecting West Nile virus infections.

Other efforts are focused on the mosquitoes and birds that harbor and spread the West Nile virus. Studies also are being conducted on a novel peptide that kills mosquito larvae by starving them to death.

Outbreaks of other infectious disease such as SARS and avian influenza have taught us that even when a disease seems contained, it remains essential to continue a sustained focus and commitment to the biomedical research that ultimately can yield tools for prevention and treatment. This is especially true with West Nile virus.

Not many people will be thinking about West Nile virus in January. But the research effort must continue until we have effective therapies for controlling this unpredictable epidemic.

Meanwhile, it is essential to avoid mosquito bites to the extent possible by using repellent and protective clothing, installing and repairing screens to keep mosquitoes outdoors and eliminating sources of standing water around the home. As we wait for a cure, simple measures dictated by common sense can go a long way.

-- Anthony S. Fauci

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