

Transmission of West Nile Virus to a Patient from a Donor Whose Blood Test was Negative

(Press release from United Blood Services – Aug. 26, 2004)

United Blood Services announced that earlier this summer an Arizona patient received a transfusion of blood that was positive for West Nile virus, even though the blood tested negative for the virus at the time of donation. United Blood Services performed a follow-up investigation using a different, more sensitive testing method that showed that the donation was weakly positive for West Nile virus.

The patient has since passed away. “We are holding the patient’s family and friends in our thoughts in their time of sorrow,” said Peter Tomasulo, MD, Chief Medical Officer for Blood Systems, the parent organization of United Blood Services.

United Blood Services is collaborating with local and national health authorities in the evaluation of this situation.

Background

How does United Blood Services protect the blood supply from West Nile virus?

United Blood Services asks every blood donor about their current health and any signs or symptoms of West Nile virus, then tests every blood donation for the virus. We have a very sensitive and effective test; however, sometimes the amount of West Nile virus in the blood sample is so small it cannot be detected.

The recognized testing method is called mini-pool testing. We batch 16 samples together and test them all at once. This is an effective testing method for West Nile virus used by blood centers across the country under a research protocol approved by the US Food and Drug Administration. Blood centers also have limited access to a more sensitive testing method that uses the same test, but tests samples one-by-one instead of in mini-pools. While we’ve more than doubled our testing capacity in the past year, it’s physically impossible for us right now to use this individual sample testing method on every donation. So we prioritize this limited resource and use it in areas where the West Nile outbreak is greatest. We developed a sophisticated computer program to track the development of this year’s epidemic and we look at the spread of the virus every single day so that we can know where to implement this individual sample testing to help prevent as many cases as possible. At the time of the donation, we were using mini-pool testing in the area where the donor lives. As our computer analysis showed the progress of the virus as it spread through Maricopa County, we began using the individual sample testing method on donations from people who live in that area.

Testing for West Nile virus is evolving. There was no test available in 2002. Blood centers worked with test manufacturers, public health officials and the FDA and rapidly developed a test that became available July 1 just last year. When we prepared our strategy to fight West Nile virus this year, we looked at how the epidemic behaved in the

years since 1999, when it first appeared in the US. Every year, the first cases were detected in early to mid July. We planned to be ready to implement single unit testing in mid June, a month ahead of time. But we saw our first case in Arizona in early May.

Is mini-pool testing effective?

The mini-pool testing method is very effective. Last year, nationwide, it detected West Nile virus in approximately 1,000 blood donations and prevented them from being transfused. In 2002, when there was no test for West Nile virus, there were more than 20 cases and several deaths that were linked to West Nile virus that may have been transmitted by transfusion. US blood centers began testing in 2003 and that year there were six West Nile virus transfusion-related cases with one death. The mini-pool testing has been very effective.

What is the risk of contracting West Nile virus from a blood transfusion?

The risk of contracting West Nile virus from a transfusion is very small. If a patient's physician prescribes a transfusion, the lifesaving benefits of that transfusion far outweigh the very small risk of West Nile virus.

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