

Defining Moments in *MMWR* History: Possible Association Between Zika Virus Infection and Microcephaly—Brazil, 2015

[Announcer] This program is presented by the Centers for Disease Control and Prevention.

[Dr. Rasmussen] Welcome to *Defining Moments in MMWR History*. I'm your host, Dr. Sonja Rasmussen, Editor-in-Chief of the *MMWR*.

In early 2015, an outbreak of infections with Zika virus—a flavivirus transmitted by *Aedes* mosquitoes—was first recognized in northeastern Brazil. By September, a sharp increase in the number of babies born with microcephaly was reported in areas affected by the outbreak. The Brazil Ministry of Health established a task force to investigate the possible association between microcephaly and Zika virus infection during pregnancy. They also established a registry to capture microcephaly cases and pregnancy outcomes among women suspected to have had Zika virus infection during pregnancy.

On January 22, 2016, *MMWR* first published a report on the possible association between Zika virus infection and microcephaly. This was the first of more than 60 *MMWR* reports on Zika virus, which have provided critical guidance and recommendations for public health practice worldwide.

Today, I'm talking with Dr. Peggy Honein, co-lead for the Pregnancy and Birth Defects Task Force for CDC's Zika response. Dr. Honein is an epidemiologist and Acting Director of the Division of Congenital and Developmental Disorders at CDC. Thank you for joining me today, Peggy.

[Dr. Honein] Thanks for having me, Sonja.

[Dr. Rasmussen] Remind us. What are the signs and symptoms of someone infected with Zika virus?

[Dr. Honein] The most common symptoms of Zika are fever, rash, conjunctivitis, headache, joint pain, and muscle pain. Most people infected with Zika virus either have very mild symptoms or don't have any symptoms at all. Women who are infected with Zika virus during pregnancy, have an increased risk of having a baby with certain birth defects, including microcephaly, regardless of whether they have symptoms of Zika.

[Dr. Rasmussen] What is microcephaly and why is it important?

[Dr. Honein] Microcephaly is when a baby's head is smaller than expected, compared to babies of the same age and sex. Babies with microcephaly often have smaller brains and their brains might not have developed properly. Microcephaly is associated with many poor health outcomes, including feeding challenges, sleeping difficulties, motor impairment, vision and hearing

abnormalities, and seizures and many babies with microcephaly will have severe lifelong health challenges.

[Dr. Rasmussen] Take us back to this time. What did you and other CDC experts do when you first heard about these babies with microcephaly in Brazil?

[Dr. Honein] To address these reports of microcephaly coming from Brazil, CDC assembled experts in birth defects epidemiology, reproductive health, and the Zika virus. On January 15, 2016, CDC released a Health Alert Network advisory to warn pregnant women about the potential risk of travel to areas with Zika and just a few days later, on January 19, CDC released the first MMWR with interim clinical guidance for pregnant women with possible Zika virus infection. Just a few days after that, on January 22, CDC activated its Emergency Operations Center to coordinate the public health response to this outbreak. That same day, MMWR released the report we are discussing today.

[Dr. Rasmussen] What role did that report play in identifying Zika as a cause of birth defects?

[Dr. Honein] That report really laid the groundwork for our surveillance and research efforts to identify the full impact of Zika virus infection during pregnancy. It sounded the alarm and really indicated to us that our work on Zika virus was just beginning.

[Dr. Rasmussen] What other types of studies have been done to better understand Zika as a cause of birth defects?

[Dr. Honein] In early 2016, CDC rapidly established a surveillance network in collaboration with state, local, tribal, and territorial health departments to identify and monitor all pregnancies with laboratory evidence of possible Zika virus infection. CDC also collaborated with state and territorial health departments to implement rapid birth defects surveillance for microcephaly, brain abnormalities, and other serious birth defects that have been linked to Zika virus infection regardless of the Zika virus testing results. These two surveillance systems each make unique contributions because not every pregnancy that's been exposed to Zika virus will be tested for Zika and many pregnant women might not be tested during the brief time period when we can identify Zika virus infection.

[Dr. Rasmussen] What strategies have been recommended to prevent transmission of this virus?

[Dr. Honein] Transmission of Zika virus can be prevented by preventing mosquito bites and sexual transmission of the virus. CDC continues to recommend that pregnant women avoid travel to any areas where there's risk of Zika because of the serious risk of birth defects. CDC also recommends that women and men who are planning to conceive in the near future consider waiting to conceive after travelling to areas with risk of Zika.

[Dr. Rasmussen] Tell us about the role the *MMWR* reports have played in this outbreak.

[Dr. Honein] The *MMWR* has been critical to our efforts to rapidly disseminate new information as it's discovered. Little was known about Zika virus, and particularly infection during

pregnancy, before the outbreak began. Through the MMWR, we have published reports about Zika virus and pregnant women and infants in the United States and released important clinical guidance for the evaluation and management of both pregnant women and infants with possible Zika virus infection. We continue to update this clinical guidance as we gather new information.

[Dr. Rasmussen] What are some of the lessons that have been learned from this outbreak and its response?

[Dr. Honein] The Zika virus outbreak and emergency response highlighted the medical vulnerability of pregnant women and infants to emerging infections and other health threats and reinforced the need to carefully monitor the health of these populations. It also demonstrated the importance of public health collaboration between different disciplines within the field, including maternal and child health, infectious disease, epidemiology, and vital statistics.

[Dr. Rasmussen] Dr. Honein, thank you for joining me today. *MMWR* is proud of its role in communicating critical findings of this investigation and response. For more information on this outbreak, or to learn more about the latest in public health, visit cdc.gov/MMWR.

Until next time, this is Dr. Sonja Rasmussen for *Defining Moments in MMWR History*.

[Announcer] For the most accurate health information, visit cdc.gov or call 1-800-CDC-INFO.