Emergence of Zika virus and global implications

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After initial isolation from macaque monkeys living in the Zika forest of Uganda in 1947, Zika virus remained dormant for years, aside from sporadic outbreaks in Asia, tropical Africa and the South Pacific. In 2015, the virus made international headlines after the World Cup in Brazil, when numerous cases of birth defects including microcephaly were linked to the virus. By December 2015, over 1.3 million Zika cases were reported in Brazil. Shortly after Puerto Rico fell victim to Zika, with over 36,000 cases in 2016, and continued spread due to vulnerability from recent hurricanes. Zika virus, a member of the family *Flaviviridae*, spreads rapidly via its primary vector, the daytime-active *Aedes aegypti* mosquito. Additional modes of transmission include sexual, blood-borne and maternal-fetal transmission. Areas with active Zika outbreaks include warm/temperate regions in Mexico, Central and South America, the Caribbean, mid-Africa, and southern Asia. Viral incubation averages 7-10 days. Symptoms of active infection are similar to those of dengue or chikungunya, and include headache, fever, rash, conjunctivitis, arthralgias, and gastrointestinal symptoms, although many may be asymptomatic. Illness is generally mild, although neurologic complications such as Guillain Barré may occur. Maternal-fetal transmission with resultant microcephaly is well documented, and pregnant women are at greatest risk during the first trimester. Pregnant women presenting with symptoms should be referred for testing. As treatment remains supportive, measures to prevent disease are paramount. Healthcare providers must play a strong role in the education of individuals planning travel to endemic areas, including protective measures such as mosquito repellent and window screens. Routine mosquito spraying of susceptible areas is particularly important, and has been effective in preventing Zika infection in San Pedro and the Cayman islands. Prenatal counseling plays a vital role, as viral RNA can remain in semen for up to three months post infection. Although there are no effective vaccines to prevent infection, a great deal of research is underway. Zika has become a significant global public health issue, raising concerns regarding international travel, sexual transmission, and blood product safety. Only through global partnerships can we hope to halt the spread of the virus.

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