Babesiosis Update: National and New Jersey Trends

Date: March 29, 2023

Public Health Message Type: ☐ Alert ☐ Advisory ☐ Update ☒ Information

Intended Audience: ☐ All public health partners ☒ Healthcare providers ☒ Infection preventionists ☒ Local health departments ☐ Schools/Childcare centers ☐ ACOs ☐ Animal health professionals ☐ Other:

Key Points:

- CDC recently released Trends in Reported Babesiosis Cases — United States, 2011–2019 showing that incidence has significantly increased in northeastern states, including a 41% increase in New Jersey (N.J.).
- Babesiosis cases are reported throughout the State, with the highest average incidence rate in Hunterdon County (18.27) followed by Warren (6.03), Sussex (4.83), and Atlantic County (4.73).
- Babesiosis is a tickborne disease caused by intraerythrocytic Babesia parasites and in N.J. is transmitted from bites of blacklegged ticks, which is the same tick that transmits Lyme disease. In the U.S. most babesiosis cases are caused by *Babesia microti*.
- Transmission of babesiosis can also occur through blood transfusions, transplantation of organs from infected donors, or congenital (mother-to-child) transmission.
- Babesia infection can be asymptomatic or cause mild to severe illness that can be fatal, particularly among persons who are immunocompromised or asplenic.
- Common symptoms are similar to other tickborne diseases and include fever, muscle and joint pain, and headache. In certain patients, severe complications can occur, including thrombocytopenia, renal failure, and acute respiratory distress syndrome.
- Babesiosis can be treated using a combination of antimicrobial medications, such as azithromycin and atovaquone.
- There are several tickborne diseases reported in N.J. that may present with similar symptoms. While many tickborne diseases can be treated with antibiotics (e.g., anaplasmosis, ehrlichiosis, spotted fever group rickettioses), parasitic and viral tickborne diseases (e.g., babesiosis, Powassan) have different treatment recommendations.
- Preferred testing for babesiosis includes detection of DNA in a whole blood specimen by PCR or identification of intraerythrocytic Babesia organisms by light microscopy in a Giemsa, Wright, or Wright-Giemsa–stained blood smear. Babesiosis can also be identified through IFA total Ig or IgG antibody tests.

Actions:

- Healthcare providers should consider babesiosis (and tickborne arboviruses – Powassan, Heartland virus, Bourbon virus) in addition to bacterial pathogens when a tickborne disease is suspected.
- Healthcare providers should immediately report babesiosis cases to the local health department (LHD) if transmission is suspected via blood transfusion or organ transplant (all babesiosis cases should be reported to the LHD within 24 hours of diagnosis).

- Confirmation and speciation of thick and thin Giemsa-stained blood smears is available at NJDOH Public Health Laboratory (PHEL). Hospitals are encouraged to send questionable blood smears to PHEL along with a completed BACT-109 form (https://www.nj.gov/health/forms/bact-109.pdf).
- Testing for viral tickborne diseases (Powassan, Heartland, Bourbon viruses) is available through NJDOH. Clinicians who would like to request arboviral disease testing should complete the Arboviral Testing Request worksheet and send via encrypted email to CDSVectorTeam@doh.nj.gov.

Resources:

- NJDOH Babesiosis: https://www.nj.gov/health/cd/topics/babesiosis.shtml
- CDC Babesiosis: https://www.cdc.gov/parasites/babesiosis/index.html
- Trends in Reported Babesiosis Cases — United States, 2011–2019: https://www.cdc.gov/mmwr/volumes/72/wr/mm7211a1.htm

Contact Information:

- Communicable Disease Service Vector Team, CDSVectorTeam@doh.nj.gov
- The Communicable Disease Service at (609) 826-4872 during business hours

Babesiosis Trends in N.J., 2011-2021

Babesiosis incidence rates have increased 48.9% between 2011-2021 (**Figure 1**). Cases were reported most often in persons between 50 and 80 years of age (**Figure 2**). 24.2% of cases were hospitalized and 1.6% of cases died. Between 2011-2021, the top five counties with the highest average annual incidence rate are Hunterdon (18.27), Warren (6.03), Sussex (4.83), Atlantic (4.73), and Monmouth (4.08).

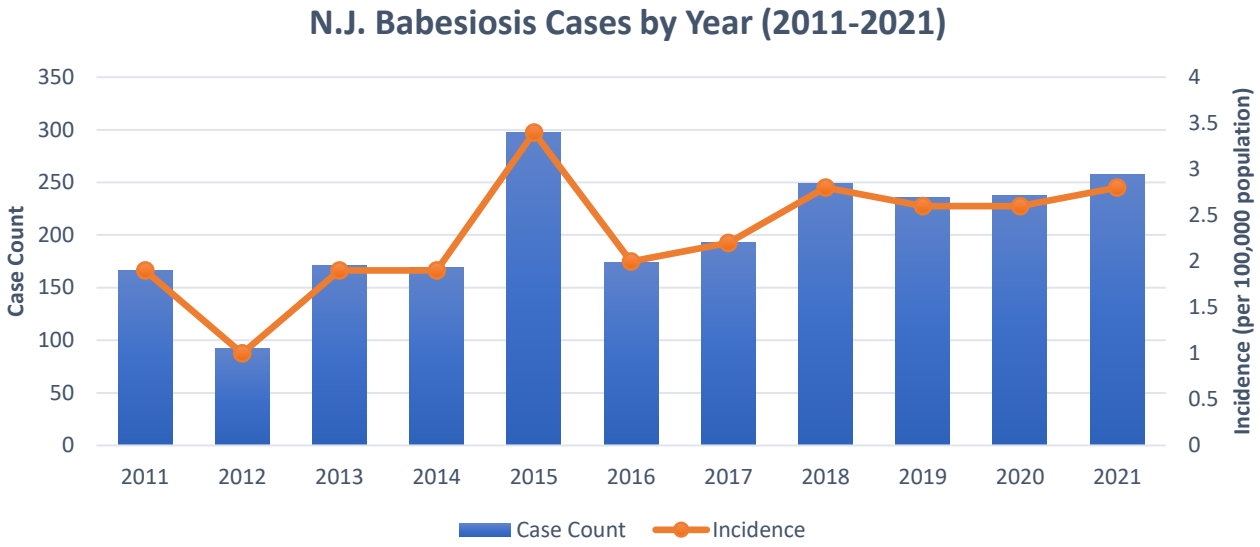

Figure 1. Babesiosis cases in New Jersey has steadily increased over the eleven-year period.

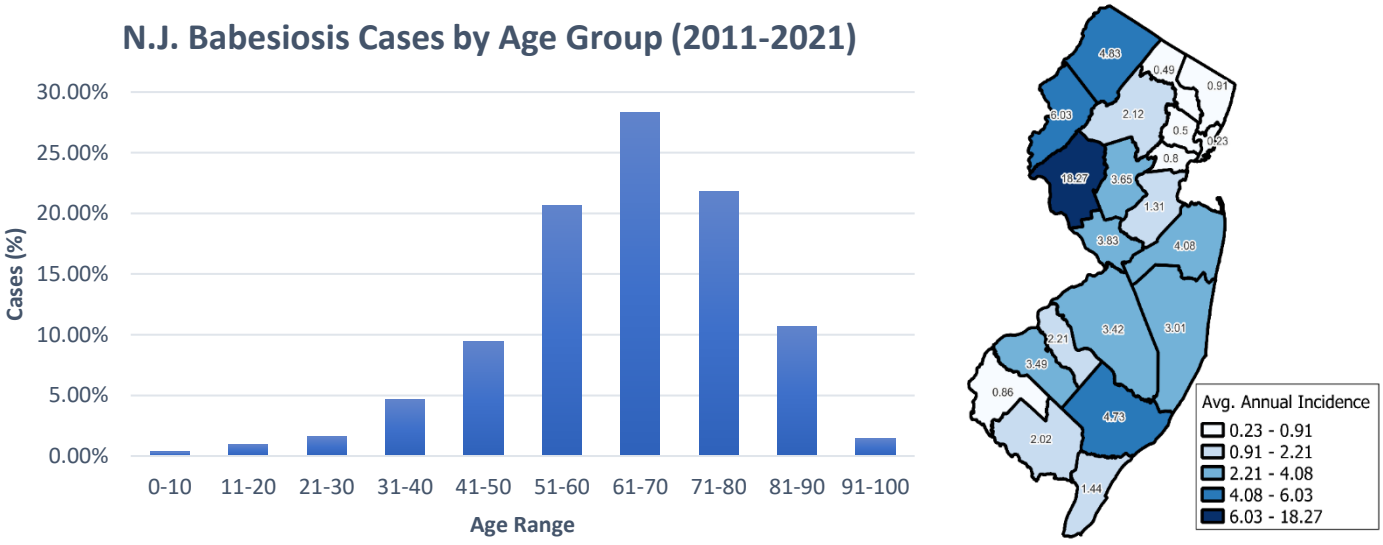

Figure 2. 70% of babesiosis cases between 2011-2021 are in the 50-80 age group. Babesiosis incidence is higher in the central and northwest regions of New Jersey.