



Nebraska Department of Health and Human Services
HEALTH ALERT NETWORK
Advisory



TO: Primary care providers, infectious disease, laboratories, infection control, and public health

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RE: COLLECTIONS OF ESTABLISHED POPULATIONS OF *IXODES SCAPULARIS*
(BLACK-LEGGED TICK) IN NEBRASKA

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This report addresses the first confirmation of established (per CDC criteria) *Ixodes scapularis* (black-legged tick or deer tick) populations in Nebraska (Douglas, Sarpy, and Saunders counties).

Key messages for Nebraska clinicians:

For the past 30 years the Office of Epidemiology at Nebraska Department of Health and Human Services has carefully monitored the ecology of Nebraska's tick species implicated in human disease, and any patients with tick-borne diseases reported to public health. Until recently, we have not identified established populations of the *Ixodes scapularis* (black-legged) tick, the known vector of Lyme disease, nor have we identified patients with confirmed Lyme disease (meeting nationally accepted criteria) with plausible local acquisition in Nebraska.

While state and Federal support for tick surveillance field work is limited, in the past year we broadened tick surveillance efforts through a partnership with entomologists at Nebraska Department of Agriculture and the University of Nebraska-Lincoln. As part of this collaboration, in early June, a Nebraska Department of Agriculture entomologist identified for the first time an established population of *I. scapularis* ticks. On June 1, 2019 five larvae, two nymphs, and one adult male *I. scapularis* were collected at a site in Sarpy County. On June 7, a nymph was collected at a site in Douglas County where two adult deer ticks were collected during December 2018. Then on June 8, ten larvae and two nymphs were collected at a site in Saunders County. These collections meet CDC's criteria for *I. scapularis* established populations. CDC's criteria are based on collecting either ≥ 6 individuals or more than one life stage from a specific location in a 12-month period.

Laboratory studies are currently ongoing to determine if any of the collected ticks carry any of the pathogens listed below. Pending this, the local human health risk is unknown, but clearly of increased concern.

I. scapularis is the vector of *Borrelia burgdorferi*, the causative agent of Lyme disease; *Anaplasma phagocytophilum*, the causative agent of human granulocytic anaplasmosis; and

Babesia microti, the causative agent of human babesiosis. Additionally, this tick is also the vector of Powassan virus. At present, human infections with this virus are rare and have only been identified in the New England and mid-Atlantic regions of the U.S.

These findings warrant increased vigilance for infections transmitted by *I. scapularis* on the part of Nebraska health care providers. Healthcare providers need to know and follow recommended testing guidelines to establish the diagnosis of any of these agents, particularly with regards to two-step testing for suspected Lyme disease at a reputable laboratory. Such testing is readily available through commercial clinical reference laboratories (e.g. ARUP, Mayo, Quest, etc.).

Plans for additional tick surveillance are being made. Additional information will be published as it becomes available.

Previous information regarding clinical symptoms, testing and treatment were sent out in earlier health alerts and can be found here:

Tick-Borne Diseases in Nebraska

(<http://dhhs.ne.gov/han%20Documents/ADVISORY031919.pdf>)

Lyme Disease in Nebraska

(<http://dhhs.ne.gov/han%20Documents/ADVISORY042319.pdf>)

For more information please visit:

CDC Anaplasmosis Page: <https://www.cdc.gov/anaplasmosis/index.html>

CDC Lyme Disease Page: <https://www.cdc.gov/lyme/>

CDC Tickborne Diseases of the US: A Reference Manual for Health Care Providers, Fourth Edition (2017): <https://www.cdc.gov/lyme/resources/TickborneDiseases.pdf>

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