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General Information

Communicable Disease
and Epidemiology
(630) 221-7553

Environmental Health
(630) 682-7400

Immunizations
(630) 682-7400

Sexually
Transmitted Diseases
(630) 221-7553

HIV/AIDS
(630) 221-7553

Tuberculosis
(630) 221-7522

School Health
(630) 221-7300

Animal Services
(630) 407-2800

Please contact
Communicable Disease
and Epidemiology at
(630) 221-7553
with suggestions
or to be added to the
distribution list.

The purpose of this two-page surveillance update is to promote the control and prevention of **communicable disease (CD)** by providing clinically relevant information and resources to healthcare professionals in DuPage County.



Under the Microscope Lyme Disease

For questions or to report a suspect or known case of Lyme disease, please call the DuPage County Health Department at (630) 221-7553.

Lyme disease is caused by the bacterium *Borrelia burgdorferi* and rarely, *Borrelia mayonii*. It is transmitted to humans by the bite of an infected **blacklegged tick** (*Ixodes scapularis*, also known as the **deer tick**).¹ Typical **symptoms** include fever, headache, fatigue, and a characteristic skin rash called **erythema migrans (EM)** that occurs in 70%-80% of patients at the site of a tick bite after an incubation period of 3-30 days (average is about 7 days).¹ If left untreated, infection can spread to **joints** (e.g., arthritis in one or a few joints), the **heart** (e.g., acute onset of atrioventricular conduction defects), and the **nervous system** (e.g., facial or Bell's palsy).^{1,2} Lyme disease is diagnosed based on symptoms, physical findings (e.g., rash), and the **possibility of exposure to infected ticks**.¹

Lyme disease is the **most common vector-borne disease in the U.S.**, and accounted for **82% of all tickborne disease reports during 2004-2016**.³ Lyme disease cases are concentrated in states in the Northeast and upper Midwest.⁴ Although cases occur throughout the year, **most cases have onset in June, July, or August**, the three months in which human outdoor activity is increased.⁴

Ticks find their hosts by detecting animals' breath and body odors, or by sensing body heat, moisture, and vibrations. Some species can even recognize a shadow. In addition, ticks pick a place to wait by identifying well-used paths. Then they wait for a host, resting on the tips of grasses and shrubs. **Ticks can't fly or jump, but many tick species wait in a position known as "questing."**⁵ While questing, ticks hold onto leaves and grass by their third and fourth pair of legs. They hold the first pair of legs outstretched, waiting to climb on to the host. When a host brushes the spot where a tick is waiting, it quickly climbs aboard. Some ticks will attach quickly and others will wander, looking for places like the ear, or other areas where the skin is thinner.⁵

In a continuing effort to assess and monitor Lyme disease risk in Illinois, public health officials have **identified infected blacklegged ticks in several counties throughout Illinois, including DuPage County**. The incidence of Lyme disease in Illinois has overall increased in recent years, with a number of cases **acquiring the infection within Illinois** (without a history of travel to regions previously known to be endemic, e.g., Wisconsin).⁶

Lyme disease is **diagnosed** based on **symptoms**, physician-observed, objective **physical findings** (e.g., EM \geq 5 cm, facial palsy, or arthritis), and the possibility of exposure to infected ticks (having been in wooded, brushy, or grassy areas, i.e., potential tick habitats, **less than or equal to 30 days before onset of EM**).^{1,7} Not all patients with Lyme disease will develop the characteristic bull's eye rash, and many may not recall a tick bite; **history of a tick bite is not required**.² Laboratory blood tests are helpful if used correctly and performed with validated methods. **Laboratory tests are not recommended for patients who do not have symptoms typical of Lyme disease**.¹ However, **positive results of recommended two-tiered serologic testing can provide confirmation of infection in patients with musculoskeletal, neurologic, or cardiac symptoms**.^{7,8} Just as it is important to correctly diagnose Lyme disease when a patient has it, it is **important to avoid misdiagnosis and treatment of Lyme disease when the true cause of the illness is something else**.^{1,8,9,10,11}

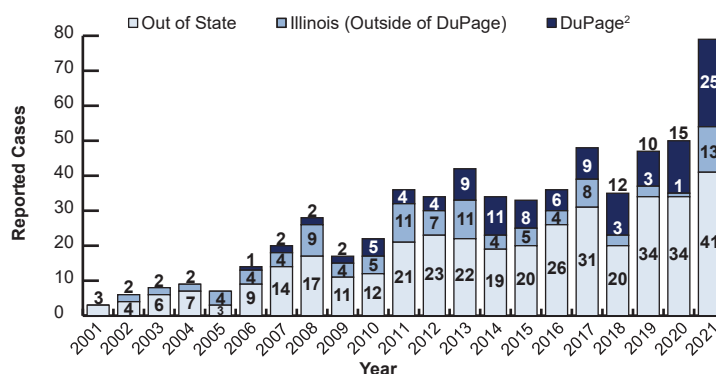
CDC recently published research that shows the economic burden of Lyme disease in the U.S. is between \$345 million and \$968 million each year (2016 U.S. dollars). Additionally, the **average patient cost was approximately \$1,200 per infection and patients with later stages of disease had double the costs of those with early disease**.¹² This further underscores the importance of prevention as well as early recognition and timely, appropriate treatment to prevent illness and complications from Lyme disease.¹¹

Patients treated with **appropriate antibiotics in the early stages of Lyme disease usually recover rapidly and completely**.^{8,13} Steps to **prevent Lyme disease** include using insect repellent containing DEET, light-colored, protective clothing, walking in the center of trails, avoiding wooded and bushy areas with high grass and leaf litter, removing ticks promptly and appropriately, showering soon after being outdoors, proper groundskeeping, and trimming vegetation.^{1,6,14} While it is a good idea to take preventive measures against ticks year-round, extra vigilance is indicated in **warmer months (April-September) when ticks are most active**.^{1,14} The ticks that transmit Lyme disease can occasionally transmit other tickborne diseases as well (e.g., anaplasmosis).^{1,7}

References:

1. www.cdc.gov/lyme/index.html
2. https://ndc.services.cdc.gov/case-definitions/lyme-disease-2022/
3. www.cdc.gov/mmwr/volumes/67/wr/mm6717e1.htm
4. www.cdc.gov/lyme/datasurveillance/index.html
5. www.cdc.gov/ticks/life_cycle_and_hosts.html
6. https://dph.illinois.gov/topics-services/diseases-and-conditions/diseases-a-z-list/lyme-disease.html#resources
7. www.cdc.gov/ticks/tickbornediseases/TickborneDiseases-P.pdf
8. www.cdc.gov/lyme/healthcare/index.html
9. www.cdc.gov/lyme/diagnostictesting/index.html
10. www.cdc.gov/mmwr/volumes/66/wr/mm6623a3.htm
11. www.cdc.gov/lyme/posttids/index.html
12. www.cdc.gov/nceizid/dvbd/media/lyme-tickborne-diseases-increasing.html
13. www.cdc.gov/lyme/treatment/index.html
14. www.cdc.gov/ticks/avoid/index.html

DuPage County Cases of Lyme Disease by Reported Exposure Site(s),¹ 2001-2021 (n=504)



1. Some cases were exposed to more than one site; cases with unknown exposure (n=28) were not included in this graph.
2. Data for DuPage exposures are not readily available before 2005.
Source: Illinois Department of Public Health and Illinois-National Electronic Disease Surveillance System

DUPAGE COUNTY HEALTH DEPARTMENT
CASES¹ OF REPORTABLE DISEASES*

* Last updated by the Illinois Department of Public Health, effective January 12, 2022.

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	Report Within	2022		2021		2020		2019		2018		Median	
		Apr	Jan-Apr	Jan-Apr	Total	Jan-Apr	Total	Jan-Apr	Total	Jan-Apr	Total	Jan-Apr	Total ('18-'21)
Vaccine Preventable Diseases													
Chickenpox (varicella)	24 hrs	1	4	7	14	6	10	17	47	14	42	7	28
Coronavirus disease 2019 (COVID-19)	3 hrs	7,885	70,537	24,564	110,494	4,983	65,519	n/a	n/a	n/a	n/a	24,564	88,007
Diphtheria	3 hrs	0	0	0	0	0	0	0	0	0	0	0	0
<i>Haemophilus influenzae</i> , invasive	24 hrs	0	0	1	5	5	7	5	16	7	16	5	12
Hepatitis A	24 hrs	0	0	1	2	2	4	4	8	2	6	2	5
Hepatitis B (acute, chronic, perinatal)	7 days	7	46	32	120	35	85	46	131	48	113	46	117
Influenza, deaths in < 18 yrs old	7 days	0	0	0	0	0	0	1	1	0	0	0	0
Influenza, ICU admissions	24 hrs	7	12	0	3	74	83	77	97	112	125	74	90
Measles (rubeola)	24 hrs	0	0	0	0	0	0	0	0	0	0	0	0
Mumps	24 hrs	0	0	0	2	0	1	2	5	5	12	0	4
<i>Neisseria meningitidis</i> , invasive	24 hrs	0	0	0	0	0	0	0	0	0	0	0	0
Pertussis (whooping cough)	24 hrs	0	7	3	8	16	17	14	56	6	34	7	26
Poliomyelitis	3 hrs	0	0	0	0	0	0	0	0	0	0	0	0
Rubella	24 hrs	0	0	0	0	0	0	0	0	0	0	0	0
<i>Streptococcus pneumoniae</i> , invasive disease, in those < 5 yrs old	7 days	0	0	0	1	1	1	1	4	2	6	1	3
Tetanus	7 days	0	0	0	0	0	0	0	0	0	0	0	0
Other Communicable Diseases													
Anaplasmosis	7 days	0	0	0	5	2	2	0	0	0	0	0	1
Anthrax	3 hrs	0	0	0	0	0	0	0	0	0	0	0	0
Arboviral Disease (other and unspecified) ²	7 days	0	0	0	0	0	0	0	0	0	0	0	0
Babesiosis	7 days	0	0	0	2	0	1	0	1	0	1	0	1
Botulism, foodborne	3 hrs	0	0	0	0	0	0	0	0	0	0	0	0
Botulism, other	24 hrs	0	0	0	0	0	0	0	0	0	0	0	0
Brucellosis	3 hrs	0	0	0	0	0	0	0	0	0	0	0	0
Campylobacteriosis	7 days	9	47	43	153	28	104	55	201	33	160	43	157
Chikungunya virus disease	7 days	0	1	0	0	0	0	0	0	0	2	0	0
Cholera	24 hrs	0	0	0	0	0	0	0	0	0	0	0	0
Cryptosporidiosis	7 days	3	5	2	29	3	21	7	41	11	31	5	30
Cyclosporiasis	7 days	0	0	0	19	0	20	0	17	0	141	0	20
Dengue virus infection	7 days	0	0	0	3	0	1	0	4	0	2	0	3
Ehrlichiosis	7 days	0	0	0	2	1	1	0	0	0	0	0	1
Enteric <i>E. coli</i> infections ³	24 hrs	6	9	15	63	11	43	10	56	12	39	11	50
Hantavirus pulmonary syndrome	24 hrs	0	0	0	0	0	0	0	0	0	0	0	0
Hemolytic uremic syndrome	24 hrs	0	0	1	2	0	1	0	0	0	0	0	1
Hepatitis C (acute, chronic, perinatal)	7 days	15	47	52	126	29	99	81	204	72	190	52	158
Hepatitis D	7 days	0	0	0	0	0	0	0	0	0	0	0	0
Histoplasmosis	7 days	1	2	3	9	3	10	5	7	2	6	3	8
Influenza A, novel virus	3 hrs	0	0	0	0	0	0	0	0	0	0	0	0
Legionellosis	7 days	0	3	0	29	5	27	3	65	1	37	3	33
Leptospirosis	7 days	0	0	0	1	0	0	0	0	0	0	0	0
Listeriosis	7 days	0	1	0	2	1	4	1	2	0	0	1	2
Lyme disease	7 days	0	0	2	61	4	42	1	39	3	27	2	41
Malaria	7 days	0	0	0	4	1	1	1	3	3	4	1	4
Ophthalmia neonatorum	7 days	0	0	0	0	0	0	0	0	0	0	0	0
Plague	3 hrs	0	0	0	0	0	0	0	0	0	0	0	0
Psittacosis	7 days	0	0	0	0	0	0	0	0	0	0	0	0
Q fever	3 hrs	0	0	0	0	0	0	0	0	0	0	0	0
Rabies, animal case	24 hrs	0	0	0	5	0	2	0	9	0	8	0	7
Rabies, human case	24 hrs	0	0	0	0	0	0	0	0	0	0	0	0
Rabies, potential exposure	24 hrs	5	14	17	96	15	78	12	107	20	167	15	102
Spotted fever rickettsiosis	7 days	0	0	0	0	0	0	1	1	0	2	0	1
Salmonellosis	7 days	7	26	20	122	29	91	29	112	30	118	29	115
<i>Salmonella</i> Paratyphi infection ⁴	24 hrs	0	1	0	0	2	2	1	1	2	2	1	2
<i>Salmonella</i> Typhi infection	24 hrs	0	0	0	0	0	1	2	3	3	4	0	2
Severe Acute Respiratory Syndrome	3 hrs	0	0	0	0	0	0	0	0	0	0	0	0
Shigellosis	7 days	2	11	3	22	3	6	5	26	3	10	3	16
Smallpox	3 hrs	0	0	0	0	0	0	0	0	0	0	0	0
Smallpox vaccination, complications	24 hrs	0	0	0	0	0	0	0	0	0	1	0	0
<i>Staphylococcus aureus</i> (vancomycin-resistant)	24 hrs	0	0	0	0	0	1	0	0	0	0	0	0
Streptococcal infections, group A invasive disease ⁵	24 hrs	0	2	3	8	8	16	11	32	20	33	8	24
Toxic shock syndrome ⁶	7 days	0	0	0	0	0	1	0	0	1	1	0	1
Trichinosis	7 days	0	0	0	0	0	0	0	0	0	0	0	0
Tuberculosis	7 days	3	8	8	31	3	30	9	46	14	50	8	39
Tularemia	3 hrs	0	0	0	0	0	0	0	0	0	0	0	0
Typhus	24 hrs	0	0	0	0	0	0	0	0	0	0	0	0
Vibriosis (non-cholera)	7 days	0	4	0	2	1	3	1	11	2	14	1	7
West Nile virus disease	7 days	0	0	0	12	0	4	0	6	0	18	0	9
Zika virus disease	7 days	0	0	0	0	0	0	0	0	1	1	0	0
STDs, HIV and AIDS													
AIDS ⁷ (April-June)	7 days	--	3	9	14	6	11	5	12	10	21	6	13
Chancroid	7 days	0	0	0	0	0	0	0	0	0	0	0	0
Chlamydia	7 days	85	562	784	2,388	674	2,216	895	2,699	825	2,545	784	2,467
Gonorrhea	7 days	15	96	187	521	151	563	192	558	131	443	151	540
HIV disease ^{7,8} (April-June)	7 days	--	6	27	48	14	32	16	42	26	40	16	41
Syphilis ⁹	7 days	0	5	14	34	20	75	29	88	25	73	20	74
Congenital Syphilis	7 days	0	0	0	1	0	0	0	0	0	0	0	0
Outbreaks¹⁰													
COVID-19	24 hrs	40	266	106	449	79	327	n/a	n/a	n/a	n/a	106	388
COVID-19 Outbreak Cases		271	2,738	964	4,215	2,383	6,440	n/a	n/a	n/a	n/a	2,383	5,328
Foodborne	24 hrs	0	1	1	2	2	2	1	7	0	5	1	4
Foodborne Outbreak Cases		0	4	3	14	16	16	167	243	0	121	4	69
Waterborne	24 hrs	0	0	0	0	0	0	0	3	0	0	0	0
Waterborne Outbreak Cases		0	0	0	0	0	0	0	12	0	0	0	0
Person to Person (non-COVID-19)	24 hrs	5	18	2	9	26	26	39	57	57	77	26	42
Person to Person Outbreak Cases		60	165	13	105	508	508	681	988	751	1,156	508	748
Other and Unspecified	24 hrs	0	3	0	2	0	0	0	1	0	0	0	1
Other and Unspecified Outbreak Cases		0	25	0	7	0	0	0	15	0	0	0	4

DuPage County healthcare providers and hospitals **must report any suspected or confirmed case of these diseases** to the local health authorities within the number of hours or days indicated.

REPORTING NUMBERS:

Communicable Diseases

(630) 221-7553
24 hours: (630) 682-7400

Tuberculosis

(630) 221-7522

STDs

(630) 221-7553

HIV/AIDS

(630) 221-7553

¹ Provisional cases, based on date of onset

² Including, but not limited to, California serogroup virus diseases, Eastern equine encephalitis virus disease, Powassan virus disease, St. Louis encephalitis virus disease, Western equine encephalitis virus disease, and yellow fever. Chikungunya virus disease, dengue virus infection, West Nile virus disease, and Zika virus disease are listed individually.

³ O157:H7, shiga toxin-producing *E. coli* (STEC)

⁴ *Salmonella enterica* serotypes Paratyphi A, B [tartrate negative], and C

⁵ Includes streptococcal toxic shock syndrome and necrotizing fasciitis

⁶ Due to *Staphylococcus aureus*

⁷ HIV/AIDS data are provided quarterly by IDPH and are provisional, based on date of diagnosis.

⁸ HIV disease counts reflect all newly diagnosed HIV cases (including AIDS) regardless of stage of disease at diagnosis.

⁹ Cases are provisional, based on test date per local health department investigation. Includes syphilis cases staged as primary, secondary, or early non-primary non-secondary.

¹⁰ Listed based on report submission date

Websites

CDC:
www.cdc.gov

IDPH:
www.dph.illinois.gov

DuPage:
www.dupagehealth.org

Archived issues of CD Review are available at:
www.dupagehealth.org/248/Surveillance-Reports-and-Resources