New York State-Specific Trends

Prevention for Patients

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Ticks In New York:

- **~30 species** of ticks are found in New York State.
- **10 species** commonly bite humans.
- **4 species** can potentially transmit disease **(in New York)**

Deer tick
Ixodes scapularis

American Dog tick
Dermacentor variabilis

Lone Star tick
Amblyomma americanum

Woodchuck tick
Ixodes cookei

Fast Tick Facts:

- Ticks crawl—they cannot not jump or fly
- They prefer shady, grassy, wooded areas along trails with abundant wildlife
- They must have direct contact with a host (person or animal) to attach and feed
- Unless removed, ticks attach to a host and feed for several days
  - change appearance over feeding time.

Tick-borne Diseases in New York State:

Disease (causative agent)	Reported NY cases 2001 – 2016*
Lyme disease (*Borrelia burgdorferi*)	79,548
Human Granulocytic Anaplasmosis (*Anaplasma phagocytophilum*)	4,795
Babesiosis (*Babesia microti*)	4,131
Human Monocytic Ehrlichiosis (*Ehrlichia chaffeensis*)	1,097
Rocky Mountain spotted fever (*Rickettsia rickettsii*)	277
Powassan encephalitis (Powassan virus or Deer Tick virus)	25
Tick-borne relapsing fever (*Borrelia miyamotoi*)	10**
Tularemia (*Fransicella tularensis*)	7

* Reported to the NYSDOH by medical providers and clinical laboratories

** Identified in a NYSDOH retrospective and prospective study of patients screening negative for anaplasmosis

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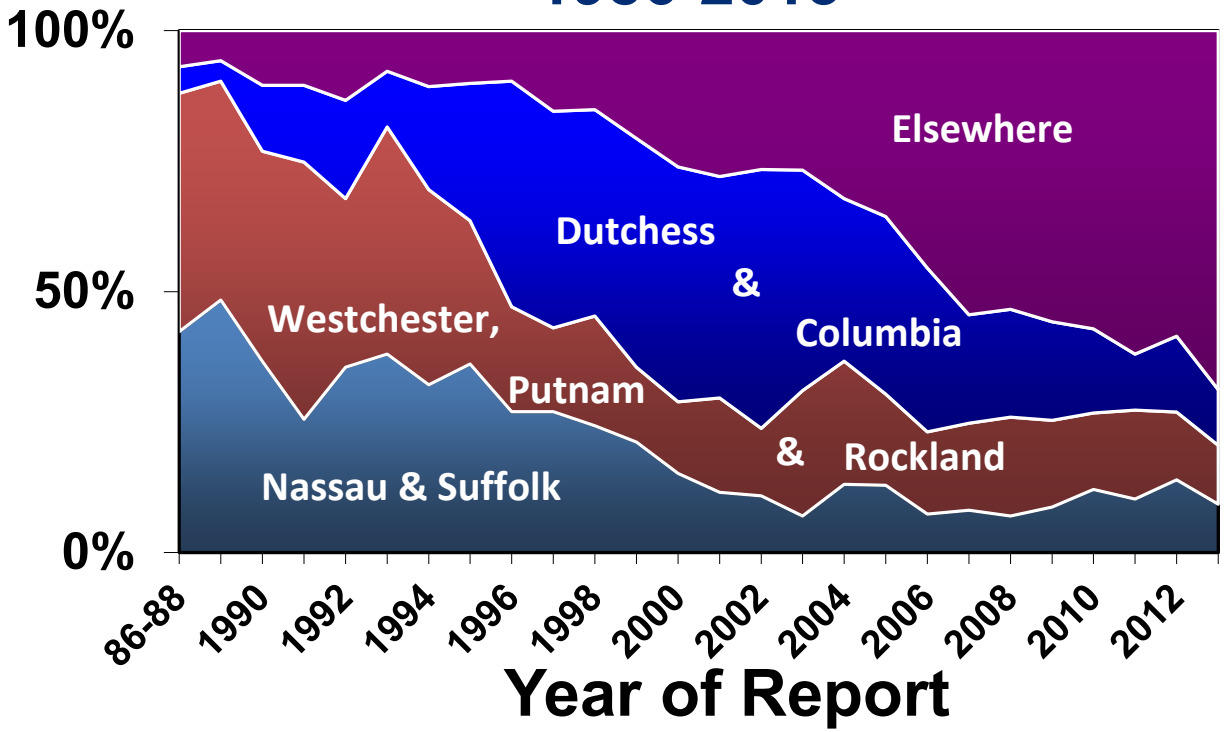
Annual Proportion of Lyme Disease Cases

by Region in New York State (Excluding New York City)

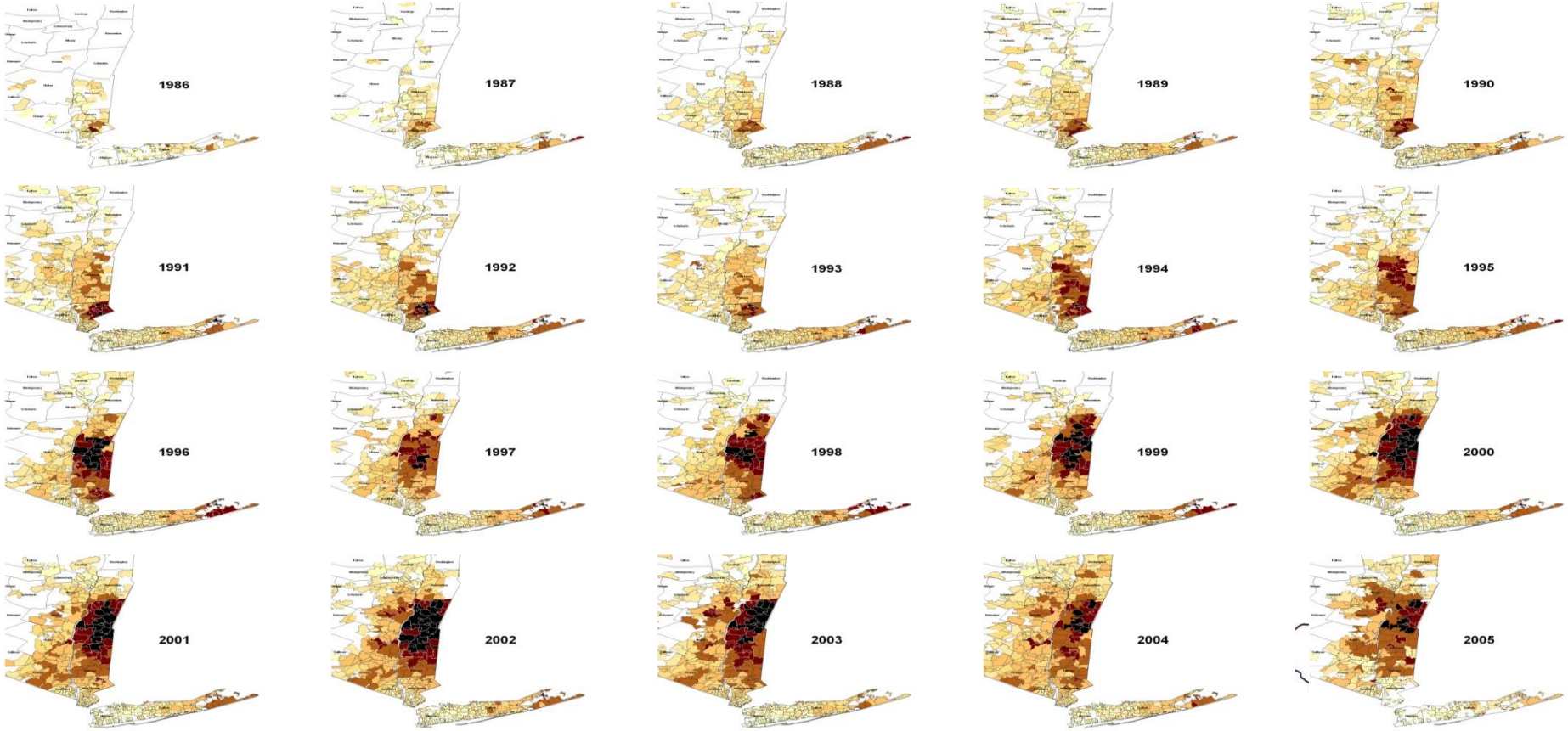
1986-2013



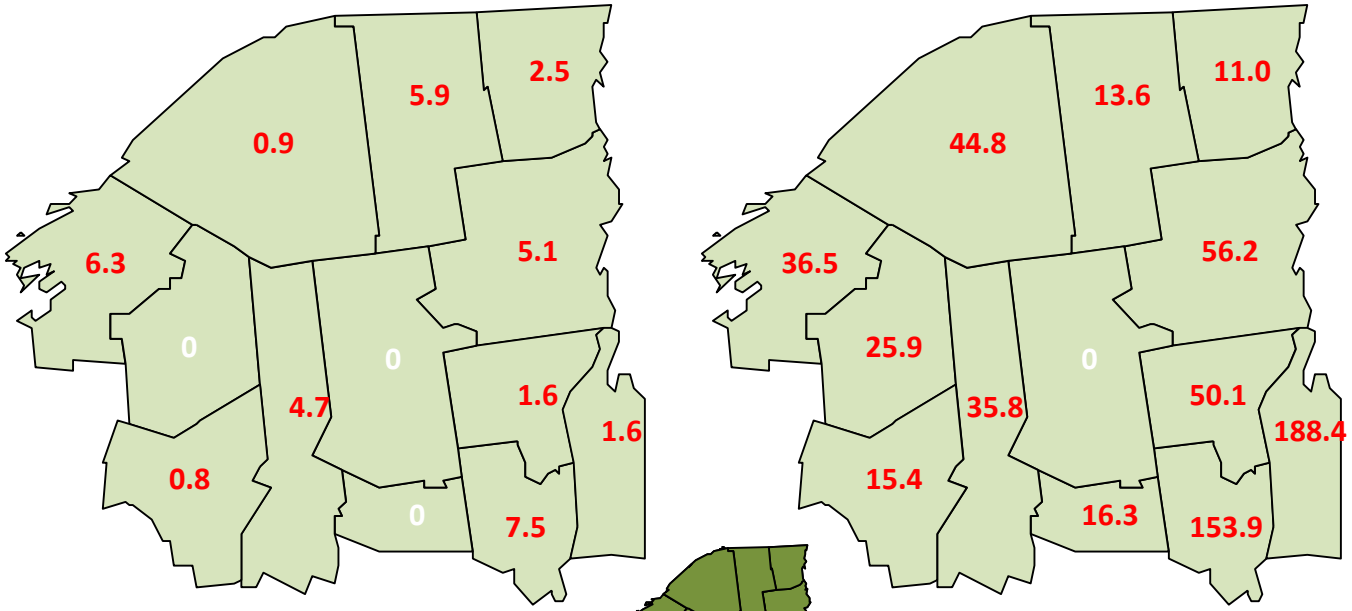
Lyme disease in New York State 1986 – 2005 by zip code

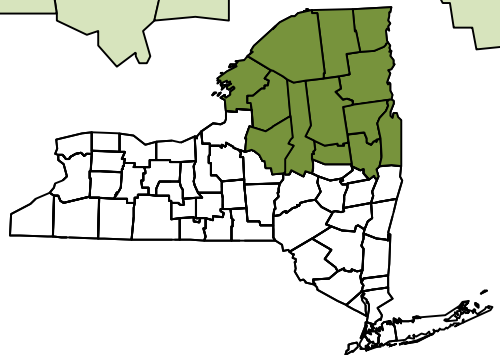
Incidence per 100,000 population

0 50 100 500 1000+



Incidence of Lyme disease per 100,000 population in Adirondack counties, 2002 versus 2012.





2002

37 ADK cases
5,476 statewide

2012

698 ADK cases
5,344 statewide

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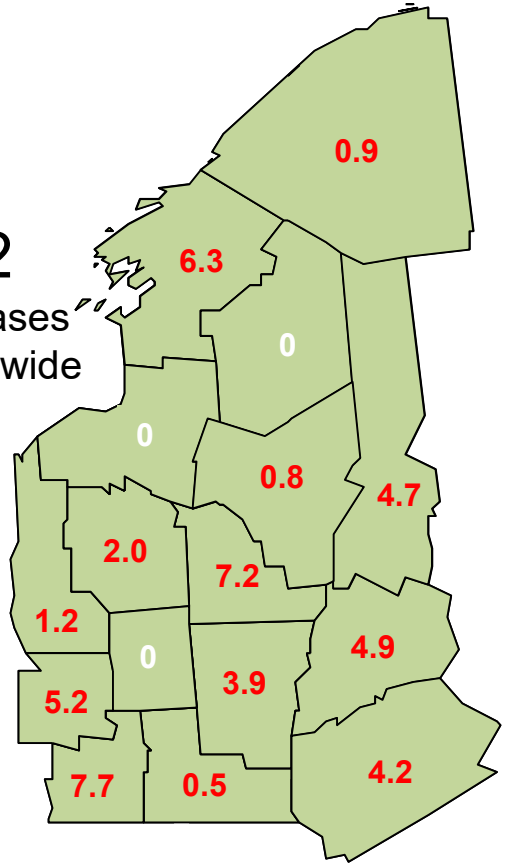
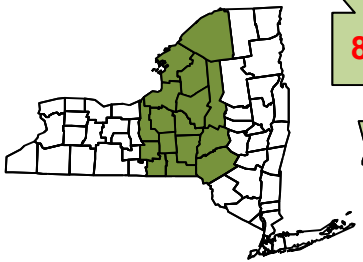
Incidence of Lyme disease per 100,000 population in Central New York counties, 2002 versus 2012

2002

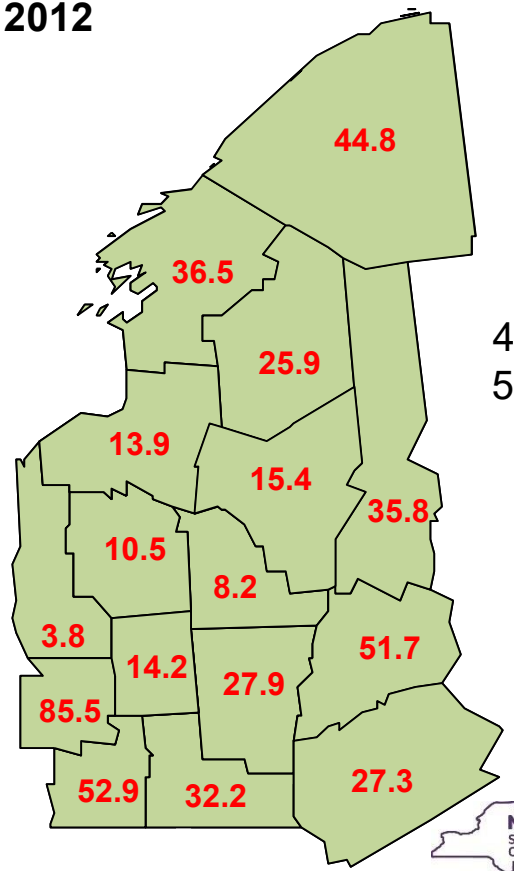
42 CNY cases
5,476 statewide





2012

462 CNY cases
5,344 statewide



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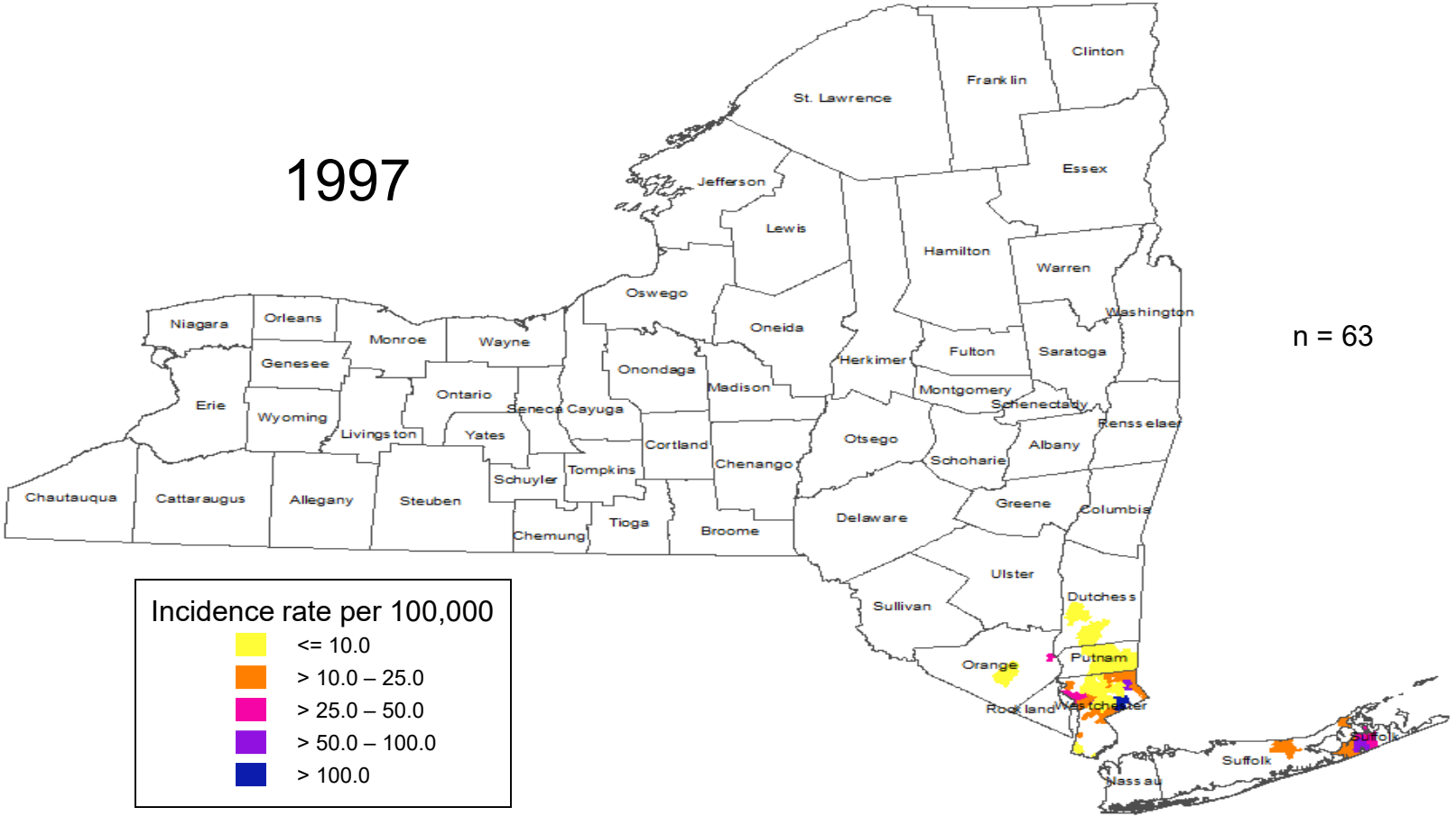
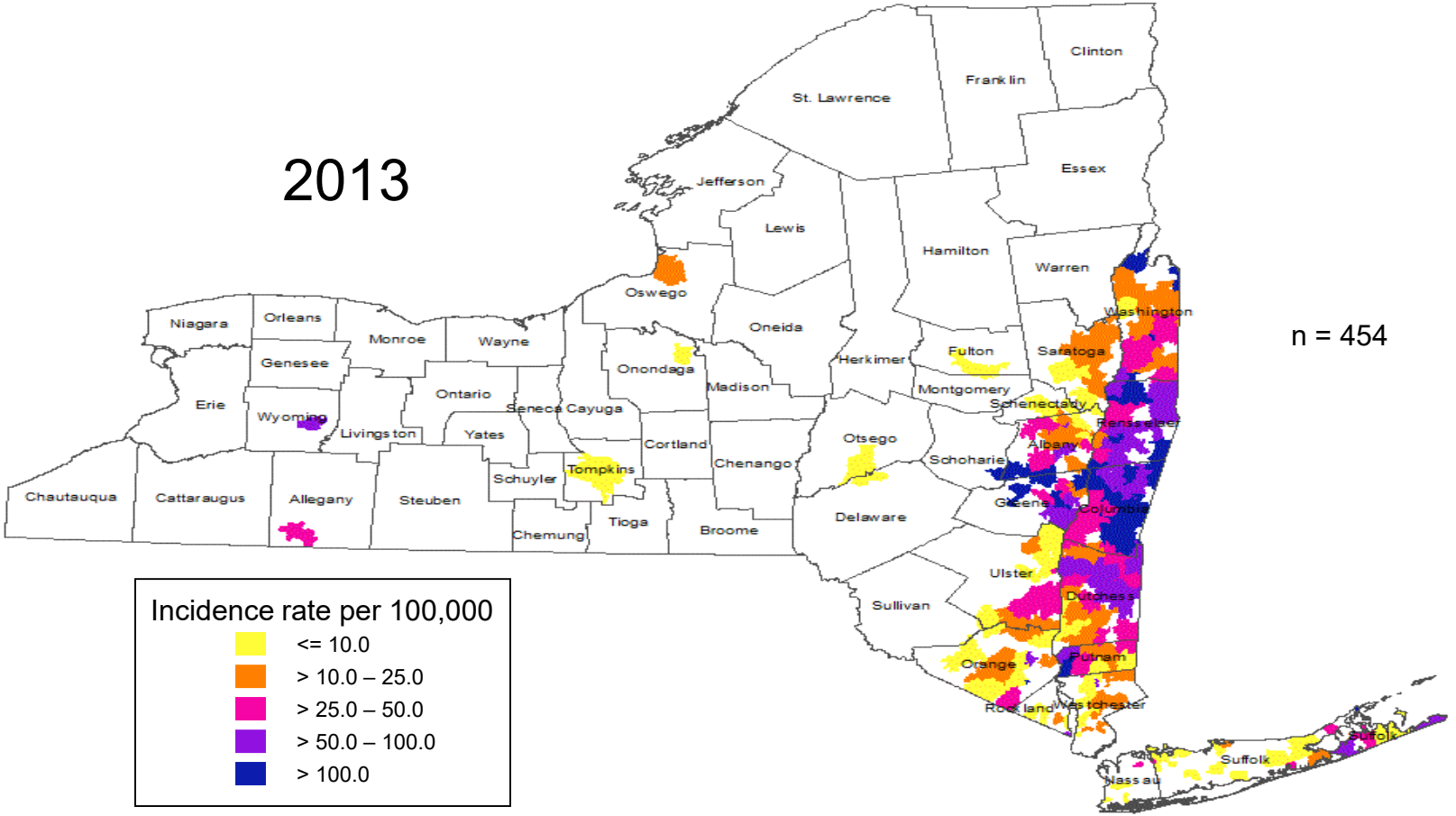
Anaplasmosis incidence rate per 100,000 population in New York State* by ZIP code



* exclusive of New York City

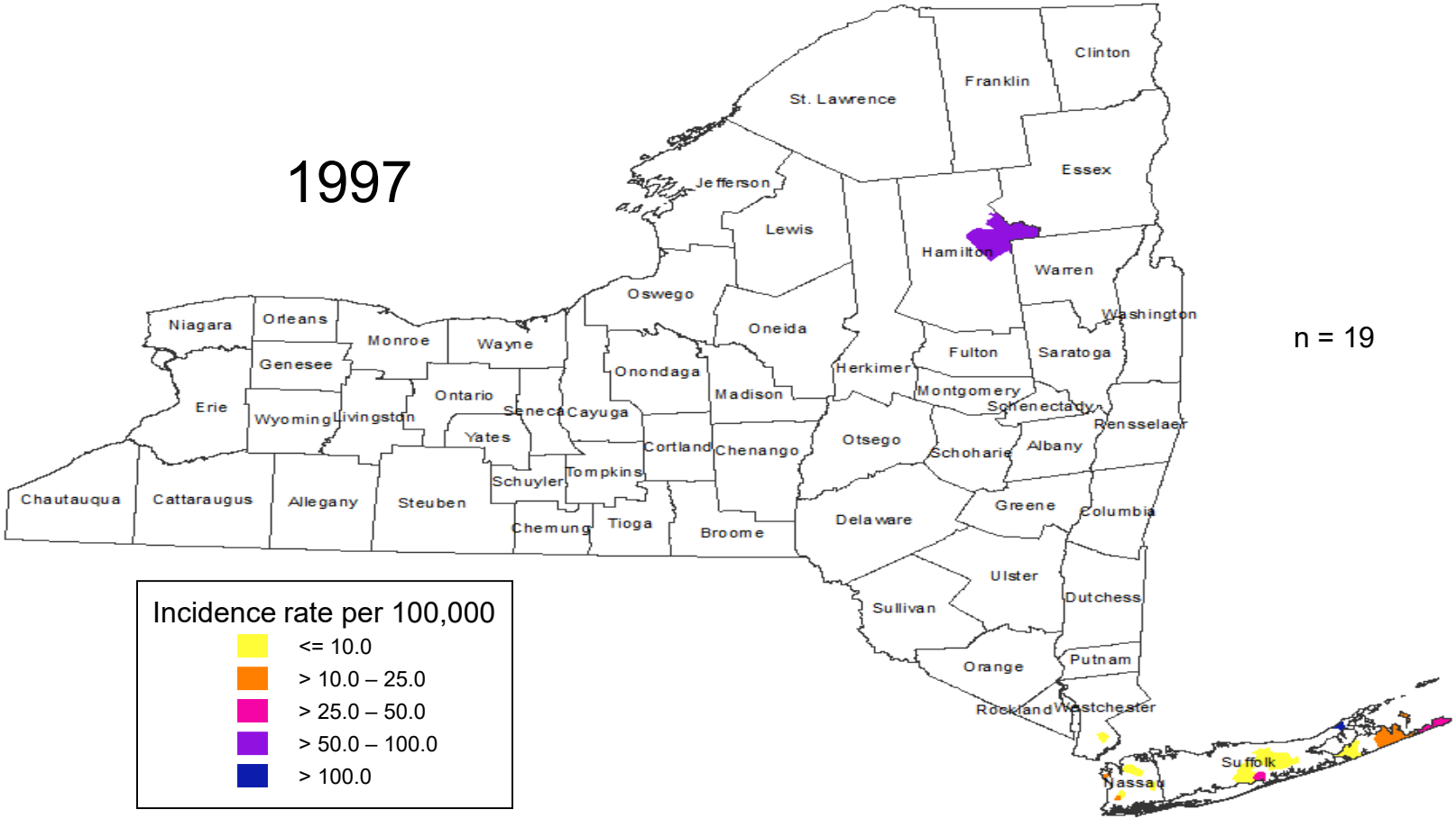
Anaplasmosis incidence rate per 100,000 population in New York State* by ZIP code



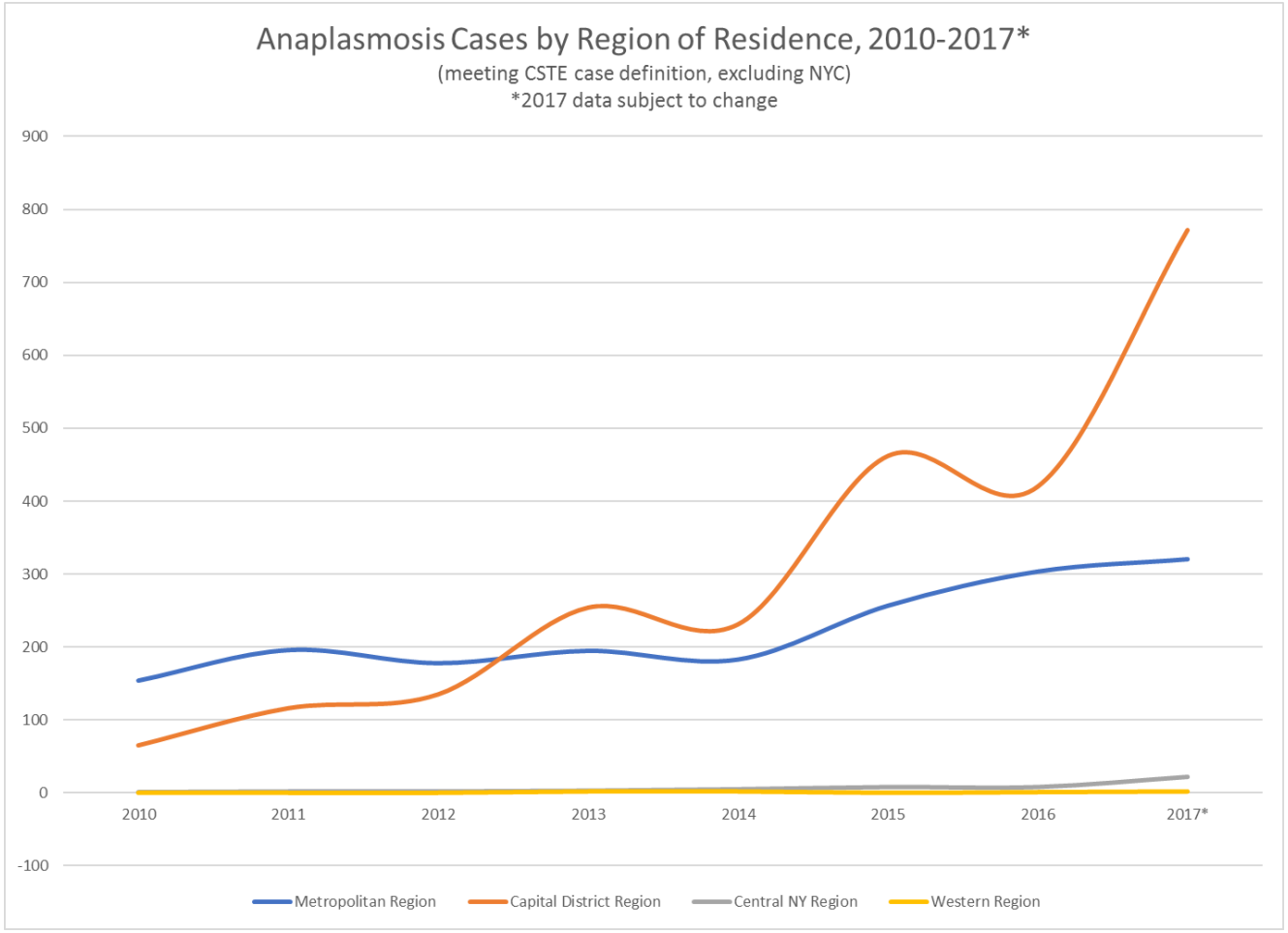
n = 454

* exclusive of New York City

Babesiosis incidence rate per 100,000 population in New York State* by ZIP code

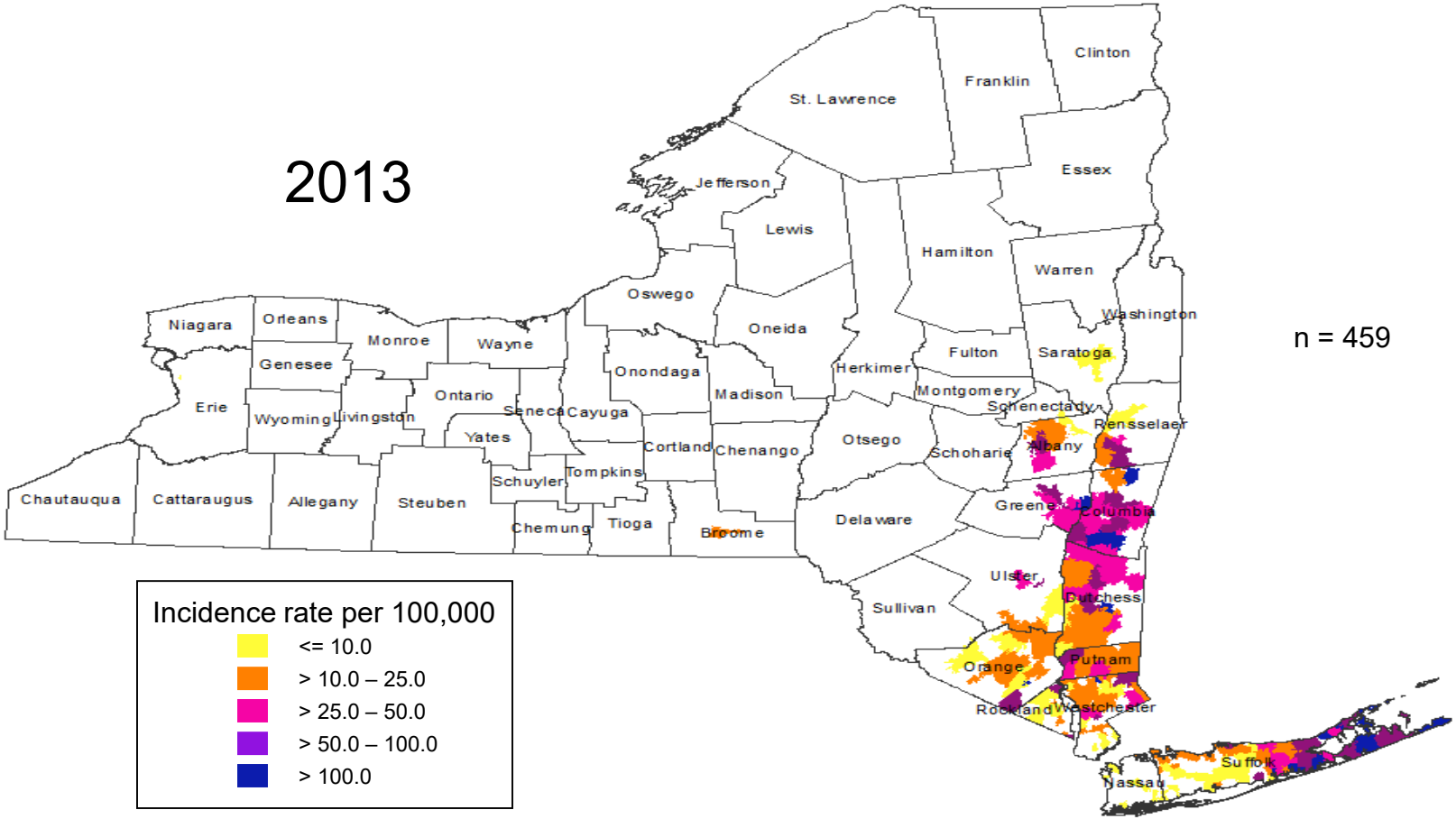


* exclusive of New York City



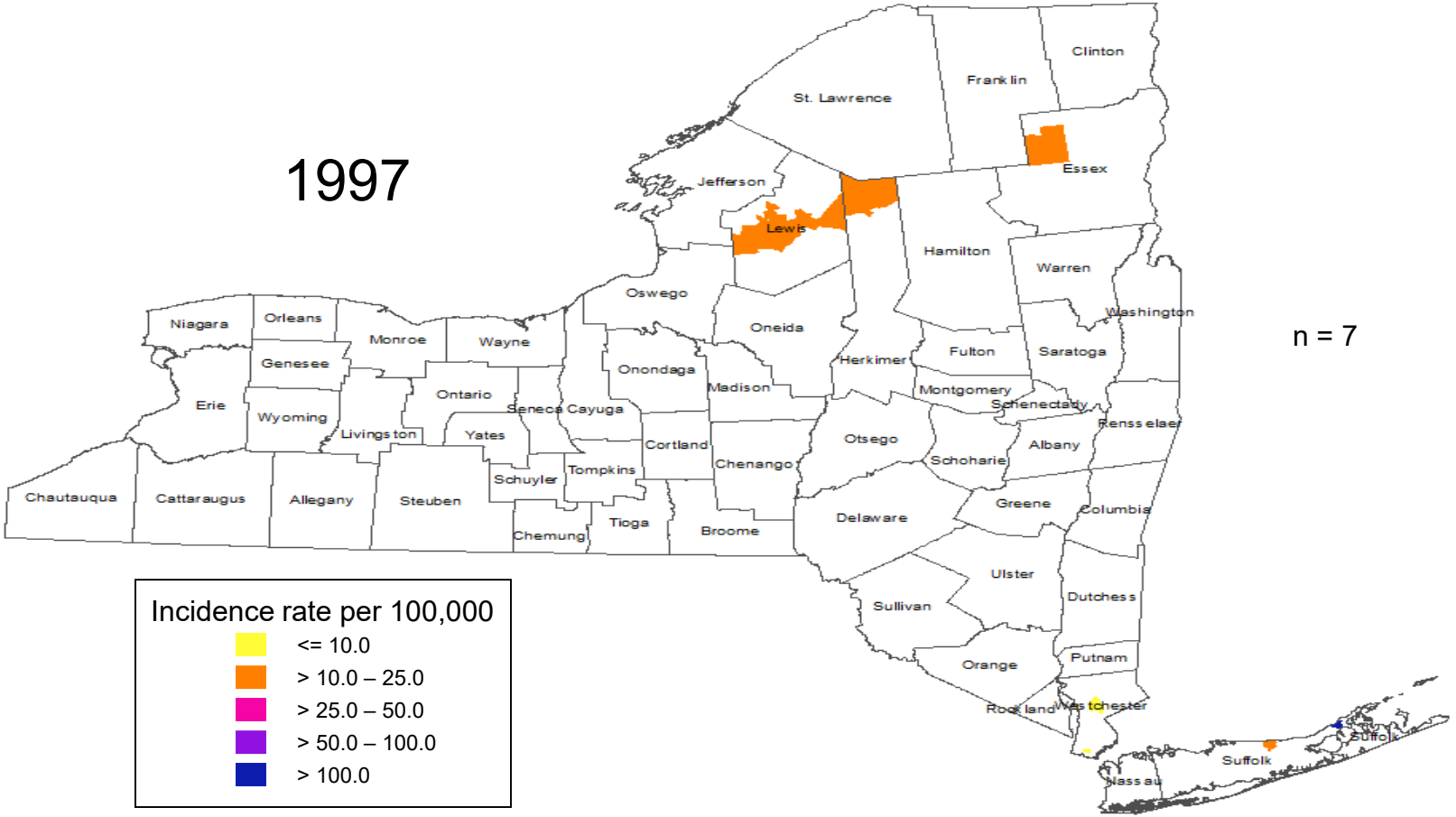
NEW YORK STATE OF OPPORTUNITY. Department of Health

Babesiosis incidence rate per 100,000 population in New York State* by ZIP code



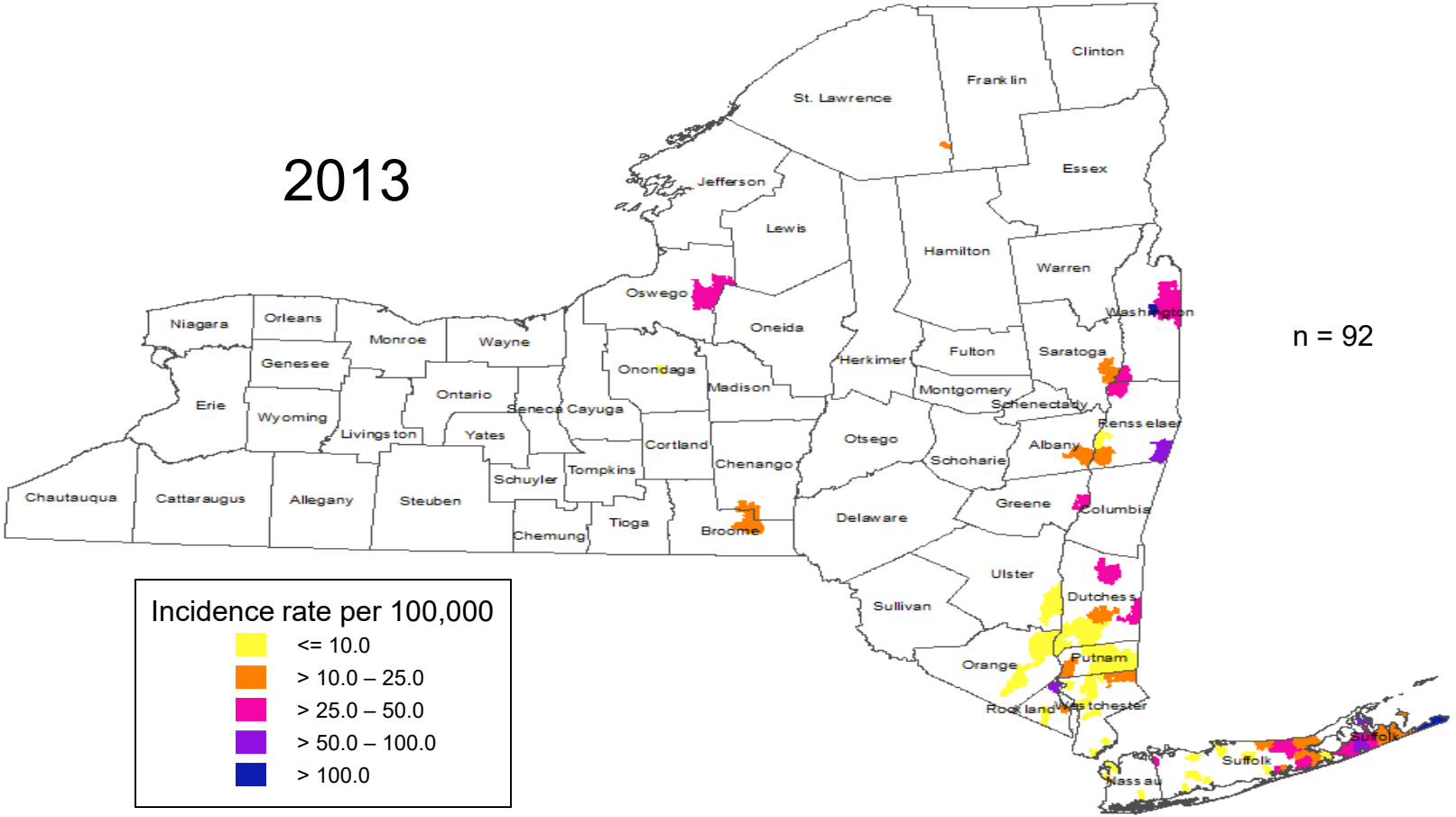
* exclusive of New York City

Ehrlichiosis incidence rate per 100,000 population in New York State* by ZIP code



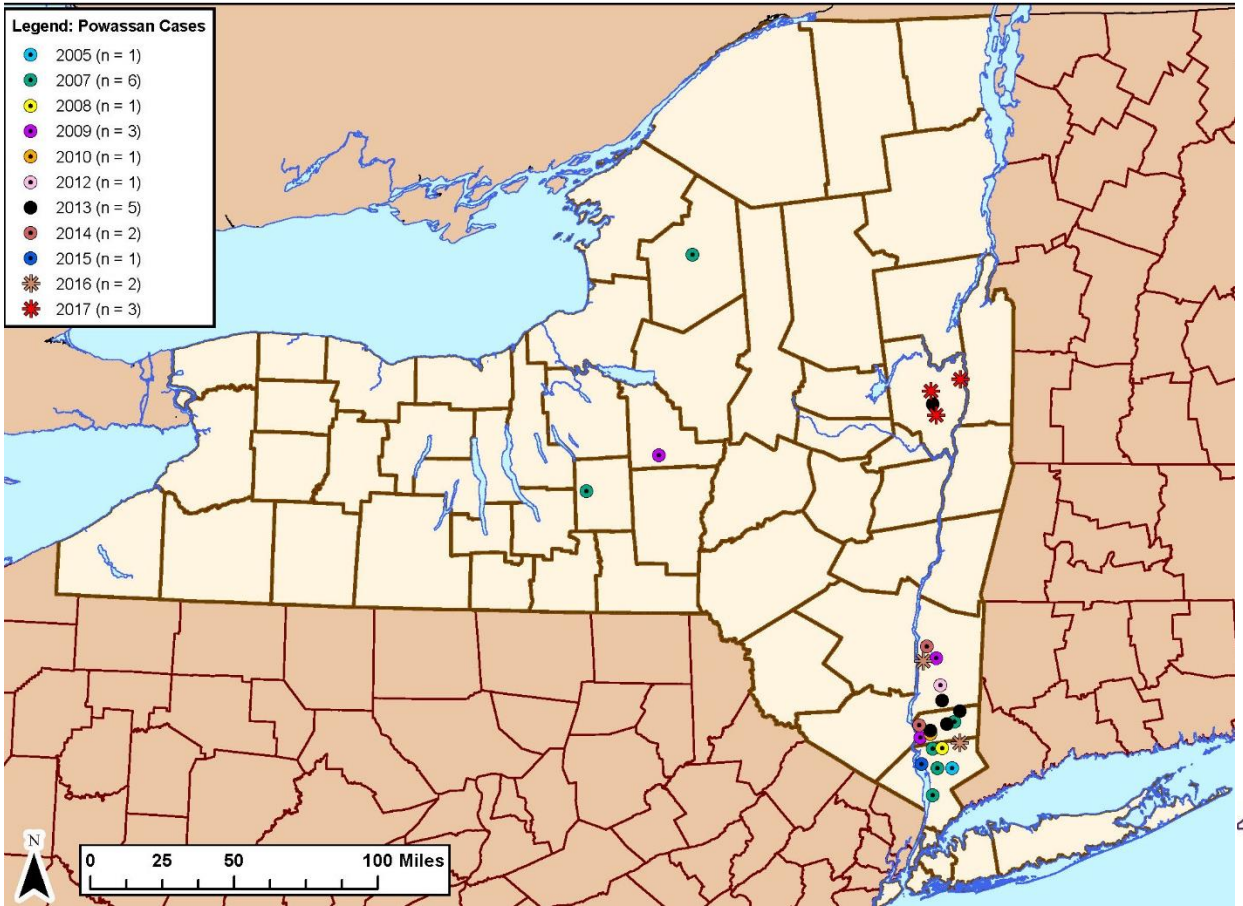
* exclusive of New York City

Ehrlichiosis incidence rate per 100,000 population in New York State* by ZIP code



* exclusive of New York City

Powassan Cases 2005 - 2017



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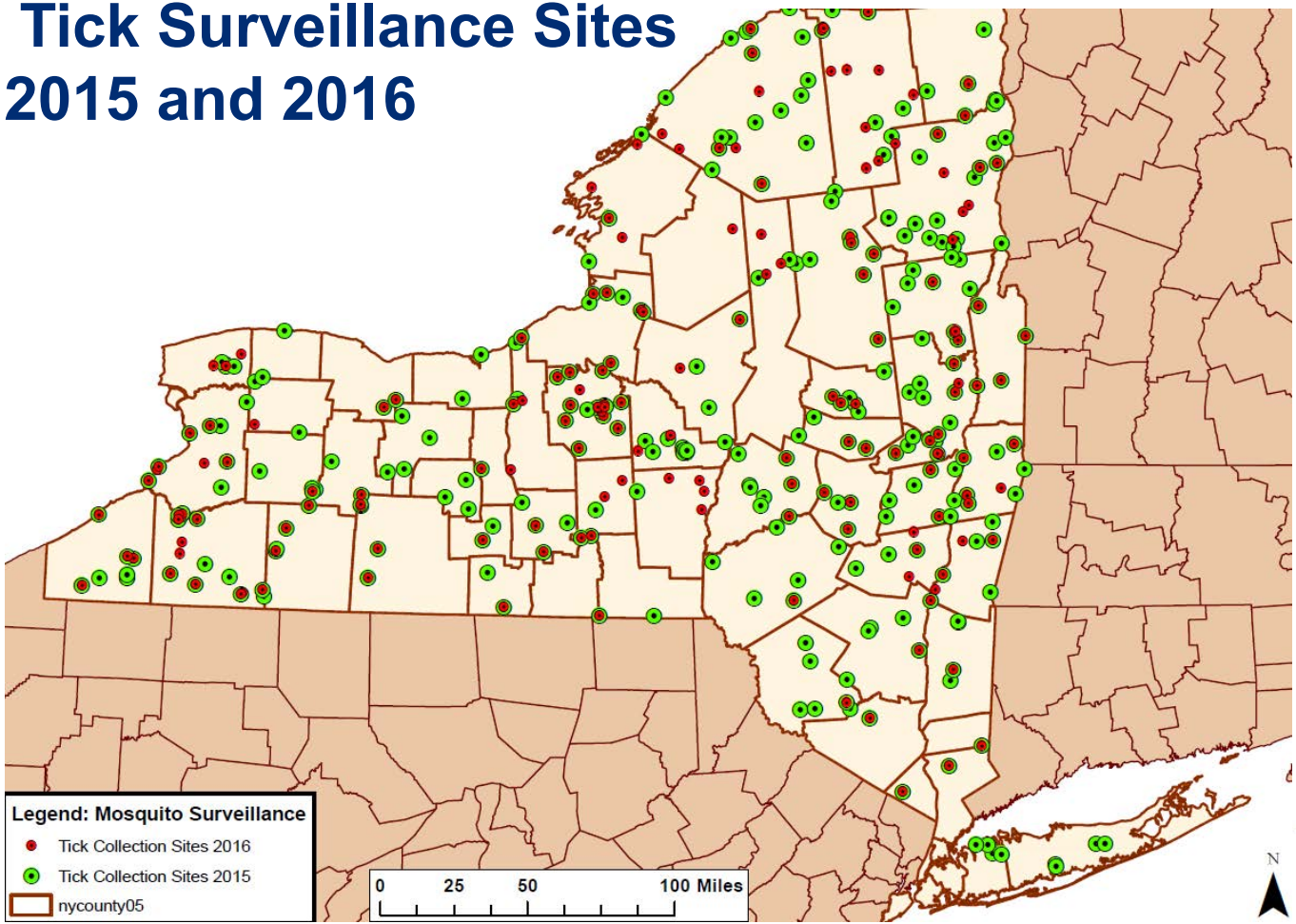
NYSDOH Tick Surveillance Sites 2015 and 2016



Sanitary Code:

NEW YORK STATE DEPARTMENT OF HEALTH

Communicable Disease Reporting Requirements

Reporting of suspected or confirmed communicable diseases is mandated under the New York State Sanitary Code (10NYCRR 2.10,2.14). The primary responsibility for reporting rests with the physician; moreover, laboratories (PHL 2102), school nurses (10NYCRR 2.12), day care center directors, nursing homes/hospitals (10NYCRR 405.3d) and state institutions (10NYCRR 2.10a) or other locations providing health services (10NYCRR 2.12) are also required to report the diseases listed below.

- Anaplasmosis
- Amebiasis
- C Animal bites for which rabies prophylaxis is given[1]
- C Anthrax[2]
- C Arboviral infection[3]
- Babesiosis
- C Botulism[2]
- C Brucellosis[2]
- Campylobacteriosis
- Chancroid
- Chlamydia trachomatis infection
- C Cholera
- Cryptosporidiosis
- Cyclosporiasis
- C Diphtheria
- E.coli O157:H7 infection[4]
- Ehrlichiosis
- C Encephalitis
- C Foodborne Illness
- Giardiasis
- C Glanders[2]
- Gonococcal infection
- Haemophilus influenzae[5] (invasive disease)
- C Hantavirus disease
- Hemolytic uremic syndrome
- Hepatitis A
- C Hepatitis A in a food handler
- Hepatitis B (specify acute or chronic)
- Hepatitis C (specify acute or chronic)
- Pregnant hepatitis B carrier
- Herpes infection, infants aged 60 days or younger
- Hospital associated infections (as defined in section 2.2 10NYCRR)
- Influenza, laboratory-confirmed
- Legionellosis
- Listeriosis
- Lyme disease
- Lymphogranuloma venereum
- Malaria
- C Measles
- C Melioidosis[2]
- Meningitis
  - Aseptic or viral
  - C Haemophilus
  - C Meningococcal
  - Other (specify type)
- C Meningococcemia
- C Monkeypox
- Mumps
- Pertussis
- C Plague[2]
- C Poliomyelitis
- Psittacosis
- C Q Fever[2]
- C Rabies[1]
- Rocky Mountain spotted fever
- C Rubella (including congenital rubella syndrome)
- Salmonellosis
- C Severe Acute Respiratory Syndrome (SARS)
- Shigatoxin-producing E.coli[4] (STEC)
- Shigellosis[4]
- C Smallpox[2]
- Staphylococcus aureus[6] (due to strains showing reduced susceptibility or resistance to vancomycin)
- C Staphylococcal enterotoxin B poisoning[2]
- Streptococcal infection (invasive disease)[5]
  - Group A beta-hemolytic strep
  - Group B strep
  - Streptococcus pneumoniae
- C Syphilis, specify stage[7]
- Tetanus
- Toxic shock syndrome
- Transmissable spongiform encephalopathies[8] (TSE)
- Trichinosis
- C Tuberculosis current disease (specify site)
- C Tularemia[2]
- C Typhoid
- C Vaccinia disease[9]
- Vibriosis[6]
- C Viral hemorrhagic fever[2]
- Yersiniosis

1. Local health department must be notified prior to initiating rabies prophylaxis.
2. Diseases that are possible indicators of bioterrorism.
3. Including, but not limited to, infections caused by eastern equine encephalitis virus, western equine encephalitis virus, West Nile virus, St. Louis encephalitis virus, La Crosse virus, Powassan virus, Jamestown Canyon virus, dengue and yellow fever.
4. Positive shigatoxin test results should be reported as presumptive evidence of disease.
5. Only report cases with positive cultures from blood, CSF, joint, peritoneal or pleural fluid. Do not report cases with positive cultures from skin, saliva, sputum or throat.
6. Proposed addition to list.
7. Any non-treponemal test ≥ 1:16 or any positive prenatal or delivery test regardless of titer or any primary or secondary stage disease, should be reported by phone; all others may be reported by mail.
8. Including Creutzfeldt-Jakob disease. Cases should be reported directly to the New York State Department of Health Alzheimer's Disease and Other Dementias Registry at (518) 473-7817 upon suspicion of disease. In NYC, cases should also be reported to the NYCDOHMH.
9. Persons with vaccinia infection due to contact transmission and persons with the following complications from vaccination; eczema vaccinatum, erythema multiforme major or Stevens-Johnson syndrome, fetal vaccinia, generalized vaccinia, inadvertent inoculation, ocular vaccinia, post-vaccinial encephalitis or encephalomyelitis, progressive vaccinia, pyogenic infection of the infection site, and any other serious adverse events.

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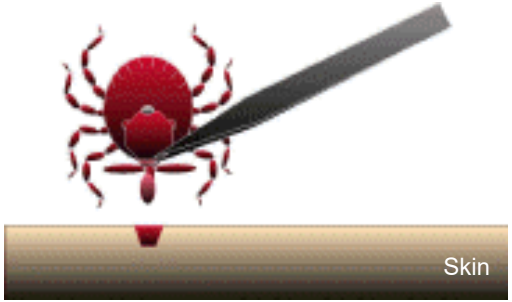
Personal protection:

Correct Tick Removal Technique:

Grasp tick with tweezers, as close to the skin as possible (i.e. by the mouthparts or “head” of the tick)

Pull slowly, with a constant motion away from the skin (perpendicular to skin surface)



Do not use petroleum jelly, gasoline, lit match or cigarette, nail polish or any other method.

You may be increasing your risk of acquiring a tick-borne disease!

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Personal protection for patients:

- Avoid wooded and brushy areas with high grass and leaf litter
- Walk in the center of trails
- Consider the use of repellents, following label instructions
  - DEET, Picaridin, IR3535 on skin
  - Use amount appropriate for time outdoors—more is not always better!
  - Permethrin on clothes
- Tick checks
- Bath or shower ASAP
- Clothes in hot dryer for 10 minutes

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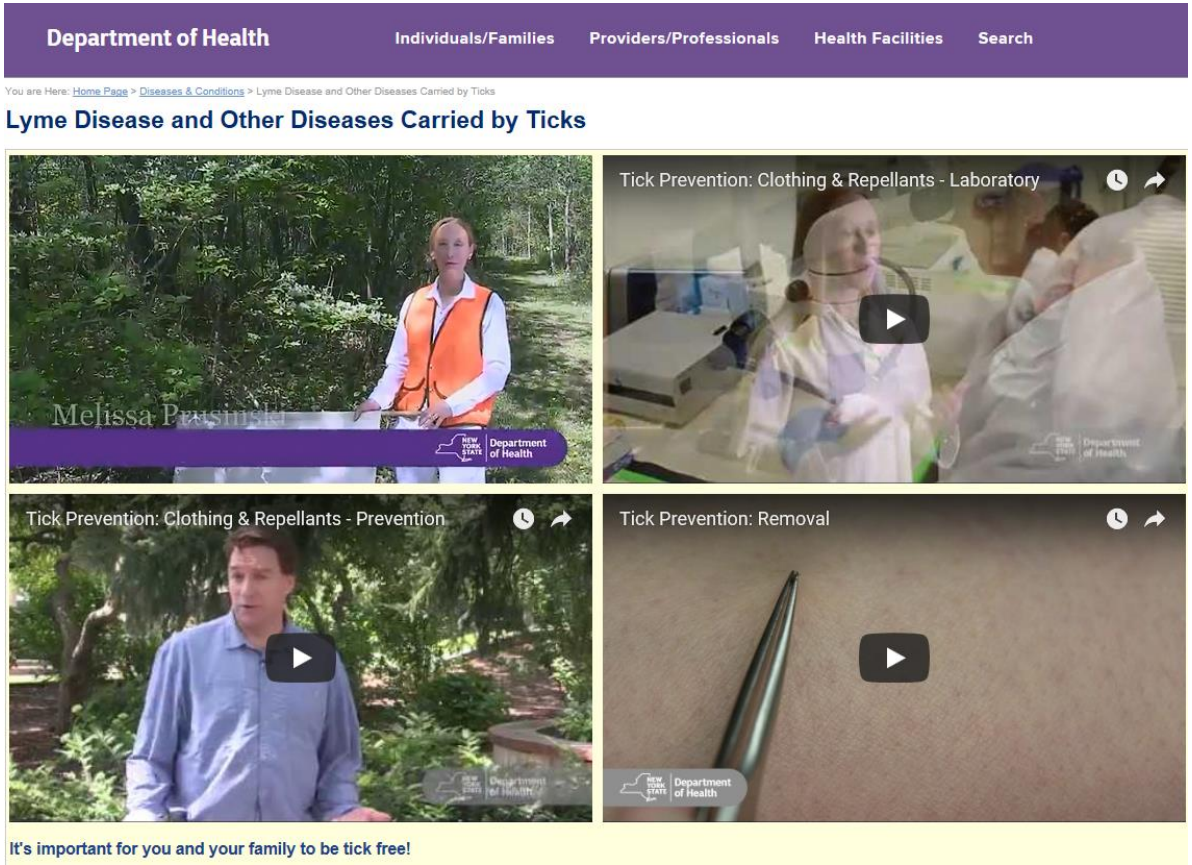
Resources

http://www.health.ny.gov/diseases/communicable/lyme/



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Landscape management:

Before

After

Stafford, K.C. 1995-1998 unpublished data
Schulze at al. 1995. J. Med Entomol. 32:730-733

Landscape management:

Before

After

* CT Agricultural Experimental Field Station

For More Information

P. Bryon Backenson

Bureau of Communicable Disease Control

New York State Department of Health

518-473-4439

bryon.backenson@health.ny.gov

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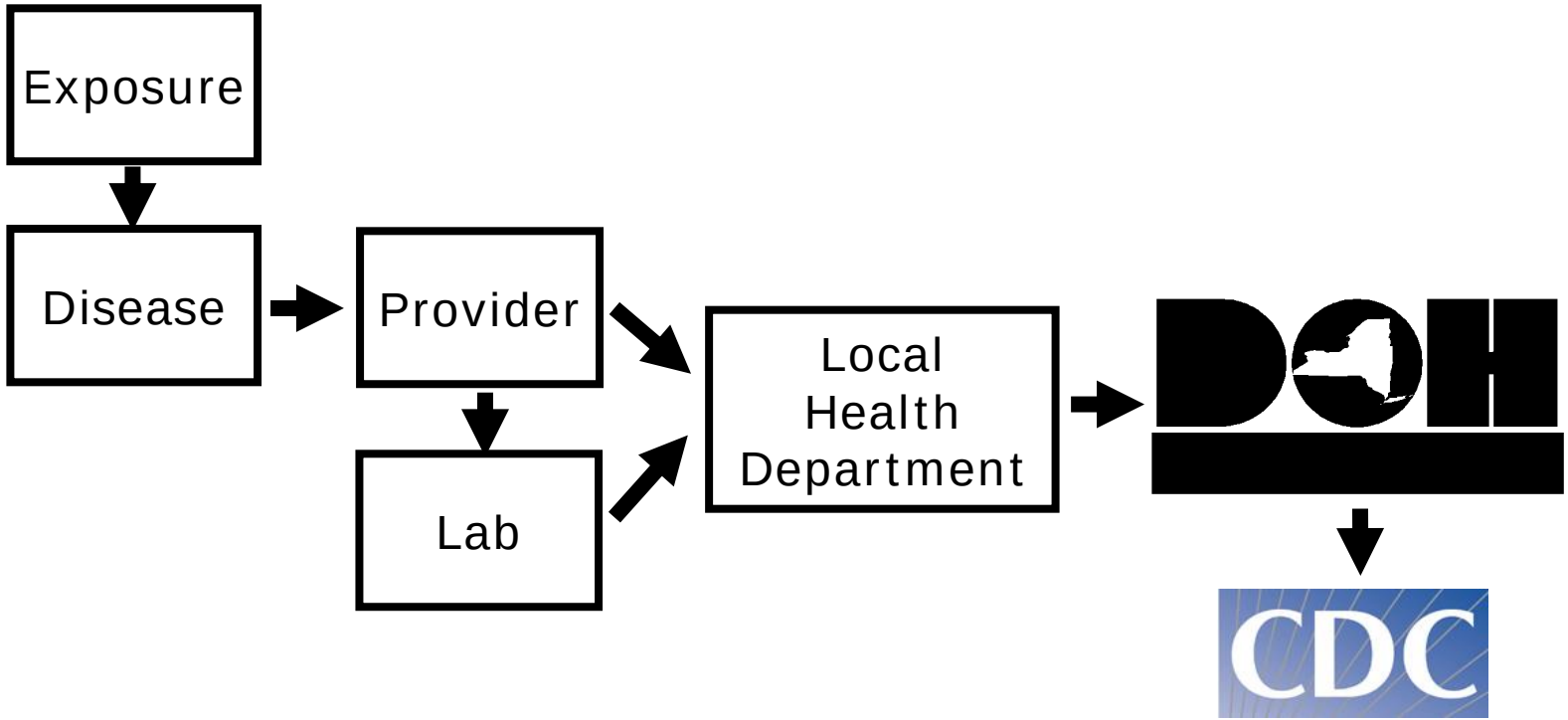
Reporting & Surveillance Process



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Lyme Disease Surveillance Case Definition

Suspected

A case of EM where there is no known exposure (as defined above) and no laboratory evidence of infection (as defined above), **OR**

A case with evidence of infection but no clinical information available (e.g., a laboratory report).

Probable

Any other case of physician-diagnosed Lyme disease that has laboratory evidence of infection (as defined above).

Confirmed

A case of EM with exposure in a high incidence state (as defined above), **OR**

A case of EM with laboratory evidence of infection and a known exposure in a low incidence state, **OR**

Any case with at least one late manifestation that has laboratory evidence of infection.

State DOH reviews ("investigates") positive laboratory reports and doctor reports of Lyme disease, and classifies them into criteria above.

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