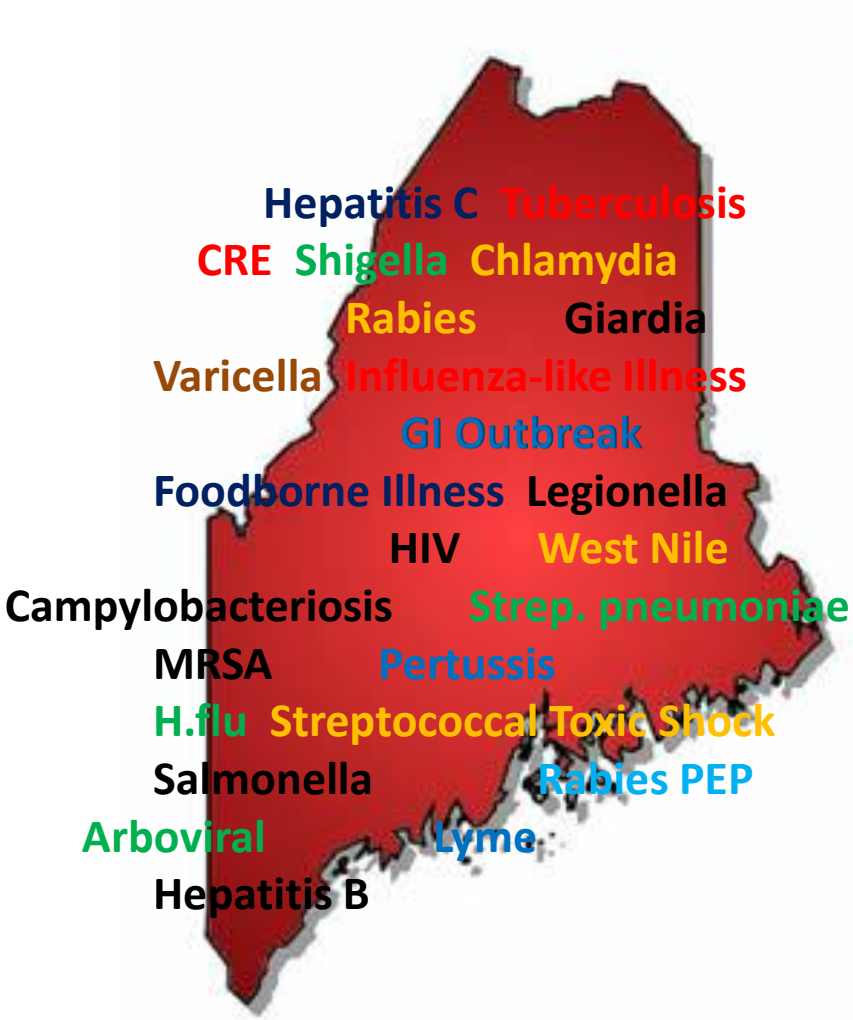
Reportable Infectious Diseases in Maine



2015 Summary

Maine Center for Disease Control and Prevention
An Office of the Department of Health and Human Services
Paul R. LePage, Governor
Mary C. Mayhew, Commissioner

Reportable Infectious Diseases in Maine

2015 Summary

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Division of Infectious Disease Staff

Maine Center for Disease Control and Prevention (Maine CDC) annually publishes a report on infectious diseases in Maine. This report is prepared by the Division of Disease Control and is intended to provide an overview of notifiable infectious diseases of public health importance in Maine.

We could not produce this report without the continued support of our healthcare and public health partners throughout the state. We greatly appreciate all of the laboratories, healthcare providers, childcare centers, school nurses, veterinarians, and others who provide disease surveillance information. Considerable time is spent assisting Maine CDC with infectious disease investigations and disease control measures that affect Maine residents. Public health partners' active and critical role in the infectious disease surveillance cycle informs statewide policies and programs that protect our residents from infectious diseases through health promotion, disease prevention, early detection, containment, and treatment.

We appreciate and encourage your vigilance in the effort to protect the people of Maine through timely, complete, and accurate notifiable infectious disease reporting. It is through these collaborative efforts that we are able to respond to emerging infectious disease threats and prevent outbreaks.

We hope you find this report useful as we all work to protect and promote the health of Maine's residents. As always, we welcome your feedback on how we can provide more useful disease information to you, our partners.

For more information on what, when, and how to report infectious diseases please see *Appendix J (Notifiable Conditions List)* of this report, visit our website at www.mainepublichealth.gov, or call 1-800-821-5821.

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2015 Infectious Disease Surveillance Highlights

- Maine updated its Notifiable Diseases and Conditions list in September 2015:
  - Staphlococcus Enterotoxin B, Group B streptococcus, Toxoplasmosis, Venezualan Equine Encephalitis, and Yersiniosis were removed from the list.
  - Carbapenem-resistant enterobacteraciae (CRE), cyclosporiasis, and influenza-associated hospitalizations were added to the list. Several tickborne and mosquito-borne illnesses are now explicitly listed instead of being included in a broader category (Anaplasmosis, California serogroup viruses, Chikungunya, Eastern Equine Encephalitis, Powassan, St. Louis Encephalitis, West Nile virus, and Western Equine Encephalitis).
- Maine CDC followed up on 8,363 infectious disease reports. Of these:
  - 2,831 disease reports were investigated by Maine CDC staff.
    - 2,099 met a probable or confirmed case definition.
  - 328 potential outbreaks were investigated by Maine CDC staff.
    - 255 were classified as outbreaks.
  - 5,534 disease reports were handled without a full investigation by staff, either through passive surveillance or laboratory reports.
    - 3,593 met a probable or confirmed case definition.
    - Diseases that are handled without a full investigation include Group B Strep, hepatitis C, latent TB, Lyme disease, MRSA, and varicella.
- Maine CDC Infectious Disease Epidemiology Program responded to more than 3,100 consults during 2015.
  - The top five topics for consults were: rabies, tuberculosis, pertussis, influenza, and Lyme disease.
- Maine experienced a moderate influenza season. Weekly reports with detailed information are available at www.maineflu.gov.
- Ebola was downgraded from an epidemic. Preparedness and monitoring efforts continue based on lessons learned.
  - Maine completed monitoring of 13 travelers returning from an Ebola affected area for a total of 19 monitoring periods.
- The first fatality from Eastern Equine Encephalitis (EEE) occurred in a Maine resident in the fall of 2015.
- Maine had cases of all three endemic arboviral conditions (Eastern Equine Encephalitis, Powassan, and West Nile virus) in the same year for the first time ever.
- Maine saw dramatic increases in Gonorrhea and Syphilis cases in 2015.
- Tickborne diseases remained steady or decreased slightly except for babesiosis which increased.
- Maine had the lowest number of rabid animals reported in the last decade (28 cases).
- Maine saw an increase in invasive Haemophilus influenzae cases, but found no link connecting any cases.
- Infectious disease epidemiology staff participated in two training exercises: one on avian influenza and one on a zoonotic disease outbreak involving the One Health approach.
- Maine had 28 hospitals participating in syndromic surveillance, 21 sending HL7 messages.

The History of Public Health Surveillance

The responsibility of government to control and prevent disease dates back hundreds of years. Government responsibility was exercised during the epidemics of plague, syphilis, and smallpox in the Middle Ages to identify possible sources of disease, isolate infectious cases, and quarantine their contacts to prevent further spread of infection. Illness was monitored, regulations were enacted to prevent pollution of streets and public water supplies, and instructions issued for appropriate methods of burial and food handling.

Infectious disease surveillance in the United States began soon after the colonies were established. In 1741, Rhode Island passed legislation requiring tavern keepers to report contagious disease among their patrons. Two years later, Rhode Island enacted legislation requiring the reporting of smallpox, yellow fever, and cholera. National disease surveillance began in 1850, when mortality statistics were first published by the federal government based on the decennial census. The legal requirement to collect national morbidity data in the United States was initiated in 1878 when Congress authorized the US Public Health Service to collect reports of the occurrence of diseases that require quarantine including cholera, plague, smallpox, and yellow fever.

In 1885, the Maine State Board of Health was created and consisted of six members appointed by the Governor. Disease reporting for a select few diseases was conducted by the Maine Board of Health. In 1917, the Board was replaced by the Maine Department of Health.

Overview of Public Health Surveillance

Seventy-eight infectious diseases are reportable in Maine with 66 considered nationally notifiable. The list of reportable infectious diseases in Maine changes periodically. The last update was in September 2015. Diseases may be added to the list as new pathogens emerge or when a previously recognized pathogen becomes more important. Some diseases may be removed from the list as their incidence or importance declines. While modern advances in sanitation, personal hygiene, and immunizations provide greater control and prevention of some diseases, other infectious diseases continue to thrive and still other yet-to-be-identified infectious disease entities are constantly emerging. Vaccine preventable diseases are re-emerging in some parts of the world due to decreasing vaccine coverage among children.

The Maine Department of Health and Human Services (DHHS) Center for Disease Control and Prevention (Maine CDC) works with healthcare providers and laboratorians to gather infectious disease information, analyze it, and provide reports in a timely manner. Surveillance data assist in identifying events that require immediate public health action, such as disease outbreaks and emerging diseases; identifying populations at higher risk of infection; monitoring trends in the burden of disease; guiding the planning, implementation, and evaluation of disease prevention and treatment programs; and informing public policy.

Disease Reporting in Maine

Healthcare providers, medical laboratories, healthcare facilities, administrators, health officers, and veterinarians are required to report notifiable diseases to Maine CDC (Appendix J). Diseases that require specific and immediate public health response or are possible indicators of bioterrorism are to be reported immediately by telephone. The remainder of notifiable conditions are to be reported within 24 or 48 hours of recognition or strong suspicion of disease.

Disease reports may be made by electronic laboratory report (ELR), telephone or fax to the Maine CDC 24 hours a day, 7 days a week. The reporting numbers are toll free: telephone 1-800-821-5821 and fax 1-800-293-7534. An epidemiologist is on call 24 hours a day, 7 days a week to respond to infectious disease emergencies. Disease reports may also be mailed to the Division of Infectious Disease, 286

Water Street, 6th Floor, 11 State House Station, Augusta, Maine 04333-0011. Non-confidential reports or non-urgent requests for consultation can be sent by email to disease.reporting@maine.gov.

Infectious disease conditions reportable in Maine, the Rules for the Control of Notifiable Conditions and current information regarding infectious disease incidence in Maine are available on the Maine CDC website (http://www.maine.gov/dhhs/mecdc/infectious-disease/epi/disease-reporting/index.shtml).

Maine's Health and Environmental Testing Laboratory (HETL) tests for most reportable conditions. Certain organisms are required to be sent to HETL for confirmatory testing and the rules for isolate submission can be found on the notifiable conditions list. Information on the testing performed at HETL is available at www.mainepublichealth.gov/lab.

Purpose of Report

The Reportable Infectious Diseases in Maine 2015 Summary provides descriptive epidemiology of reportable infectious diseases in Maine and serves as a document of public health surveillance data. The report allows public health officials to comprehend the burden of reportable infectious diseases in Maine.

Methods

The data in this report are based on case definitions developed by the Council of State and Territorial Epidemiologists (CSTE) and adopted by federal CDC and Maine CDC. Case definitions may change from year to year. The case definitions used to classify 2015 data are available at http://wwwn.cdc.gov/nndss/case-definitions.html. Cases meeting the confirmed or probable case definitions are presented in the annual report.

Tables in the introduction section include all confirmed and probable cases from the Notifiable Diseases and Conditions List. Rates are calculated by dividing the number of cases by the appropriate population from the yearly U.S. Census estimates and multiplying by 100,000. Charts and graphs may not include the total number of cases due to missing information on patient characteristics, such as county of residence, symptom onset date, age, and gender.

Over time, additional information may necessitate review and updates of historical data. The most current published report will have the updated historical counts and trends for all diseases.

More detailed information about each disease condition, including educational materials for healthcare providers and the general public, is available at www.maine.gov/idepi.

Counts of Selected* Reportable Diseases by Year, Maine, 2006 – 2015**

Condition	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Anaplasma phagocytophilum	10	9	17	15	17	26	52	94	191	186
Babesiosis	9	11	11	3	5	9	10	36	42	55
Brucellosis	0	0	0	0	2	0	0	0	0	0
Campylobacteriosis	137	149	151	172	148	195	189	229	225	221
Carbapenem-resistant Enterobacteriaceae (CRE)***	NR	NR	NR	NR	NR	NR	NR	NR	NR	12
Chikungunya Virus	NA	NA	NA	NA	NA	0	0	1	6	2
Chlamydia	2305	2543	2597	2443	2588	3101	3413	3440	3491	3851
Creutzfeldt-Jakob Disease (CJD)	0	0	0	1	0	0	0	1	1	1
Cryptosporidiosis	52	56	46	67	93	51	58	35	51	34
Cyclosporiasis	0	0	0	0	1	0	0	0	7	1
Dengue	7	1	2	3	6	0	0	1	1	5
Eastern Equine Encephalitis	0	0	0	0	0	0	0	0	1	1
Ehrlichia chaffeensis	4	3	1	1	4	1	3	3	8	5
Giardiasis	192	197	188	223	223	171	169	218	154	116
Gonorrhea	135	118	96	143	163	273	456	246	236	422
Group A Streptococcus, invasive	19	28	28	21	47	43	37	37	53	56
Group B Streptococcus, invasive****	18	1	7	19	51	78	92	96	109	79
Haemophilus influenzae, invasive	21	13	21	21	13	26	23	25	21	39
Hantavirus infection, non-Hantavirus pulmonary syndromes	0	0	0	0	0	1	0	0	0	0
Hemolytic uremic syndrome	6	1	1	2	1	2	2	2	1	7
Hepatitis A, acute	8	5	18	1	7	6	9	10	8	8
Hepatitis B, acute	26	19	15	15	13	8	9	11	12	9
Hepatitis B, chronic	NA	139	142	125	102	105	105	107	108	107
Hepatitis C, acute	2	1	3	2	2	12	13	9	31	30
Hepatitis C, chronic	NA	NA	NA	NA	1142	1184	1204	1260	1424	1488
Hepatitis D, acute	0	0	0	0	1	1	0	0	0	0
Hepatitis E, acute	0	1	0	0	0	1	0	0	0	0
HIV Infection	57	52	46	51	56	54	48	39	59	48
Legionellosis	11	9	11	10	12	18	18	23	19	16
Listeriosis	6	5	5	4	1	4	5	4	8	7
Lyme disease	338	530	909	976	752	1012	1113	1384	1409	1203
Malaria	4	8	1	2	6	6	5	10	7	7
Meningococcal disease	9	8	6	4	5	5	3	4	2	4
Mumps	0	24	5	6	2	2	0	1	0	0
Novel Influenza A virus Infections	0	0	0	2219	17	3	0	0	0	0
Pertussis	174	83	49	80	53	205	737	332	557	281
Powassan Encephalitis	0	0	0	0	0	0	0	1	0	1

Condition	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Q fever	4	7	0	0	0	2	0	0	0	0
Rabies PEP	NR	NR	NR	59	77	145	190	128	107	112
Rabies, animal	127	86	70	63	67	66	91	50	44	28
S. aureus, methicillin resistant (MRSA), invasive	NR	NR	47	123	90	121	116	130	143	192
S. aureus, vancomycin intermediate resistance (VISA)	0	0	0	0	0	0	0	0	1	2
Salmonellosis	161	138	159	121	133	134	161	131	127	123
Shellfish poisoning	0	4	3	1	0	0	0	0	0	0
Shiga toxin-producing *Escherichia coli* (STEC)	49	41	26	19	21	28	20	27	33	29
Shigellosis	10	14	20	5	8	32	7	5	29	4
Spotted Fever Rickettsiosis	0	1	1	5	2	1	3	2	3	1
Strep pneumoniae, invasive	NA	NA	NA	127	151	136	102	121	137	135
Syphilis	16	14	20	14	40	19	20	17	15	49
Tetanus	0	0	0	0	0	0	0	1	0	0
Trichinosis (Trichinellosis)	0	0	0	0	1	1	0	0	0	0
Tuberculosis	16	19	9	9	8	9	17	15	14	18
Varicella (Chickenpox)	238	366	269	235	247	226	258	140	207	233
Vibriosis	5	0	3	4	5	4	10	9	9	6
West Nile Encephalitis	0	0	0	0	0	0	1	0	0	1

*Maine did not have any cases of the following reportable conditions in the last ten years:

- Anthrax
- Botulism
- California Serogroup viruses
- Chancroid
- Coronavirus
- Diphtheria
- Hepatitis D, chronic
- Leptospirosis
- Measles
- Plague
- Polio
- Psittacosis
- Rabies, human
- Ricin
- Rubella
- Smallpox
- Saint Louis Encephalitis
- Tularemia
- Viral Hemorrhagic Fever
- Western Equine Encephalitis
- Yellow Fever

**Counts may change from year to year. Data as of 6/2/2016
***CRE became reportable as of September 8, 2015 so the numbers do not represent a full year
****Group B strep is no longer reportable as of September 8, 2015

NR = not reportable; NA = not available

Rates per 100,000 persons of Selected* Reportable Disease by Year, Maine, 2006 – 2015**

Condition	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Anaplasma phagocytophilum	0.8	0.7	1.3	1.1	1.3	2.0	3.9	7.1	14.4	14.0
Babesiosis	0.7	0.8	0.8	0.2	0.4	0.7	0.8	2.7	3.2	4.1
Brucellosis	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0
Campylobacteriosis	10.4	11.3	11.5	13.0	11.1	14.7	14.2	17.2	16.9	16.6
Carbapenem-resistant Enterobacteriaceae (CRE)***	NR	NR	NR	NR	NR	NR	NR	NR	NR	0.9
Chikungunya Virus	NA	NA	NA	NA	NA	0.0	0.0	0.1	0.5	0.2
Chlamydia	174.4	193.1	197.3	185.3	194.9	233.5	256.8	258.9	262.4	289.7
Creutzfeldt-Jakob Disease (CJD)	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.1	0.1
Cryptosporidiosis	3.9	4.3	3.5	5.1	7.0	3.8	4.4	2.6	3.8	2.6
Cyclosporiasis	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.5	0.1
Dengue	0.5	0.1	0.2	0.2	0.5	0.0	0.0	0.1	0.1	0.4
Eastern Equine Encephalitis	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1
Ehrlichia chaffeensis	0.3	0.2	0.1	0.1	0.3	0.1	0.2	0.2	0.6	0.4
Giardiasis	14.5	15.0	14.3	16.9	16.8	12.9	12.7	16.4	11.6	8.7
Gonorrhea	10.2	9.0	7.3	10.8	12.3	20.6	34.3	18.5	17.7	31.8
Group A Streptococcus, invasive	1.4	2.1	2.1	1.6	3.5	3.2	2.8	2.8	4.0	4.2
Group B Streptococcus, invasive****	1.4	0.1	0.5	1.4	3.8	5.9	6.9	7.2	8.2	5.9
Haemophilus influenzae, invasive	1.6	1.0	1.6	1.6	1.0	2.0	1.7	1.9	1.6	2.9
Hantavirus infection, non-Hantavirus pulmonary syndromes	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0
Hemolytic uremic syndrome	0.5	0.1	0.1	0.2	0.1	0.2	0.2	0.2	0.1	0.5
Hepatitis A, acute	0.6	0.4	1.4	0.1	0.5	0.5	0.7	0.8	0.6	0.6
Hepatitis B, acute	2.0	1.4	1.1	1.1	1.0	0.6	0.7	0.8	0.9	0.7
Hepatitis B, chronic	NA	10.6	10.8	9.5	7.7	7.9	7.9	8.1	8.1	8.0
Hepatitis C, acute	0.2	0.1	0.2	0.2	0.2	0.9	1.0	0.7	2.3	2.3
Hepatitis C, chronic	NA	NA	NA	NA	87.0	89.1	90.6	94.8	107.0	111.9
Hepatitis D, acute	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0
Hepatitis E, acute	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0
HIV Infection	4.3	3.9	3.5	3.9	4.2	4.1	3.6	2.9	4.4	3.6
Legionellosis	0.8	0.7	0.8	0.8	0.9	1.4	1.4	1.7	1.4	1.2
Listeriosis	0.5	0.4	0.4	0.3	0.1	0.3	0.4	0.3	0.6	0.5
Lyme disease	25.6	40.2	69.0	74.0	56.6	76.2	83.8	104.2	105.9	90.5
Malaria	0.3	0.6	0.1	0.2	0.5	0.5	0.4	0.8	0.5	0.5
Meningococcal disease	0.7	0.6	0.5	0.3	0.4	0.4	0.2	0.3	0.2	0.3
Mumps	0.0	1.8	0.4	0.5	0.2	0.2	0.0	0.1	0.0	0.0
Novel Influenza A Virus Infections	0.0	0.0	0.0	168.3	1.3	0.2	0.0	0.0	0.0	0.0
Pertussis	13.2	6.3	3.7	6.1	4.0	15.4	55.5	25.0	41.9	21.1
Powassan Encephalitis	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1

Condition	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Q fever	0.3	0.5	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0
Rabies PEP	0.0	0.0	0.0	4.5	5.8	10.9	14.3	9.6	8.0	8.4
Rabies, animal	9.6	6.5	5.3	4.8	5.0	5.0	6.8	3.8	3.3	2.1
S. aureus, methicillin resistant (MRSA), invasive	NR	NR	3.6	9.3	6.8	9.1	8.7	9.8	10.7	14.4
S. aureus, vancomycin intermediate resistance (VISA)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2
Salmonellosis	12.2	10.5	12.1	9.2	10.0	10.1	12.1	9.9	9.5	9.3
Shellfish poisoning	0.0	0.3	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Shiga toxin-producing *Escherichia coli* (STEC)	3.7	3.1	2.0	1.4	1.6	2.1	1.5	2.0	2.5	2.2
Shigellosis	0.8	1.1	1.5	0.4	0.6	2.4	0.5	0.4	2.2	0.3
Spotted Fever Rickettsiosis	0.0	0.1	0.1	0.4	0.2	0.1	0.2	0.2	0.2	0.1
Strep pneumoniae, invasive	NA	NA	NA	9.6	11.4	10.2	7.7	9.1	10.3	10.2
Syphilis	1.2	1.1	1.5	1.1	3.0	1.4	1.5	1.3	1.1	3.7
Tetanus	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
Trichinosis (Trichinellosis)	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0
Tuberculosis	1.2	1.4	0.7	0.7	0.6	0.7	1.3	1.1	1.1	1.4
Varicella (Chickenpox)	18.0	27.8	20.4	17.8	18.8	17.0	19.4	10.5	15.6	17.5
Vibriosis	0.4	0.0	0.2	0.3	0.4	0.3	0.8	0.7	0.7	0.5
West Nile Encephalitis	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1

*Maine did not have any cases of the following reportable conditions in the last ten years:

- Anthrax
- Botulism
- California Serogroup viruses
- Chancroid
- Coronavirus
- Diphtheria
- Hepatitis D, chronic
- Leptospirosis
- Measles
- Plague
- Polio
- Psittacosis
- Rabies, human
- Ricin
- Rubella
- Smallpox
- Saint Louis Encephalitis
- Tularemia
- Viral Hemorrhagic Fever
- Western Equine Encephalitis
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***CRE became reportable as of September 8, 2015 so the numbers do not represent a full year
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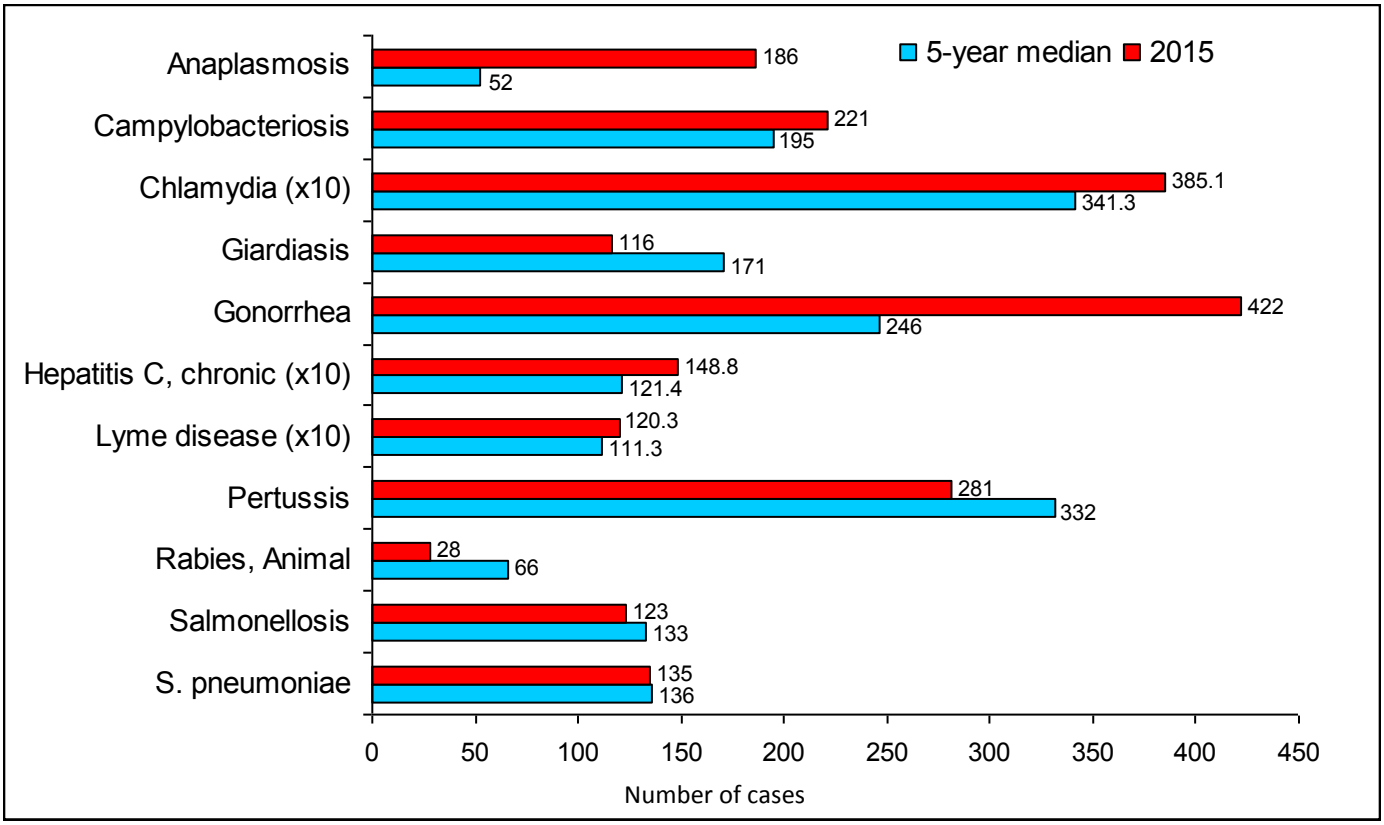
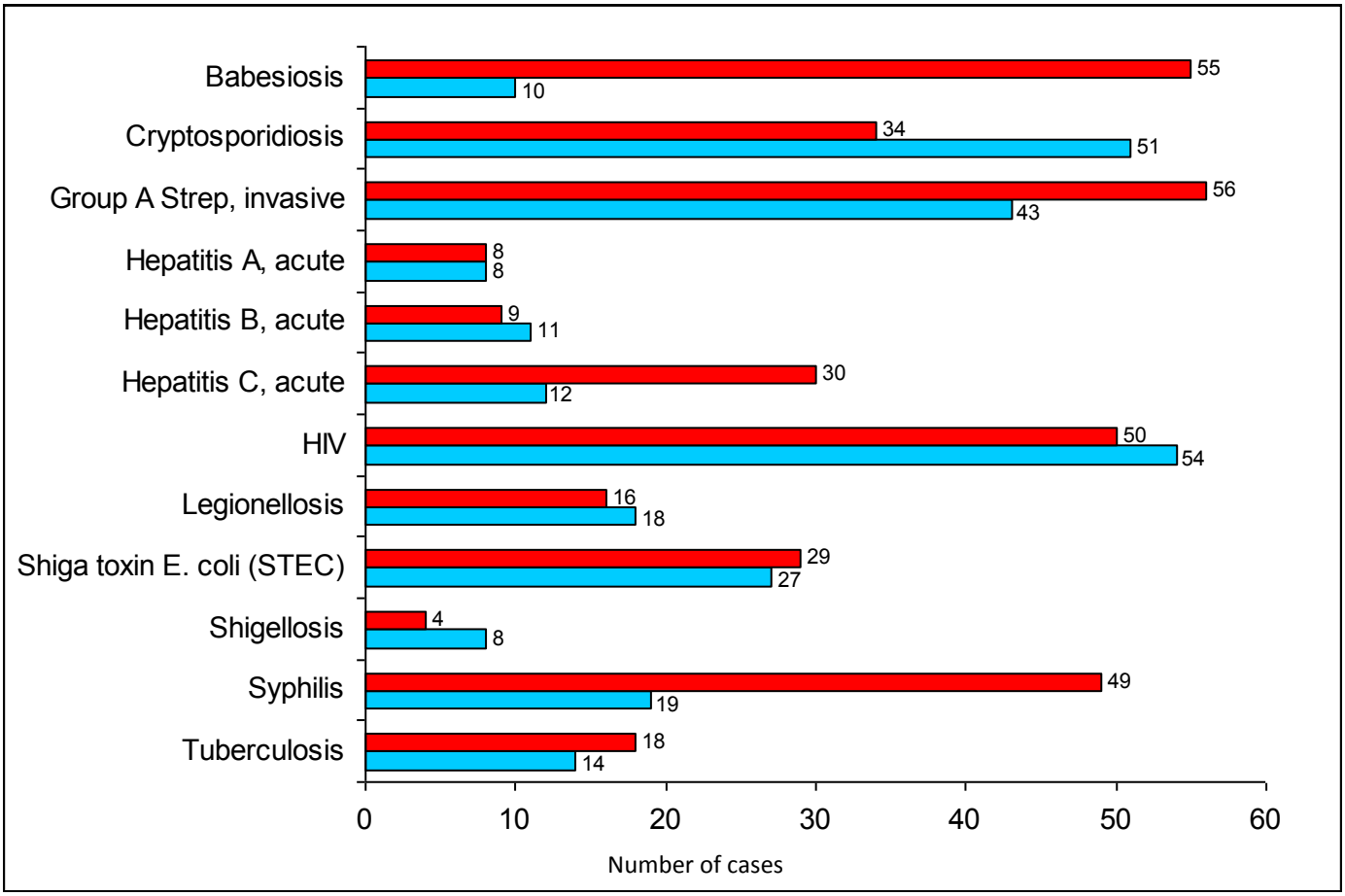
Selected Reportable Diseases in Maine, 2015 and Five Year Median





Note: Data as of 6/2/2016;

Number of Confirmed and Probable Cases and Rate per 100,000 Persons by County, Maine, 2015

County	*Anaplasma phagocytophilum*		Babesiosis		Campylobacter		*CRE*	
	#	Rate	#	Rate	#	Rate	#	Rate
Androscoggin	9	8.4	0	0.0	14	13.1	0	0.0
Aroostook	0	0.0	0	0.0	19	27.7	1	1.5
Cumberland	32	11.0	11	3.8	47	16.2	3	1.0
Franklin	1	3.3	0	0.0	4	13.3	0	0.0
Hancock	8	14.6	0	0.0	10	18.3	1	1.8
Kennebec	10	8.3	0	0.0	21	17.5	0	0.0
Knox	27	67.7	10	25.1	4	10.0	0	0.0
Lincoln	33	97.1	9	26.5	3	8.8	2	5.9
Oxford	2	3.5	2	3.5	11	19.2	0	0.0
Penobscot	0	0.0	1	0.7	26	17.0	0	0.0
Piscataquis	1	5.9	0	0.0	2	11.8	0	0.0
Sagadahoc	20	56.9	4	11.4	5	14.2	0	0.0
Somerset	0	0.0	0	0.0	7	13.7	0	0.0
Waldo	7	17.9	0	0.0	15	38.3	0	0.0
Washington	0	0.0	0	0.0	4	12.6	0	0.0
York	36	17.9	18	8.9	29	14.4	5	2.5
Maine Total	186	14.0	55	4.1	221	16.6	12	0.9

County	Chikungunya Virus		Chlamydia		Creutzfeldt-Jakob Disease (CJD)		Cryptosporidium	
	#	Rate	#	Rate	#	Rate	#	Rate
Androscoggin	0	0.0	539	502.6	0	0.0	0	0.0
Aroostook	0	0.0	103	150.1	0	0.0	0	0.0
Cumberland	2	0.7	963	332.1	1	0.3	3	1.0
Franklin	0	0.0	75	250.1	0	0.0	0	0.0
Hancock	0	0.0	96	175.6	0	0.0	5	9.1
Kennebec	0	0.0	380	316.7	0	0.0	8	6.7
Knox	0	0.0	75	188.2	0	0.0	1	2.5
Lincoln	0	0.0	54	159.0	0	0.0	1	2.9
Oxford	0	0.0	180	314.7	0	0.0	0	0.0
Penobscot	0	0.0	492	322.2	0	0.0	4	2.6
Piscataquis	0	0.0	19	112.2	0	0.0	6	35.4
Sagadahoc	0	0.0	72	204.8	0	0.0	0	0.0
Somerset	0	0.0	182	356.1	0	0.0	0	0.0
Waldo	0	0.0	82	209.4	0	0.0	2	5.1
Washington	0	0.0	64	202.4	0	0.0	1	3.2
York	0	0.0	475	236.1	0	0.0	3	1.5
Maine Total	2	0.2	3851	289.7	1	0.1	34	2.6

Number of Confirmed and Probable Cases and Rate per 100,000 Persons by County, Maine, 2015

County	Cyclosporiasis		Dengue		Eastern Equine Encephalitis		*Ehrlichia chaffeensis*	
	#	Rate	#	Rate	#	Rate	#	Rate
Androscoggin	0	0.0	1	0.9	0	0.0	0	0.0
Aroostook	0	0.0	0	0.0	0	0.0	0	0.0
Cumberland	1	0.3	2	0.7	0	0.0	0	0.0
Franklin	0	0.0	0	0.0	0	0.0	0	0.0
Hancock	0	0.0	1	1.8	0	0.0	0	0.0
Kennebec	0	0.0	0	0.0	0	0.0	1	0.8
Knox	0	0.0	0	0.0	0	0.0	1	2.5
Lincoln	0	0.0	1	2.9	0	0.0	0	0.0
Oxford	0	0.0	0	0.0	0	0.0	0	0.0
Penobscot	0	0.0	0	0.0	0	0.0	0	0.0
Piscataquis	0	0.0	0	0.0	0	0.0	0	0.0
Sagadahoc	0	0.0	0	0.0	0	0.0	0	0.0
Somerset	0	0.0	0	0.0	0	0.0	0	0.0
Waldo	0	0.0	0	0.0	0	0.0	0	0.0
Washington	0	0.0	0	0.0	0	0.0	0	0.0
York	0	0.0	0	0.0	1	0.5	3	1.5
Maine Total	1	0.1	5	0.4	1	0.1	5	0.4

County	Giardiasis		Gonorrhea		Group A Streptococcus, invasive		Group B Streptococcus, invasive	
	#	Rate	#	Rate	#	Rate	#	Rate
Androscoggin	8	7.5	135	125.9	3	2.8	7	6.5
Aroostook	3	4.4	1	1.5	6	8.7	10	14.6
Cumberland	25	8.6	145	50.0	14	4.8	7	2.4
Franklin	3	10.0	8	26.7	0	0.0	1	3.3
Hancock	7	12.8	3	5.5	1	1.8	3	5.5
Kennebec	5	4.2	22	18.3	6	5.0	11	9.2
Knox	8	20.1	5	12.5	0	0.0	0	0.0
Lincoln	4	11.8	3	8.8	2	5.9	0	0.0
Oxford	6	10.5	11	19.2	5	8.7	2	3.5
Penobscot	15	9.8	24	15.7	8	5.2	9	5.9
Piscataquis	3	17.7	2	11.8	0	0.0	2	11.8
Sagadahoc	4	11.4	5	14.2	1	2.8	3	8.5
Somerset	9	17.6	8	15.7	2	3.9	2	3.9
Waldo	3	7.7	3	7.7	2	5.1	1	2.6
Washington	2	6.3	1	3.2	0	0.0	6	19.0
York	11	5.5	46	22.9	6	3.0	15	7.5
Maine Total	116	8.7	422	31.7	56	4.2	79	5.9

Number and Rate of Confirmed and Probable Cases per 100,000 Persons by County, Maine, 2015

County	*Haemophilus influenzae*, invasive		Hemolytic uremic syndrome		Hepatitis A, acute		Hepatitis B, acute	
	#	Rate	#	Rate	#	Rate	#	Rate
Androscoggin	4	3.7	3	2.8	0	0.0	0	0.0
Aroostook	4	5.8	0	0.0	0	0.0	0	0.0
Cumberland	7	2.4	1	0.3	3	1.0	0	0.0
Franklin	0	0.0	0	0.0	0	0.0	0	0.0
Hancock	2	3.7	0	0.0	0	0.0	3	5.5
Kennebec	3	2.5	0	0.0	0	0.0	3	2.5
Knox	0	0.0	0	0.0	0	0.0	0	0.0
Lincoln	0	0.0	0	0.0	0	0.0	0	0.0
Oxford	3	5.2	0	0.0	0	0.0	0	0.0
Penobscot	3	2.0	0	0.0	3	2.0	2	1.3
Piscataquis	1	5.9	0	0.0	0	0.0	0	0.0
Sagadahoc	0	0.0	0	0.0	0	0.0	0	0.0
Somerset	0	0.0	0	0.0	0	0.0	0	0.0
Waldo	1	2.6	0	0.0	0	0.0	0	0.0
Washington	2	6.3	0	0.0	0	0.0	1	3.2
York	9	4.5	3	1.5	2	1.0	0	0.0
Maine Total	39	2.9	7	0.5	8	0.6	9	0.7

County	Hepatitis B, chronic		Hepatitis C, acute		Hepatitis C, chronic		HIV	
	#	Rate	#	Rate	#	Rate	#	Rate
Androscoggin	13	12.1	6	5.6	115	107.2	4	3.7
Aroostook	4	5.8	1	1.5	61	88.9	2	2.9
Cumberland	43	14.8	2	0.7	403	139.0	22	7.6
Franklin	0	0.0	0	0.0	17	56.7	1	3.3
Hancock	1	1.8	1	1.8	63	115.3	0	0.0
Kennebec	5	4.2	3	2.5	68	56.7	6	5.0
Knox	3	7.5	1	2.5	73	183.2	0	0.0
Lincoln	1	2.9	0	0.0	32	94.2	2	5.9
Oxford	1	1.7	1	1.7	57	99.6	2	3.5
Penobscot	11	7.2	6	3.9	199	130.3	2	1.3
Piscataquis	0	0.0	0	0.0	10	59.1	0	0.0
Sagadahoc	2	5.7	0	0.0	31	88.2	1	2.8
Somerset	4	7.8	1	2.0	35	68.5	0	0.0
Waldo	2	5.1	1	2.6	33	84.3	1	2.6
Washington	1	3.2	4	12.6	55	173.9	0	0.0
York	16	8.0	3	1.5	236	117.3	5	2.5
Maine Total	107	8.0	30	2.3	1488	111.9	48	3.6

Number and Rate of Confirmed and Probable Cases per 100,000 Persons by County, Maine, 2015

County	Legionellosis		Listeriosis		Lyme disease		Malaria	
	#	Rate	#	Rate	#	Rate	#	Rate
Androscoggin	4	3.7	0	0.0	50	46.6	3	2.8
Aroostook	1	1.5	3	4.4	2	2.9	0	0.0
Cumberland	5	1.7	0	0.0	257	88.6	4	1.4
Franklin	0	0.0	0	0.0	10	33.3	0	0.0
Hancock	0	0.0	0	0.0	120	219.5	0	0.0
Kennebec	1	0.8	1	0.8	154	128.4	0	0.0
Knox	0	0.0	0	0.0	118	296.1	0	0.0
Lincoln	1	2.9	1	2.9	73	214.9	0	0.0
Oxford	0	0.0	0	0.0	26	45.5	0	0.0
Penobscot	2	1.3	0	0.0	51	33.4	0	0.0
Piscataquis	0	0.0	0	0.0	1	5.9	0	0.0
Sagadahoc	0	0.0	1	2.8	48	136.6	0	0.0
Somerset	0	0.0	0	0.0	28	54.8	0	0.0
Waldo	0	0.0	0	0.0	63	160.9	0	0.0
Washington	2	6.3	1	3.2	19	60.1	0	0.0
York	0	0.0	0	0.0	183	91.0	0	0.0
Maine Total	16	1.2	7	0.5	1203	90.5	7	0.5

County	Meningococcal disease		Pertussis		Powassan Encephalitis		Rabies PEP	
	#	Rate	#	Rate	#	Rate	#	Rate
Androscoggin	0	0.0	7	6.5	0	0.0	5	4.7
Aroostook	1	1.5	12	17.5	0	0.0	8	11.7
Cumberland	2	0.7	28	9.7	1	0.3	22	7.6
Franklin	0	0.0	59	196.7	0	0.0	0	0.0
Hancock	0	0.0	7	12.8	0	0.0	2	3.7
Kennebec	0	0.0	8	6.7	0	0.0	7	5.8
Knox	0	0.0	11	27.6	0	0.0	5	12.5
Lincoln	0	0.0	4	11.8	0	0.0	3	8.8
Oxford	0	0.0	11	19.2	0	0.0	5	8.7
Penobscot	0	0.0	17	11.1	0	0.0	14	9.2
Piscataquis	0	0.0	1	5.9	0	0.0	2	11.8
Sagadahoc	0	0.0	3	8.5	0	0.0	5	14.2
Somerset	0	0.0	15	29.3	0	0.0	7	13.7
Waldo	0	0.0	64	163.5	0	0.0	2	5.1
Washington	1	3.2	1	3.2	0	0.0	4	12.6
York	0	0.0	33	16.4	0	0.0	21	10.4
Maine Total	4	0.3	281	21.1	1	0.1	112	8.4

Number and Rate of Confirmed and Probable Cases per 100,000 Persons by County, Maine, 2015

County	Rabies, animal		*S. aureus*, methicillin resistant (MRSA)		*S. aureus*, vancomycin intermediate resistance (VISA)		Salmonellosis	
	#	Rate	#	Rate	#	Rate	#	Rate
Androscoggin	4	NA	5	4.7	0	0.0	8	7.5
Aroostook	0	NA	12	17.5	1	1.5	8	11.7
Cumberland	3	NA	39	13.4	0	0.0	22	7.6
Franklin	0	NA	4	13.3	0	0.0	4	13.3
Hancock	0	NA	12	22.0	0	0.0	10	18.3
Kennebec	6	NA	29	24.2	0	0.0	8	6.7
Knox	1	NA	7	17.6	0	0.0	6	15.1
Lincoln	0	NA	3	8.8	0	0.0	1	2.9
Oxford	1	NA	4	7.0	0	0.0	3	5.2
Penobscot	3	NA	23	15.1	0	0.0	17	11.1
Piscataquis	0	NA	4	23.6	1	5.9	1	5.9
Sagadahoc	1	NA	5	14.2	0	0.0	6	17.1
Somerset	5	NA	12	23.5	0	0.0	6	11.7
Waldo	0	NA	8	20.4	0	0.0	1	2.6
Washington	0	NA	3	9.5	0	0.0	2	6.3
York	4	NA	22	10.9	0	0.0	20	9.9
Maine Total	28	NA	192	14.4	2	0.2	123	9.3

County	Shiga toxin-producing *E. coli* (STEC)		Shigellosis		Spotted Fever Rickettsiosis		*Strep pneumoniae*, invasive	
	#	Rate	#	Rate	#	Rate	#	Rate
Androscoggin	4	3.7	0	0.0	0	0.0	10	9.3
Aroostook	2	2.9	0	0.0	0	0.0	4	5.8
Cumberland	4	1.4	2	0.7	0	0.0	24	8.3
Franklin	0	0.0	0	0.0	0	0.0	2	6.7
Hancock	0	0.0	0	0.0	0	0.0	7	12.8
Kennebec	3	2.5	0	0.0	0	0.0	13	10.8
Knox	1	2.5	0	0.0	0	0.0	5	12.5
Lincoln	0	0.0	0	0.0	0	0.0	3	8.8
Oxford	2	3.5	0	0.0	0	0.0	8	14.0
Penobscot	2	1.3	0	0.0	1	0.7	18	11.8
Piscataquis	0	0.0	0	0.0	0	0.0	4	23.6
Sagadahoc	3	8.5	0	0.0	0	0.0	2	5.7
Somerset	1	2.0	1	2.0	0	0.0	7	13.7
Waldo	0	0.0	0	0.0	0	0.0	11	28.1
Washington	0	0.0	0	0.0	0	0.0	5	15.8
York	7	3.5	1	0.5	0	0.0	12	6.0
Maine Total	29	2.2	4	0.3	1	0.1	135	10.2

Number and Rate of Confirmed and Probable Cases per 100,000 Persons by County, Maine, 2015

County	Syphilis		Tuberculosis		Varicella (Chickenpox)		Vibriosis	
	#	Rate	#	Rate	#	Rate	#	Rate
Androscoggin	1	0.9	7	6.5	10	9.3	0	0.0
Aroostook	0	0.0	0	0.0	19	27.7	0	0.0
Cumberland	26	9.0	8	2.8	45	15.5	3	1.0
Franklin	0	0.0	0	0.0	0	0.0	0	0.0
Hancock	1	1.8	0	0.0	16	29.3	0	0.0
Kennebec	5	4.2	0	0.0	17	14.2	0	0.0
Knox	2	5.0	0	0.0	3	7.5	1	2.5
Lincoln	0	0.0	0	0.0	10	29.4	0	0.0
Oxford	0	0.0	0	0.0	8	14.0	1	1.7
Penobscot	2	1.3	0	0.0	43	28.2	0	0.0
Piscataquis	0	0.0	1	5.9	3	17.7	0	0.0
Sagadahoc	2	5.7	0	0.0	6	17.1	0	0.0
Somerset	6	11.7	1	2.0	13	25.4	0	0.0
Waldo	0	0.0	0	0.0	6	15.3	0	0.0
Washington	0	0.0	0	0.0	2	6.3	1	3.2
York	4	2.0	1	0.5	32	15.9	0	0.0
Maine Total	49	3.7	18	1.4	233	17.5	6	0.5

County	West Nile Encephalitis	
	#	Rate
Androscoggin	0	0.0
Aroostook	0	0.0
Cumberland	1	0.3
Franklin	0	0.0
Hancock	0	0.0
Kennebec	0	0.0
Knox	0	0.0
Lincoln	0	0.0
Oxford	0	0.0
Penobscot	0	0.0
Piscataquis	0	0.0
Sagadahoc	0	0.0
Somerset	0	0.0
Waldo	0	0.0
Washington	0	0.0
York	0	0.0
Maine Total	1	0.1

Number and Rate of Confirmed and Probable Cases per 100,000 Persons by District*, Maine, 2015

District	*Anaplasma phagocytophilum*		Babesiosis		Campylobacter		*CRE*	
	#	Rate	#	Rate	#	Rate	#	Rate
Aroostook	0	0.0	0	0.0	19	27.7	1	1.5
Central	10	5.8	0	0.0	28	16.4	0	0.0
Cumberland	32	11.0	11	3.8	47	16.2	3	1.0
Downeast	8	9.3	0	0.0	14	16.2	1	1.2
MidCoast	87	58.7	23	15.5	27	18.2	2	1.4
Penquis	1	0.6	1	0.6	28	16.5	0	0.0
Western	12	6.2	2	1.0	29	14.9	0	0.0
York	36	17.9	18	8.9	29	14.4	5	2.5
State	186	14.0	55	4.1	221	16.6	12	0.9

District	Chikungunya Virus		Chlamydia		Creutzfeldt-Jakob Disease (CJD)		Cryptosporidium	
	#	Rate	#	Rate	#	Rate	#	Rate
Aroostook	0	0.0	103	150.1	0	0.0	0	0.0
Central	0	0.0	562	328.5	0	0.0	8	4.7
Cumberland	2	0.7	963	332.1	1	0.3	3	1.0
Downeast	0	0.0	160	185.4	0	0.0	6	7.0
MidCoast	0	0.0	283	191.1	0	0.0	4	2.7
Penquis	0	0.0	511	301.3	0	0.0	10	5.9
Western	0	0.0	794	408.4	0	0.0	0	0.0
York	0	0.0	475	236.1	0	0.0	3	1.5
State	2	0.2	3851	289.7	1	0.1	34	2.6

District	Cyclosporiasis		Dengue		Eastern Equine Encephalitis		*Ehrlichia chaffeensis*	
	#	Rate	#	Rate	#	Rate	#	Rate
Aroostook	0	0.0	0	0.0	0	0.0	0	0.0
Central	0	0.0	0	0.0	0	0.0	1	0.6
Cumberland	1	0.3	2	0.7	0	0.0	0	0.0
Downeast	0	0.0	1	1.2	0	0.0	0	0.0
MidCoast	0	0.0	1	0.7	0	0.0	1	0.7
Penquis	0	0.0	0	0.0	0	0.0	0	0.0
Western	0	0.0	1	0.5	0	0.0	0	0.0
York	0	0.0	0	0.0	1	0.5	3	1.5
State	1	0.1	5	0.4	1	0.1	5	0.4

*See map in Appendix K for location of districts

Number and Rate of Confirmed and Probable Cases per 100,000 Persons by District*, Maine, 2015

District	Giardiasis		Gonorrhea		Group A Streptococcus, invasive		Group B Streptococcus, invasive	
	#	Rate	#	Rate	#	Rate	#	Rate
Aroostook	3	4.4	1	1.5	6	8.7	10	14.6
Central	14	8.2	30	17.5	8	4.7	13	7.6
Cumberland	25	8.6	145	50.0	14	4.8	7	2.4
Downeast	9	10.4	4	4.6	1	1.2	9	10.4
MidCoast	19	12.8	16	10.8	5	3.4	4	2.7
Penquis	18	10.6	26	15.3	8	4.7	11	6.5
Western	17	8.7	154	79.2	8	4.1	10	5.1
York	11	5.5	46	22.9	6	3.0	15	7.5
State	116	8.7	422	31.7	56	4.2	79	5.9

District	*Haemophilus influenzae*, invasive		Hemolytic uremic syndrome		Hepatitis A, acute		Hepatitis B, acute	
	#	Rate	#	Rate	#	Rate	#	Rate
Aroostook	4	5.8	0	0.0	0	0.0	0	0.0
Central	3	1.8	0	0.0	0	0.0	3	1.8
Cumberland	7	2.4	1	0.3	3	1.0	0	0.0
Downeast	4	4.6	0	0.0	0	0.0	4	4.6
MidCoast	1	0.7	0	0.0	0	0.0	0	0.0
Penquis	4	2.4	0	0.0	3	1.8	2	1.2
Western	7	3.6	3	1.5	0	0.0	0	0.0
York	9	4.5	3	1.5	2	1.0	0	0.0
State	39	2.9	7	0.5	8	0.6	9	0.7

District	Hepatitis B, chronic		Hepatitis C, acute		Hepatitis C, chronic		HIV	
	#	Rate	#	Rate	#	Rate	#	Rate
Aroostook	4	5.8	1	1.5	61	88.9	2	2.9
Central	9	5.3	4	2.3	103	60.2	6	3.5
Cumberland	43	14.8	2	0.7	403	139.0	22	7.6
Downeast	2	2.3	5	5.8	118	136.8	0	0.0
MidCoast	8	5.4	2	1.4	169	114.1	3	2.0
Penquis	11	6.5	6	3.5	209	123.2	2	1.2
Western	14	7.2	7	3.6	189	97.2	7	3.6
York	16	8.0	3	1.5	236	117.3	5	2.5
State	107	8.0	30	2.3	1488	111.9	48	3.6

*See map in Appendix K for location of districts

Number and Rate of Confirmed and Probable Cases per 100,000 Persons by District*, Maine, 2015

District	Legionellosis		Listeriosis		Lyme disease		Malaria	
	#	Rate	#	Rate	#	Rate	#	Rate
Aroostook	1	1.5	3	4.4	2	2.9	0	0.0
Central	1	0.6	1	0.6	182	106.4	0	0.0
Cumberland	5	1.7	0	0.0	257	88.6	4	1.4
Downeast	2	2.3	1	1.2	139	161.1	0	0.0
MidCoast	1	0.7	2	1.4	302	203.9	0	0.0
Penquis	2	1.2	0	0.0	52	30.7	0	0.0
Western	4	2.1	0	0.0	86	44.2	3	1.5
York	0	0.0	0	0.0	183	91.0	0	0.0
State	16	1.2	7	0.5	1203	90.5	7	0.5

District	Meningococcal disease		Pertussis		Powassan Encephalitis		Rabies PEP	
	#	Rate	#	Rate	#	Rate	#	Rate
Aroostook	1	1.5	12	17.5	0	0.0	8	11.7
Central	0	0.0	23	13.4	0	0.0	14	8.2
Cumberland	2	0.7	28	9.7	1	0.3	22	7.6
Downeast	1	1.2	8	9.3	0	0.0	6	7.0
MidCoast	0	0.0	82	55.4	0	0.0	15	10.1
Penquis	0	0.0	18	10.6	0	0.0	16	9.4
Western	0	0.0	77	39.6	0	0.0	10	5.1
York	0	0.0	33	16.4	0	0.0	21	10.4
State	4	0.3	281	21.1	1	0.1	112	8.4

District	Rabies, animal		*S. aureus*, methicillin resistant (MRSA)		*S. aureus*, vancomycin intermediate resistance (VISA)		Salmonellosis	
	#	Rate	#	Rate	#	Rate	#	Rate
Aroostook	0	NA	12	17.5	1	1.5	8	11.7
Central	11	NA	41	24.0	0	0.0	14	8.2
Cumberland	3	NA	39	13.4	0	0.0	22	7.6
Downeast	0	NA	15	17.4	0	0.0	12	13.9
MidCoast	2	NA	23	15.5	0	0.0	14	9.5
Penquis	3	NA	27	15.9	1	0.6	18	10.6
Western	5	NA	13	6.7	0	0.0	15	7.7
York	4	NA	22	10.9	0	0.0	20	9.9
State	28	NA	192	14.4	2	0.2	123	9.3

*See map in Appendix K for location of districts

Number and Rate of Confirmed and Probable Cases per 100,000 Persons by District*, Maine, 2015

District	Shiga toxin-producing *E. coli* (STEC)		Shigellosis		Spotted Fever Rickettsiosis		*Strep pneumoniae*, invasive	
	#	Rate	#	Rate	#	Rate	#	Rate
Aroostook	2	2.9	0	0.0	0	0.0	4	5.8
Central	4	2.3	1	0.6	0	0.0	20	11.7
Cumberland	4	1.4	2	0.7	0	0.0	24	8.3
Downeast	0	0.0	0	0.0	0	0.0	12	13.9
MidCoast	4	2.7	0	0.0	0	0.0	21	14.2
Penquis	2	1.2	0	0.0	1	0.6	22	13.0
Western	6	3.1	0	0.0	0	0.0	20	10.3
York	7	3.5	1	0.5	0	0.0	12	6.0
State	29	2.2	4	0.3	1	0.1	135	10.2

District	Syphilis		Tuberculosis		Varicella (Chickenpox)		Vibriosis	
	#	Rate	#	Rate	#	Rate	#	Rate
Aroostook	0	0.0	0	0.0	19	27.7	0	0.0
Central	11	6.4	1	0.6	30	17.5	0	0.0
Cumberland	26	9.0	8	2.8	45	15.5	3	1.0
Downeast	1	1.2	0	0.0	18	20.9	1	1.2
MidCoast	4	2.7	0	0.0	25	16.9	1	0.7
Penquis	2	1.2	1	0.6	46	27.1	0	0.0
Western	1	0.5	7	3.6	18	9.3	1	0.5
York	4	2.0	1	0.5	32	15.9	0	0.0
State	49	3.7	18	1.4	233	17.5	6	0.5

District	West Nile Encephalitis	
	#	Rate
Aroostook	0	0.0
Central	0	0.0
Cumberland	1	0.3
Downeast	0	0.0
MidCoast	0	0.0
Penquis	0	0.0
Western	0	0.0
York	0	0.0
State	1	0.1

*See map in Appendix K for location of districts

Race and Ethnicity of Selected Reportable Diseases, Maine, 2015

	Race					Ethnicity		
	AIAN	API	B	W	U	H	NH	U
Anaplasma phagocytophilum	0	0	1	172	13	2	162	22
Babesiosis	1	0	0	50	4	0	49	6
Campylobacteriosis	1	2	1	204	13	3	198	20
Carbapenem-resistant Enterobacteriaceae (CRE)	0	0	0	5	7	0	3	9
Chikungunya Virus	0	0	0	2	0	0	2	0
Chlamydia	11	20	119	2040	1661	18	2152	1681
Creutzfeldt-Jakob Disease (CJD)	0	0	0	1	0	0	1	0
Cryptosporidiosis	0	0	0	34	0	0	34	0
Cyclosporiasis	0	0	0	0	1	0	0	1
Dengue	0	1	0	2	2	0	3	2
Eastern Equine Encephalitis	0	0	0	1	0	0	1	0
Ehrlichia chaffensis	0	0	0	3	2	0	3	2
Giardiasis	0	0	4	100	12	1	100	15
Gonorrhea	0	3	49	274	96	1	328	93
Group A Streptococcus, invasive	1	0	1	53	1	1	49	6
Group B Streptococcus, invasive	0	0	0	44	35	5	26	48
Haemophilus influenzae, invasive	0	0	0	36	3	1	30	8
Hemolytic uremic syndrome	0	0	0	7	0	0	6	1
Hepatitis A, acute	0	0	1	7	0	0	8	0
Hepatitis B, acute	0	0	0	8	1	0	5	4
Hepatitis B, chronic	1	22	33	39	12	0	83	24
Hepatitis C, acute	0	0	1	27	2	0	27	3
Hepatitis C, chronic	9	2	14	631	832	9	428	1051
HIV Infection	0	1	14	23	1	4	34	10
Legionellosis	0	0	0	16	0	0	15	1
Listeriosis	0	0	0	6	1	0	6	1
Lyme disease	1	1	1	991	209	3	413	787
Malaria	0	0	5	1	1	0	7	0
Meningococcal disease	1	0	0	3	0	0	4	0
Pertussis	0	0	2	252	27	1	236	44
Powassan Encephalitis	0	0	0	1	0	0	1	0
Rabies PEP	0	0	0	45	67	0	34	78
S. aureus, methicillin resistant (MRSA), invasive	2	1	0	110	79	17	64	111
S. aureus, vancomycin intermediate resistance (VISA)	0	0	0	2	0	0	0	2
Salmonellosis	2	5	0	105	11	2	104	17
Shiga toxin-producing *E. coli* (STEC)	0	1	0	27	1	0	26	3
Shigellosis	0	0	0	4	0	0	4	0
Spotted Fever Rickettsiosis	0	0	0	1	0	0	1	0

Race and Ethnicity of Selected Reportable Diseases, Maine, 2015

	Race					Ethnicity		
	AIAN	API	B	W	U	H	NH	U
Strep pneumoniae, invasive	1	1	1	125	7	6	105	24
Syphilis	0	0	0	42	7	1	37	11
Tuberculosis	0	2	12	4	0	0	18	0
Varicella (Chickenpox)	0	3	3	147	80	1	118	114
Vibriosis	0	0	0	5	1	0	5	1
West Nile Encephalitis	0	0	0	1	0	0	1	0

Legend:

AIAN – American Indian or Alaskan Native
API - Asian or Pacific Islander
B - Black or African American
W – White
U – Unknown
H – Hispanic
NH – Non-Hispanic

Reported Outbreaks by County and Program Area, Maine, 2015

	ADC	GI	HAI	ILI*	VPD	Varicella	Vector
Androscoggin	3	5	0	14	0	0	0
Aroostook	0	4	1	10	0	0	0
Cumberland	0	10	1	44	1	2	2
Franklin	0	1	0	4	0	0	0
Hancock	0	2	0	8	0	0	0
Kennebec	1	6	0	20	0	0	0
Knox	0	2	0	13	0	0	0
Lincoln	0	0	0	2	0	0	0
Oxford	0	0	0	6	0	0	0
Penobscot	1	7	4	21	0	0	0
Piscataquis	1	0	0	1	0	0	0
Sagadahoc	0	2	0	4	0	0	0
Somerset	0	1	0	9	0	0	0
Waldo	0	0	0	4	0	0	0
Washington	0	2	0	2	0	0	0
York	0	4	0	19	1	1	0
Out of State	0	9	0	0	0	0	0
Total	**6**	**55**	**6**	**181**	**2**	**3**	**2**

Outbreaks are a reportable condition in Maine and are classified into types of outbreak by the potential etiology. All reported outbreaks are assigned out for follow up with a field epidemiologist. This table only represents those that met an outbreak definition in order to be counted. Outbreak definitions vary based on the category, setting, and suspected etiology.

*ILI outbreaks included here are for the calendar year 2015, so includes outbreaks from the 2014-15 and 2015-16 influenza seasons.

ADC: Airborne and Direct Contact outbreaks are transmitted through airborne particles or through direct contact. Examples of Airborne and Direct Contact outbreaks include pneumonia, conjunctivitis, hand foot and mouth disease, and MRSA.

GI: GI illness outbreaks are characterized through gastrointestinal symptoms. The most commonly reported GI outbreak is caused by norovirus. Out of state GI outbreaks are when a Maine resident matches a national cluster through Pulsed-field Gel Electrophoresis (PFGE) testing such as salmonella or Shiga toxin producing *e. coli* (STEC).

HAI: Healthcare Associated Infection outbreaks are outbreaks spread through a healthcare facility. An example of an HAI outbreak is caused by *C. difficile*.

ILI: Influenza-like illness outbreaks are characterized as a respiratory illness with fever and/or sore throat without another known cause. The majority of ILI outbreaks are confirmed as influenza through laboratory testing.

VPD: Vaccine preventable disease outbreaks are caused by one of the illnesses for which there is a routine vaccine. The most commonly reported VPD outbreak is caused by pertussis.

Varicella (chickenpox) outbreaks are caused by chickenpox. An outbreak is defined by three or more confirmed cases in a single setting.

Vector outbreaks are caused by an organism that spread infection from one host to another. The most common vectors in Maine are ticks and mosquitoes, but the most common vector outbreak is caused by scabies.

Anaplasmosis

2015 Case Total	**186**
Maine Rate	**14.0 per 100,000**
U.S. rate (2014)	**0.9 per 100,000**

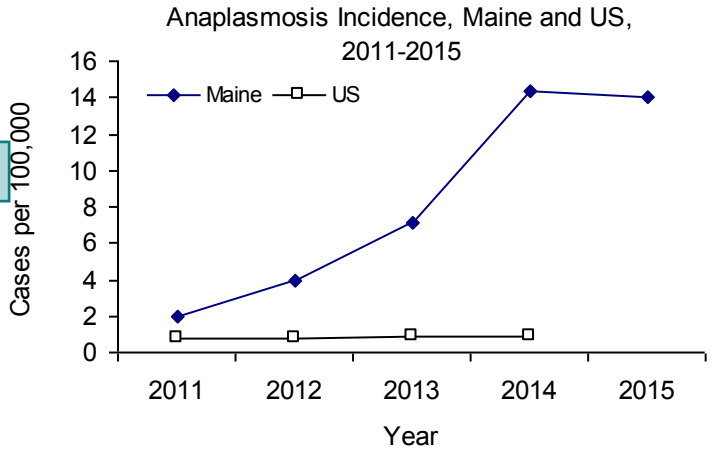
Anaplasmosis is a disease caused by the bacterium *Anaplasma phagocytophilum*.

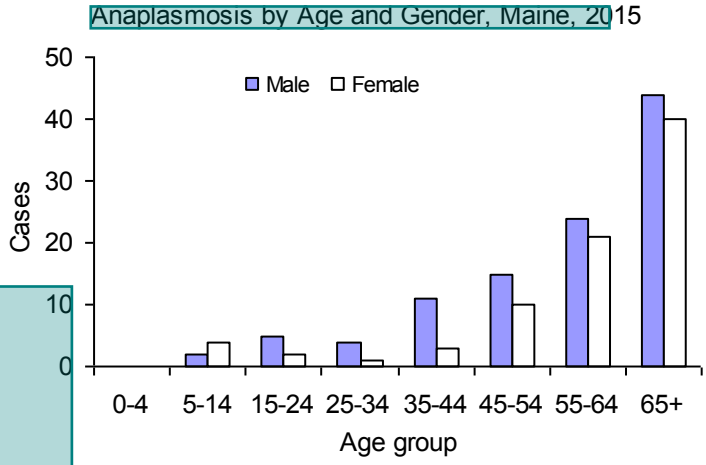
Signs and symptoms of anaplasmosis include: fever, headache, malaise, and body aches. Anaplasmosis is transmitted to a person by the bite of an infected deer tick (*Ixodes scapularis*), one of the most common ticks in Maine.

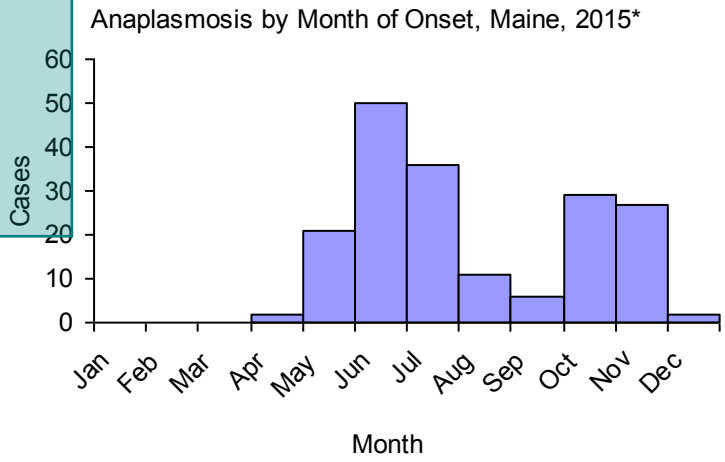
- 186 cases represent a decrease from 191 cases in 2014
- The 2010-2014 median number of cases per year was 52
- Median age was 63 years
- Age range was 7 to 95 years
- Cases were 43.5% female and 56.5% male
- Greatest number of cases occurred during the summer and fall months

The best way to prevent infection is to take measures to protect against tick bites. Checking for ticks after visiting a tick infested area is an important way to reduce the risk of contracting anaplasmosis. Using EPA approved repellents such as DEET on skin or permethrin on clothing is a good way to protect against tick bites. Always follow the instructions on the label when applying repellent products. If an engorged tick is found, it should be safely removed and saved for identification. Monitor for signs and symptoms for 30 days after the tick bite.

For more information about submitting a tick for identification only (not testing) visit http://extension.umaine.edu/ipm/tickid/







*onset date missing for two cases

Babesiosis

2015 Case Total	**55**
Maine Rate	**4.1 per 100,000**
U.S. rate (2014)	**0.6 per 100,000**

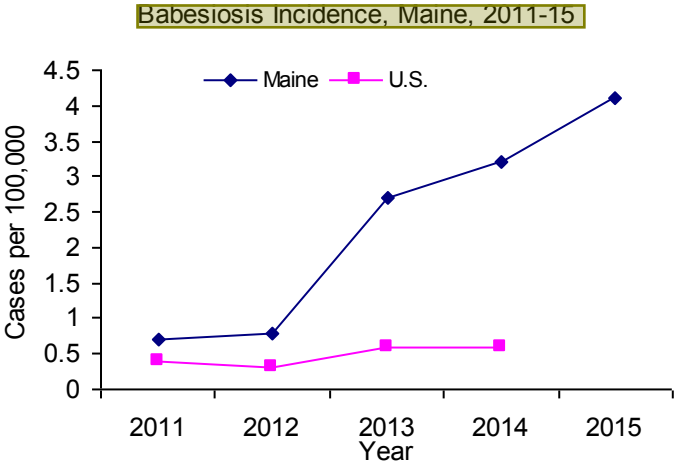
Babesiosis is caused by a parasite that may be carried by ticks. Many individuals that get the disease do not have symptoms. Serious symptoms can occur, especially in persons who are immunosuppressed, those without a spleen, or people who are co-infected with Lyme disease. Babesiosis may also occur after a blood transfusion from an infected donor.

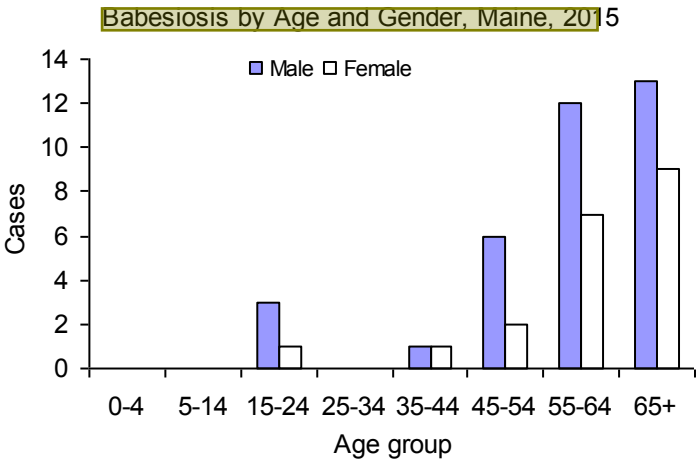
Common symptoms include: extreme fatigue, aches, fever, chills, sweating, dark urine, and possibly anemia.

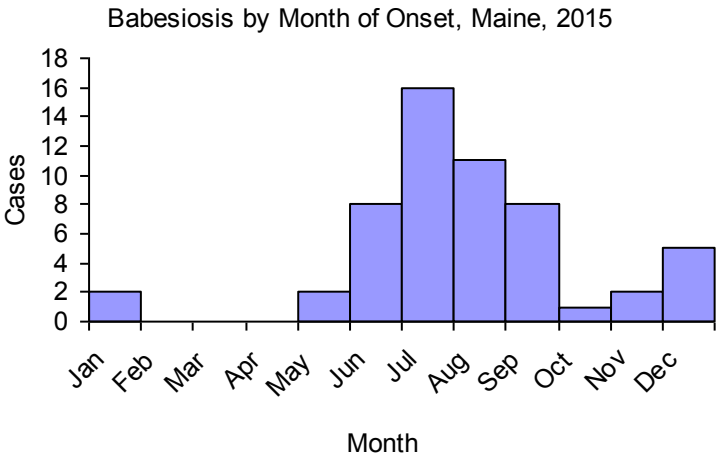
- 55 cases represent an increase from 42 cases in 2014
- The 2010-2014 median number of cases was 10
- Median age was 62 years
- Age range was 17 to 86 years
- Cases were 36.4% female and 63.6% male
- Greatest number of cases occurred during the summer months

The best way to prevent infection is to take measures to protect against tick bites. Checking for ticks after visiting a tick infested area is an important way to reduce the risk of contracting babesiosis. Using EPA approved repellents such as DEET on skin or permethrin on clothing is a good way to protect against tick bites. Always follow the instructions on the label when applying repellent products. If an engorged tick is found, it should be safely removed and saved for identification. Monitor for signs and symptoms for 30 days after the tick bite.

For more information about submitting a tick for identification only (not testing) visit http://extension.umaine.edu/ipm/tickid/







*onset date missing for four cases

Campylobacteriosis

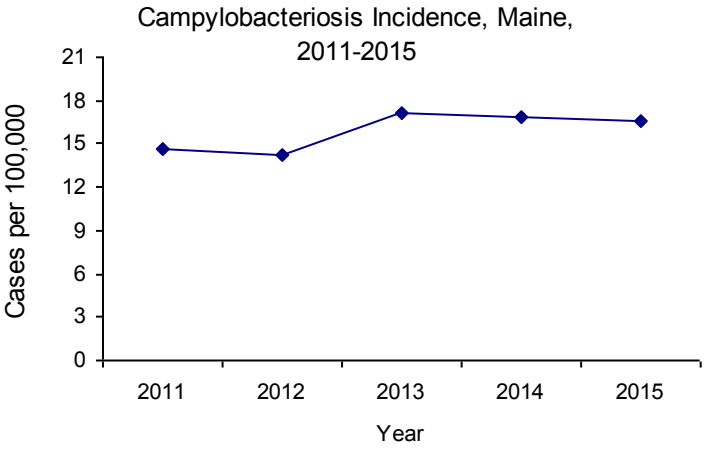
2015 Case Total	**221**
Maine Rate	**16.6 per 100,000**
U.S. rate (2014)	**Not reportable**

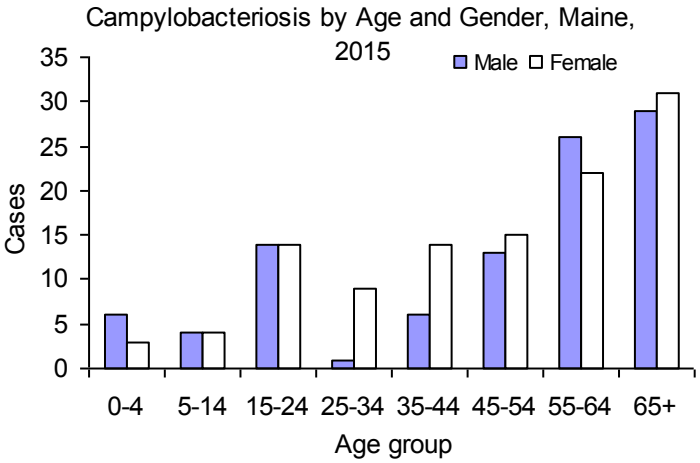
Campylobacteriosis is one of the most common infectious diseases causing diarrhea in the United States. Symptoms include: diarrhea, cramping, abdominal pain and fever. Most people recover within 5 to 10 days.

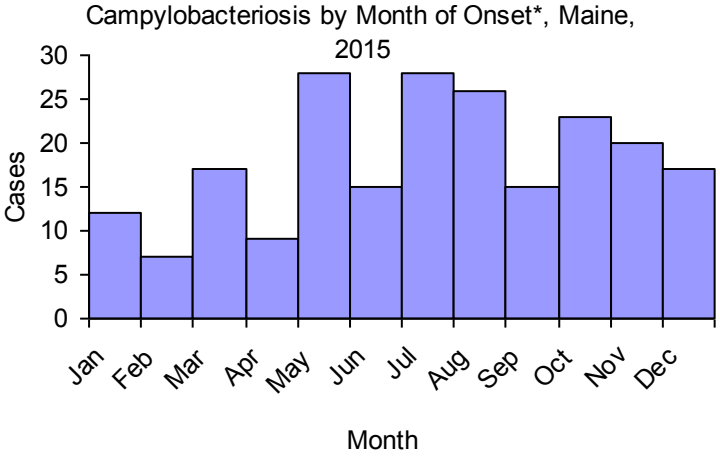
Campylobacteriosis is associated with handling raw poultry or eating undercooked poultry meat, consuming unpasteurized milk and other dairy products and from exposure to contaminated foods. Raw foods, such as vegetables or salad, can be contaminated if the same cutting board or utensils are used for both raw foods and raw poultry items and not cleaned between preparations.

- 221 cases represent a decrease from 224 cases in 2014
- The 2010-2014 median number of cases was 195
- Median age was 54 years
- Age range was 1 to 92 years
- Cases were 50.7% female and 49.3% male
- Highest rates in Aroostook and Waldo counties
- Greatest number of cases occurred during the summer months

To prevent illness, individuals should cook poultry and other meats properly, avoid consuming untreated water, raw milk and milk products, and unpasteurized juice. Wash hands well with soap and water after contact with baby poultry, pets and other animals.







*onset date missing for 4 cases

Carbapenem-resistant Enterobacteriaceae

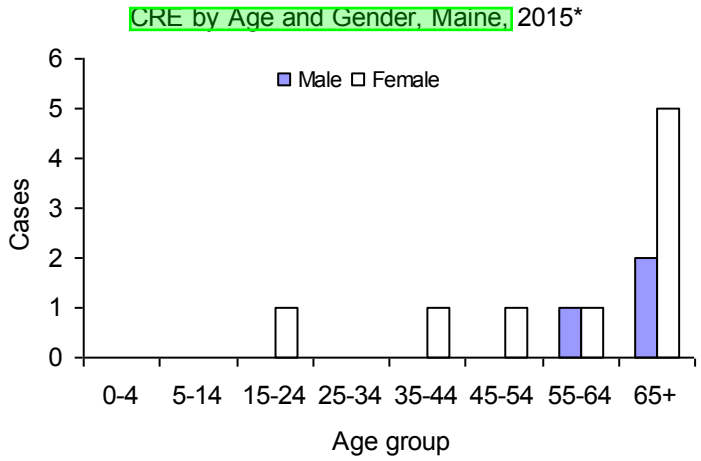
2015 Case Total	**12**
Maine Rate	**0.9 per 100,000**
U.S. rate (2015)	**Not reportable**

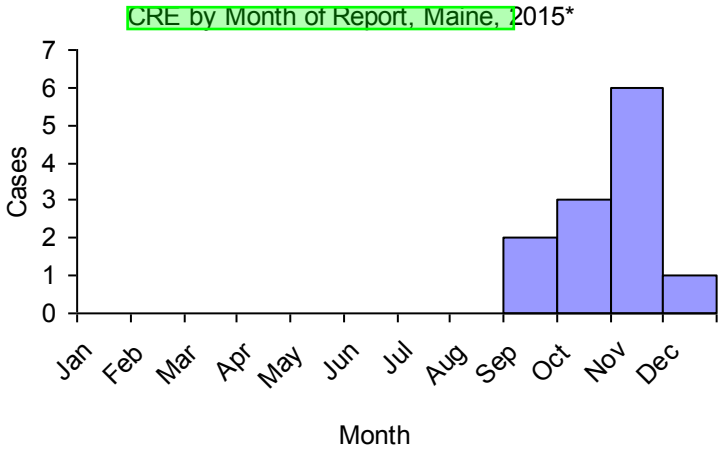
Carbapenem-resistant Enterobacteriaceae (CRE) is caused by a strain of bacteria which is highly resistant to antibiotics. The type of bacteria that cause CRE infections are commonly found in the human intestines. In rare cases the bacteria can travel out of the gut and cause urinary tract infections, bloodstream infections, wound infections, and/or pneumonia. CRE infections can be very difficult to treat and deadly in serious cases.

Individuals at the greatest risk for infection are those who are ill and those who have had exposure to healthcare facilities. Other more specific risk factors for infection include individuals who have had invasive devices such as ventilators (breathing machine), urinary (bladder) catheters, or intravenous (vein) catheters and individuals who are taking long courses of antibiotics.

- Median age was 75 years
- Age range was 23 years to 90 years
- Cases were 75% female and 25% male

CRE is transmitted through direct contact with infected people or contaminated surfaces. To reduce CRE transmission, wash your hands often with soap and water or use an alcohol-based sanitizer. Tell your doctor if you have been hospitalized in another facility or country. If you are prescribed antibiotics, take the medication only as prescribed. Expect all healthcare providers to perform proper hand hygiene before touching you or any devices going into your body.





*CRE became a notifiable condition on September 8, 2015; therefore, a full year of data is not available. Data presented represent cases reported from Sept – Dec 2015.

Chikungunya Virus

2015 Case Total	**2**
Maine Rate	**0.2 per 100,000**
U.S. rate (2014)	**0.9 per 100,000**

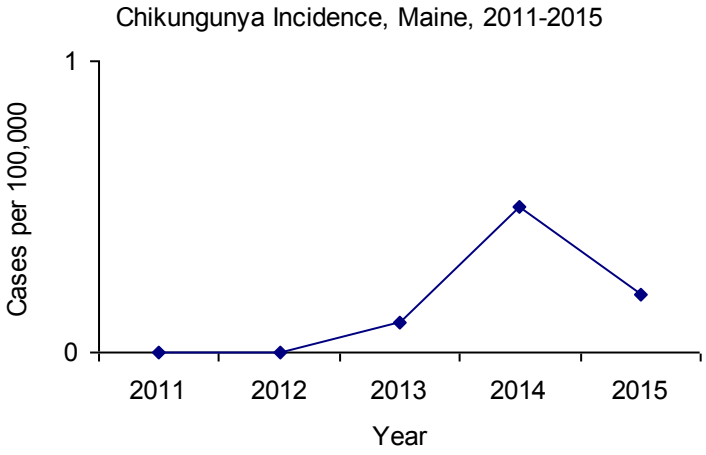
Chikungunya is a viral disease carried by *Aedes aegypti* and *Aedes albopictus* mosquitoes. Symptoms include fever, joint pain, headache, muscle pain, joint swelling, and rash. Chikungunya was introduced into the Americas in 2013 and spread dramatically.

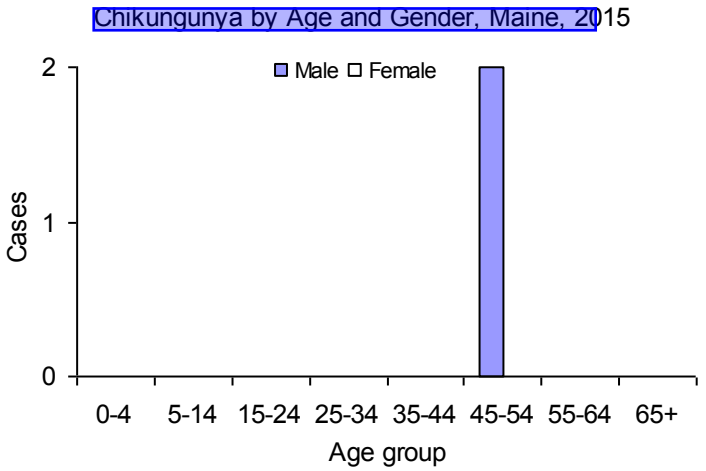
Chikungunya became nationally notifiable in 2015.

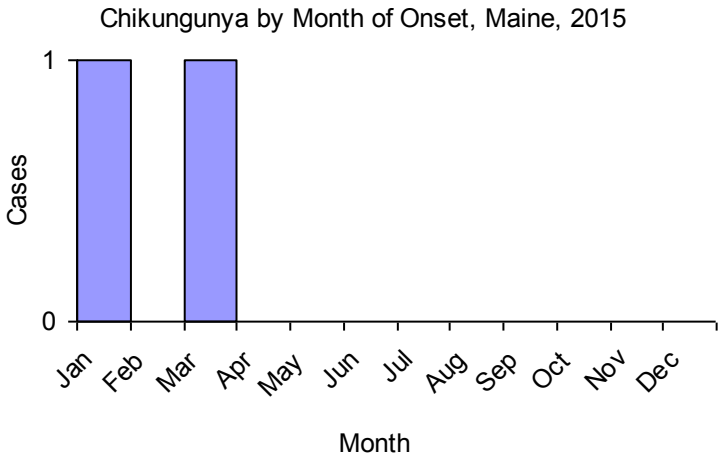
- 2 cases represents a decrease from 6 cases in 2014
- Median age was 50 years
- Cases were 100% male
- Cases had travel history to Anguilla, Jamaica, and St. Martin (cases may have travelled to more than one location)

To lower the chances of contracting a mosquito-borne disease, measures should be taken to prevent mosquito bites both at home and while traveling:

- Use an EPA-approved repellent including during the day (some of the mosquitoes are day biters). Always follow the instructions on the product's label when using repellents or other pesticides.
- Wear long sleeved shirts and long pants when possible or when mosquitoes are abundant.
- Protect babies with mosquito netting.
- Stay indoors when mosquitoes are especially abundant.







Chlamydia

2015 Case Total	**3,851**
Maine Rate	**289.7 per 100,000**
U.S. rate (2014)	**452.2 per 100,000**

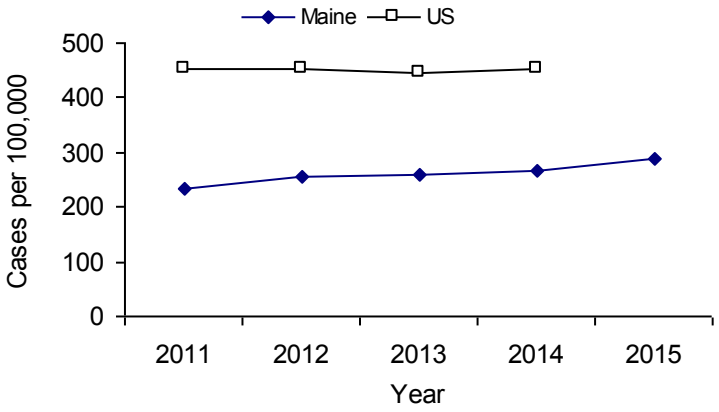
Chlamydia is a sexually transmitted disease (STD) caused by the bacterium *Chlamydia trachomatis*. Chlamydia is known as a "silent" disease, as three quarters (75%) of women and half (50%) of men infected with chlamydia will have no symptoms. Common symptoms for women include vaginal discharge or a burning sensation with urination and for men include penile discharge and burning on urination.

If chlamydia is not treated, the infection may cause serious damage to the reproductive system, including infertility. Chlamydia can be passed to a child during birth. People with chlamydia can more easily contract HIV from someone else or transmit HIV to others if they are infected with both.

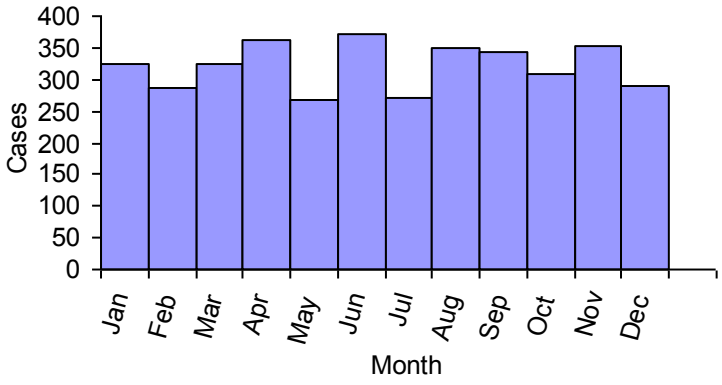
- 3,851 cases represents an increase from 3,531 cases in 2014
- Chlamydia is the most frequently reported STD in Maine
- Cases were 69% female and 31% male

Chlamydia can be prevented by the use of latex or polyurethane condoms and dental dams during anal, vaginal, and oral sex. Efforts to prevent the spread of chlamydia include prioritized follow up activities for new diagnoses and state supported testing offered throughout the state. Currently state supported testing is available for un/under-insured men and women at risk for chlamydia at Maine Family Planning offices and at the STD clinic in Portland.

Chlamydia Incidence, Maine and US, 2010-2014



Chlamydia by Month, Maine, 2015



Creutzfeldt-Jakob Disease (CJD)

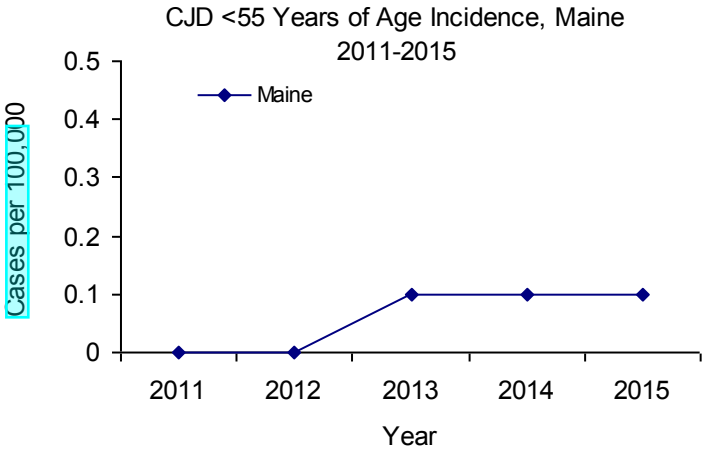
2015 Case Total	**1**
Maine Rate	**0.1 per 100,000**
U.S. rate (2014)	**Not Reportable**

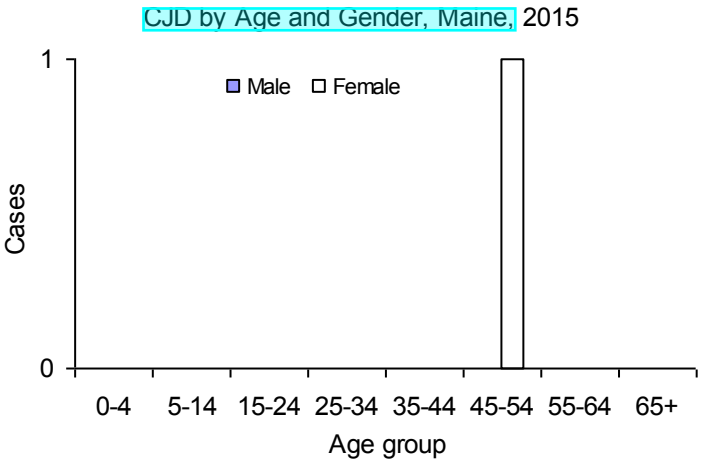
Creutzfeldt-Jakob Disease (CJD) is a human prion disease. It is a rapidly progressive, invariable fatal neurodegenerative disease. Infection with the disease leads to death usually within one year of onset of illness. CJD occurs worldwide.

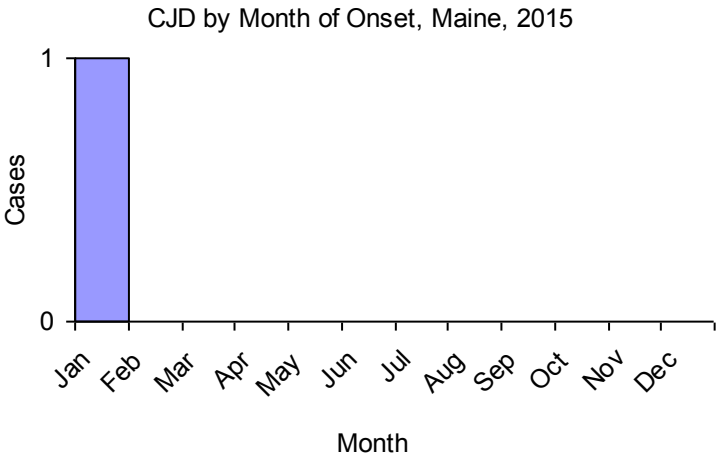
The majority of cases of CJD (about 85%) occur as sporadic disease, a smaller proportion of patient (5-15%) develop CJD because of inherited mutations of the prion protein gene. These inherited forms include Gerstmann-Straussler-Scheinker syndrome and fatal familial insomnia.

CJD in Maine is only reportable in individuals less than 55 years of age.

- 1 case represents no change from 2014







Cryptosporidiosis

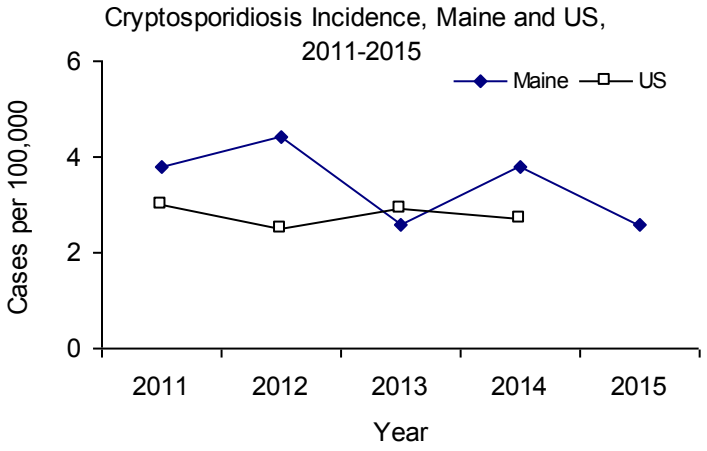
2015 Case Total	**34**
Maine Rate	**2.6 per 100,000**
U.S. rate (2014)	**2.7 per 100,000**

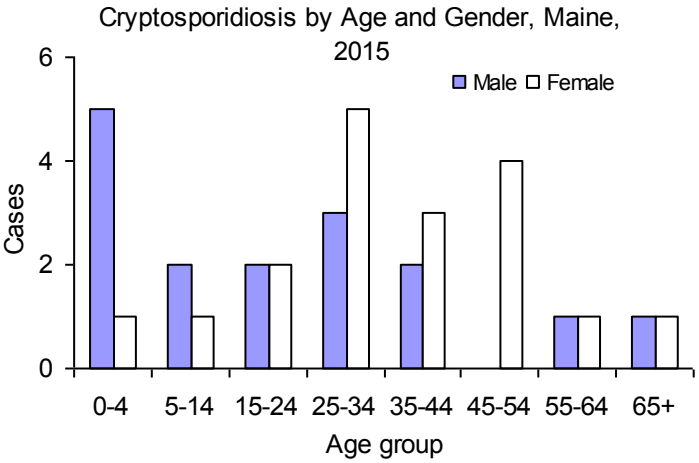
Cryptosporidiosis is an infection most frequently associated with contaminated water or contact with infected animals. The disease is caused by a parasite that lives in the intestines of animals and infected humans. Feces containing the parasite may contaminate the ground or water sources. The parasite may live for long periods of time in the environment due to a protective outer covering. It is resistant to many chlorine-based disinfectants, increasing the risk of transmission in swimming pools and waterparks.

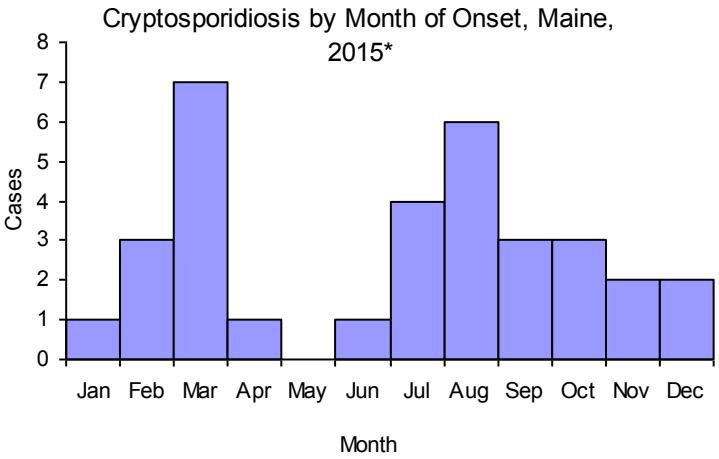
Symptoms include: diarrhea, abdominal cramping, malaise and vomiting.

- 34 cases represent a decrease from 51 cases in 2014
- The 2010-2014 median number of cases per year was 51
- Median age was 30 years
- Age range was 1 year to 83 years
- Cases were 53% female and 47% male
- Highest rates were in Hancock, Kennebec, Piscataquis, and Waldo counties

Preventive measures include consuming pasteurized milk and dairy products, practicing good hand hygiene around farm animals and discouraging persons of all ages from swimming when they have diarrheal illness.







*onset date missing for one case

Cyclosporiasis

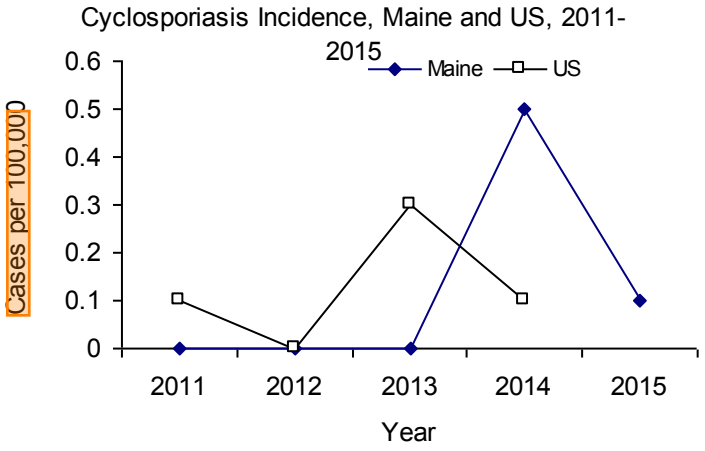
2015 Case Total	**1**
Maine Rate	**0.1 per 100,000**
U.S. rate (2014)	**0.1 per 100,000**

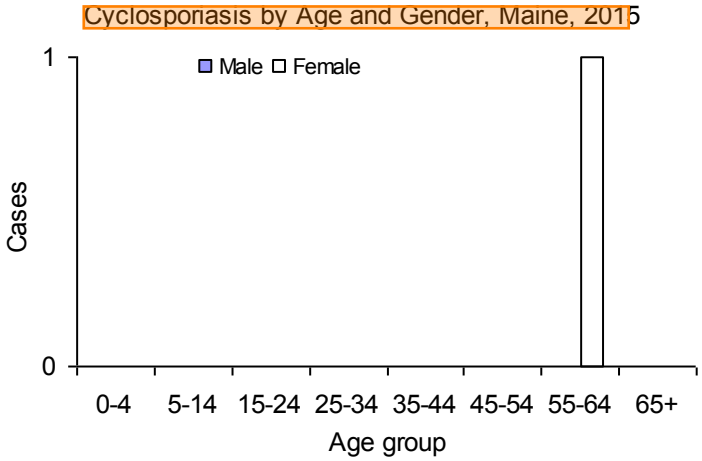
Cyclosporiasis is an intestinal illness caused by the microscopic parasite *Cyclospora cayetanensis*. People can become infected by *Cyclospora* by consuming food or water contaminated with the parasite. People living or traveling in countries where cyclosporiasis is endemic may be at increased risk for infection.

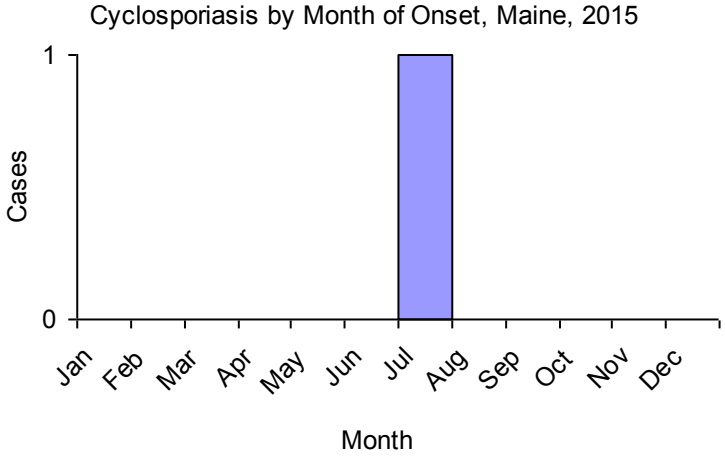
- 1 case represents a decrease from 7 cases in 2014

Individuals can prevent this illness by avoiding food or water that may have been contaminated with feces. Treatment with chlorine or iodine is unlikely to kill *Cyclospora* oocysts.

Cyclosporiasis officially became notifiable in September 2015. Cases prior to September were investigated as an unusual illness so may not represent complete data.



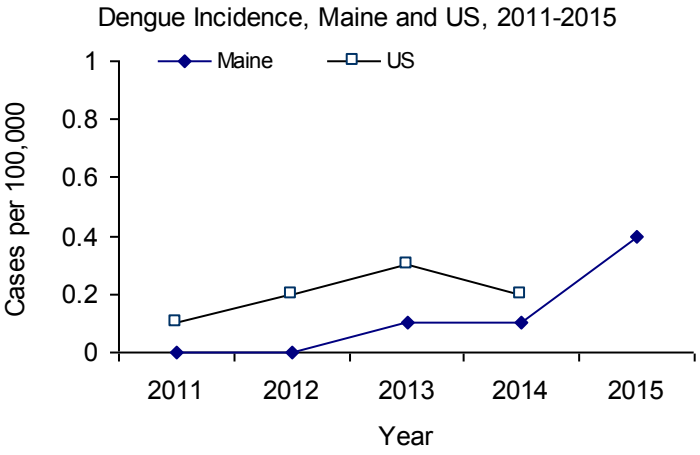




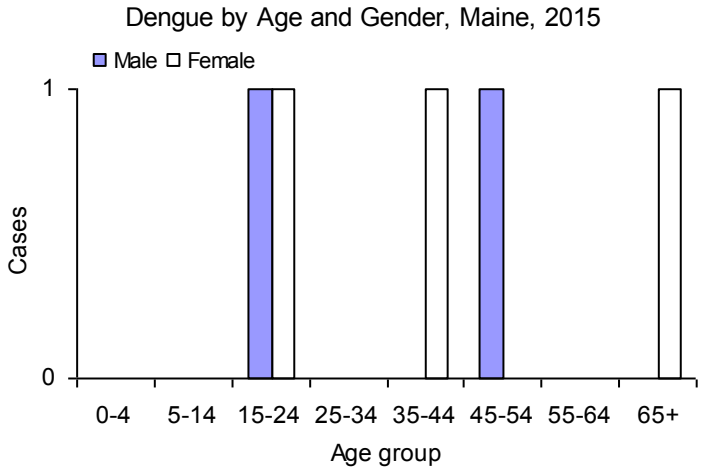
Dengue

2015 Case Total	**5**
Maine Rate	**0.4 per 100,000**
U.S. rate (2014)	**0.2 per 100,000**

Dengue fever is an illness caused by a virus that is transmitted by the bite of an infected *Aedes* mosquito. Symptoms of dengue include high fever, severe headache, backache, joint pain, nausea and vomiting, eye pain, a "breaking bone feeling," and rash. Dengue is uncommon in the United States, but local transmission has occurred in Florida, Texas, and Hawaii.

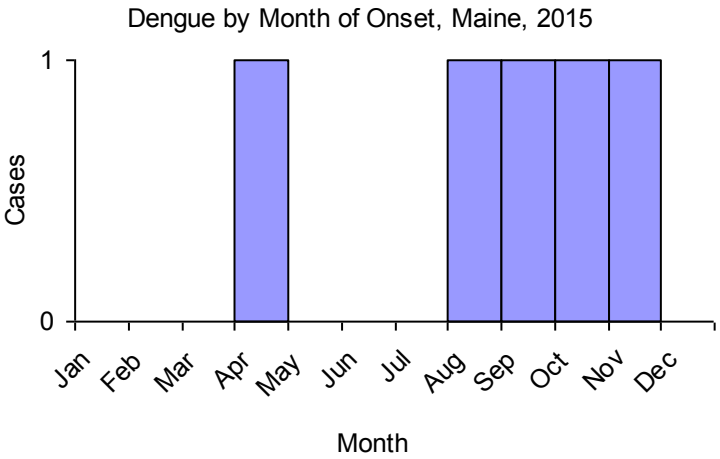


- 5 cases represents an increase from 1 case in 2014
- The 2010-2014 median number of cases per year was 1
- Median age was 44 years
- Age range was 18 to 75 years
- Cases were 60% female and 40% male
- Cases had travel history to Brazil, Costa Rica, Philippines, and Thailand



To lower the chances of contracting a mosquito-borne disease, measures should be taken to prevent mosquito bites both at home and while traveling:

- Use an EPA-approved repellent including during the day (some of the mosquitoes are day biters). Always follow the instructions on the product's label when using repellents or other pesticides.
- Wear long sleeved shirts and long pants when possible or when mosquitoes are abundant.
- Protect babies with mosquito netting.
- Stay indoors when mosquitoes are especially abundant.



Eastern Equine Encephalitis (EEE)

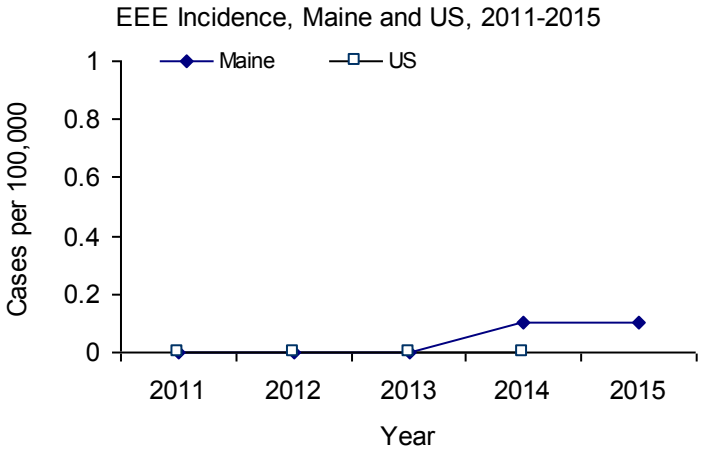
2015 Case Total	**1**
Maine Rate	**0.1 per 100,000**
U.S. rate (2014)	**0.0 per 100,000**

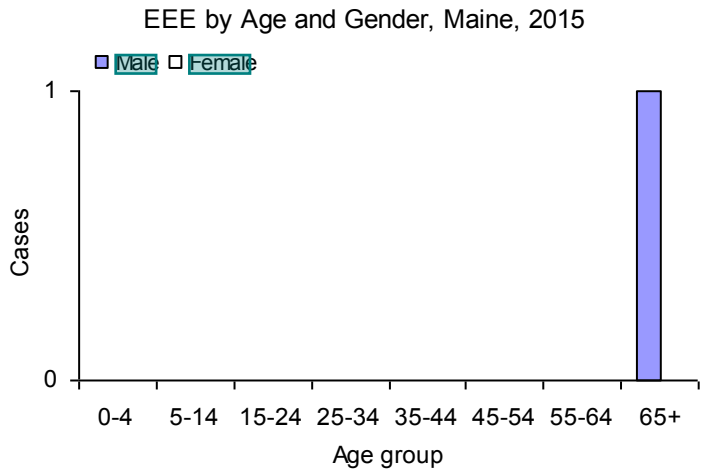
EEE is a viral disease that occurs in the eastern half of the United States. EEE can cause disease in humans, horses, and some birds. Symptoms can range from mild flu-like illness to encephalitis, coma and death. Because of the high mortality rate (33%), EEE is regarded as one of the most serious mosquito-borne illnesses in the United States.

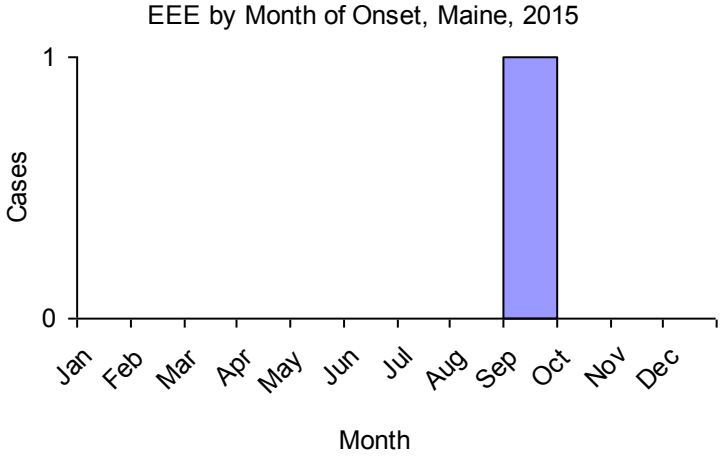
- 1 case represents no change from 2014
- 8 cases were reported in the US in 2014
- 1 mosquito pool tested positive for EEE, a decrease from the 22 pools that tested positive in 2014

To lower the chances of contracting a mosquito-borne disease, measures should be taken to prevent mosquito bites both at home and while traveling:

- Use an EPA-approved repellent including during the day (some of the mosquitoes are day biters). Always follow the instructions on the product's label when using repellents or other pesticides.
- Wear long sleeved shirts and long pants when possible or when mosquitoes are abundant.
- Protect babies with mosquito netting.
- Stay indoors when mosquitoes are especially abundant.







Ehrlichiosis

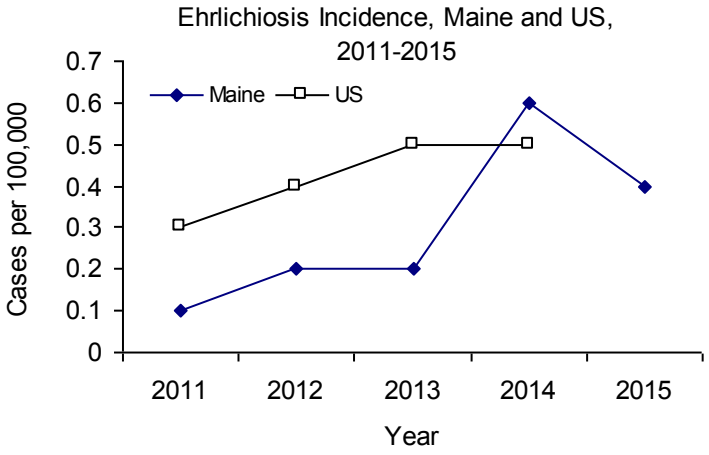
2015 Case Total	**5**
Maine Rate	**0.4 per 100,000**
U.S. rate (2014)	**0.5 per 100,000**

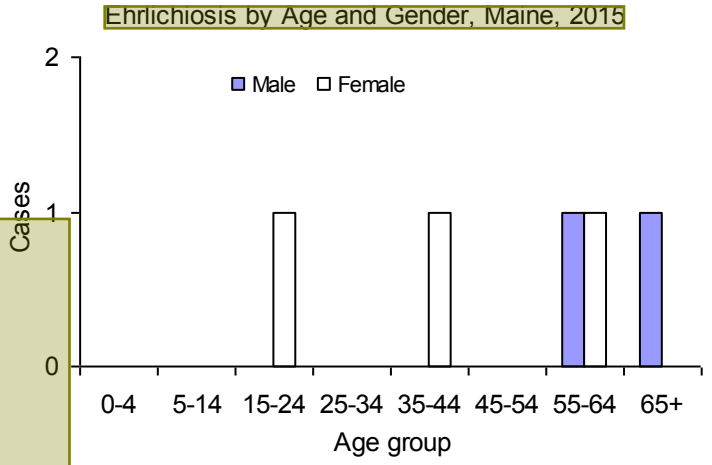
Ehrlichiosis is a bacterial disease transmitted through the bite of an infected lone star tick (*Ambylomma americanum*) which is not common in Maine. Signs and symptoms include fever, headache, nausea, rash, and body aches. Encephalitis or meningitis may occur.

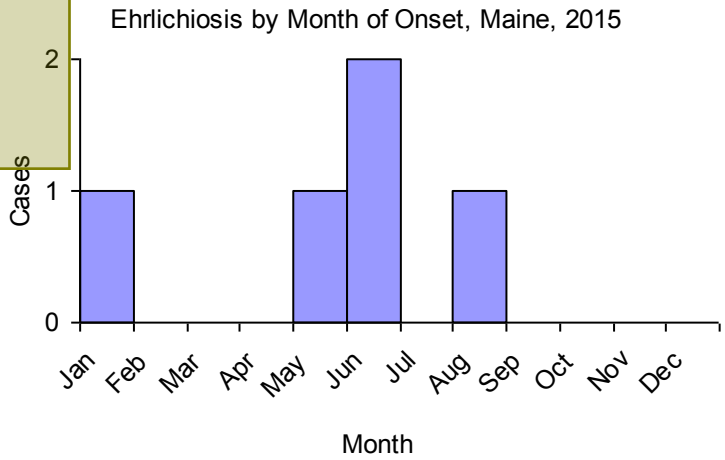
- 5 cases represent a decrease from 8 cases in 2014
- The 2010-2014 median number of cases per year was 3
- Median age was 56 years
- Age range was 16 to 68 years
- Cases were 60% female and 40% male
- All cases were probable

The best way to prevent infection is to take measures to protect against tick bites. Checking for ticks after visiting a tick infested area is an important way to reduce the risk of contracting ehrlichiosis. Using EPA approved repellents such as DEET on skin or permethrin on clothing is a good way to protect against tick bites. Always follow the instructions on the label when applying repellent products. If an engorged tick is found, it should be safely removed and saved for identification. Monitor for signs and symptoms for 30 days after the tick bite.

For more information about submitting a tick for identification only (not testing) visit http://extension.umaine.edu/ipm/tickid/







Giardiasis

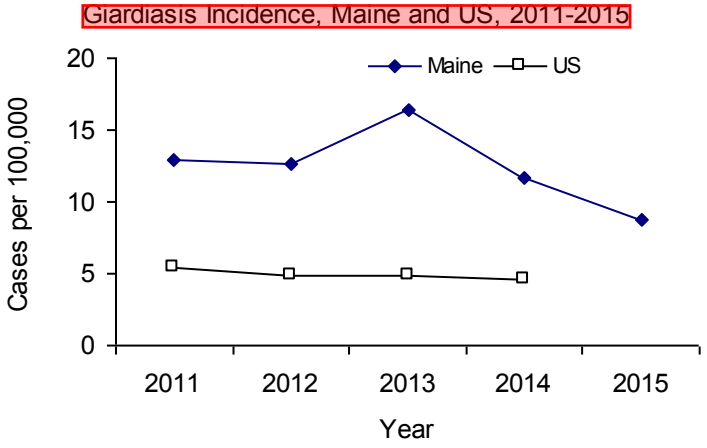
2015 Case Total	**116**
Maine Rate	**8.7 per 100,000**
U.S. rate (2014)	**4.6 per 100,000**

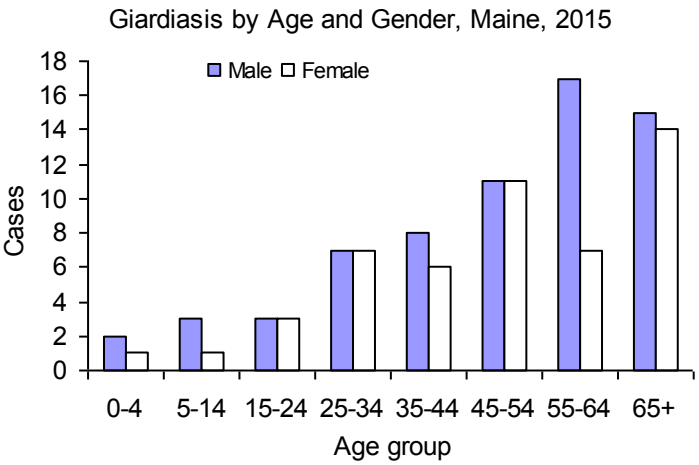
Giardiasis is sometimes known as "beaver fever" because beavers (as well as dogs, cats, horses and cows) are major reservoirs for the parasite (*Giardia lamblia*) that causes the infection. The parasite lives in the intestines of infected humans and animals and when expelled through the feces can contaminate water and surfaces. If hikers or others drink water without proper treatment they may become infected. Young children in child care or pool settings who are prone to sucking on toys or swallowing water are also at higher risk.

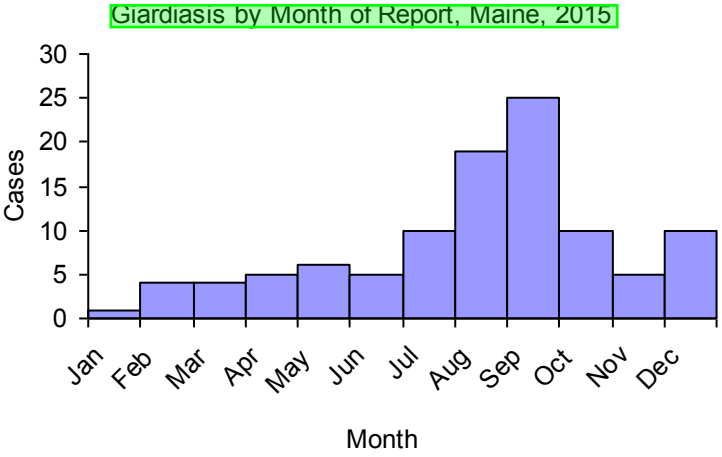
In 2013, an evaluation of giardiasis surveillance revealed the need to collect symptom information to correctly count cases. Starting in June of 2014 only symptomatic cases were counted. Case counts decreased as asymptomatic cases were not counted.

- 116 cases represents a decrease from 154 cases in 2014
- The 2010-2014 median number of cases per year was 171
- Median age was 52 years
- Age range was 3 to 96 years
- Cases were 43% female and 57% male
- Highest rates were in Knox, Piscataquis, and Somerset counties
- Greatest number of cases occurred during the late summer and fall months

Individuals can prevent this illness by not drinking from untreated water sources, such as streams and lakes. Increased attention to proper sanitation and hygiene in public water recreational facilities can help to reduce the transmission of *Giardia*.







Gonorrhea

2015 Case Total	**422**
Maine Rate	**31.8 per 100,000**
U.S. rate (2014)	**109.8 per 100,000**

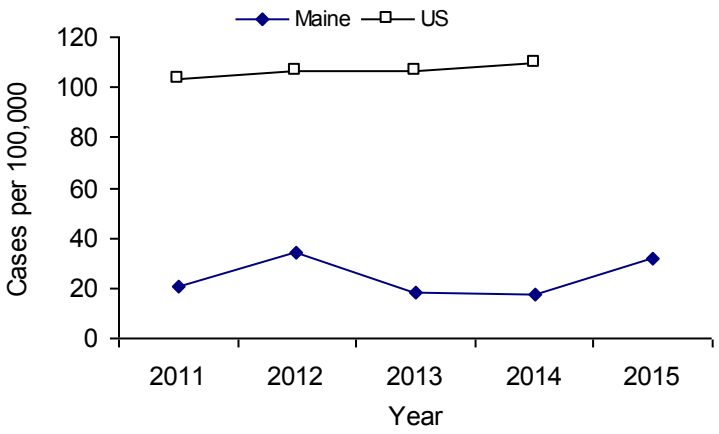
Gonorrhea is a sexually transmitted disease (STD) caused by the bacterium *Neisseria gonorrhoeae* that grows and multiplies in warm, moist areas (mucous membranes). Gonorrhea can be spread through contact with the vagina, penis, mouth or anus. Gonorrhea can also spread from a mother to her baby during childbirth. Gonorrhea does not always cause symptoms. Men may feel a burning sensation while urinating, or have discharge from their penis. Women might feel pain with urination, or notice discharge from their vagina.

Gonorrhea is dangerous if untreated. In women, gonorrhea is a common cause of pelvic inflammatory disease, which can lead to chronic pain and infertility. In men, gonorrhea can cause epididymitis, which causes painful testicles and infertility. People infected with HIV are more likely to contract gonorrhea and to transmit HIV if they are also infected with gonorrhea.

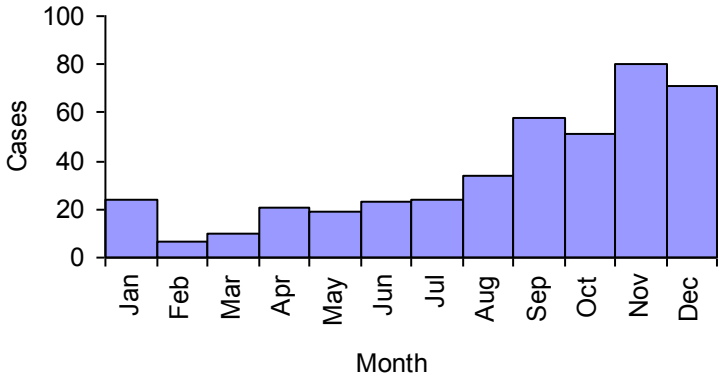
- 422 cases represents an increase from 237 cases in 2014
- Cases were 34% female and 66% male

Gonorrhea can be prevented by using latex or polyurethane condoms and dental dams during anal, vaginal, and oral sex. Prevention efforts include treatment verification and case investigation activities, such as partner follow-up for all new infections. State supported testing for un/under insured men and women at risk is also available at Maine Family Planning offices throughout the state and at the Portland STD Clinic.

Gonorrhea Incidence, Maine and US, 2010-2014



Gonorrhea by Month, Maine, 2015



Group A Streptococcal Disease, invasive

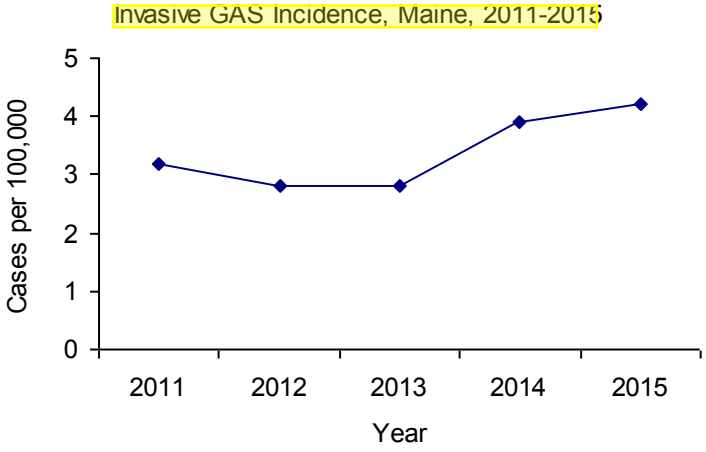
2015 Case Total	**56**
Maine Rate	**4.2 per 100,000**
U.S. rate (2014)	**Not reportable**

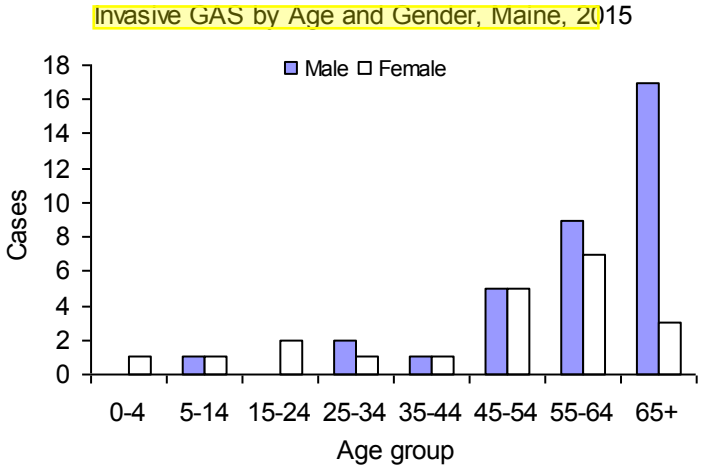
Group A *Streptococcus* (GAS) is a bacterium (*Streptococcus pyogenes*) often found in the throat and on the skin that can cause either no symptoms (colonization) or mild symptoms such as pharyngitis (strep throat), cellulitis (soft tissue infection) or impetigo (skin dermatitis). When the bacteria enters deeper tissues and the blood stream, GAS can cause severe or life-threatening conditions.

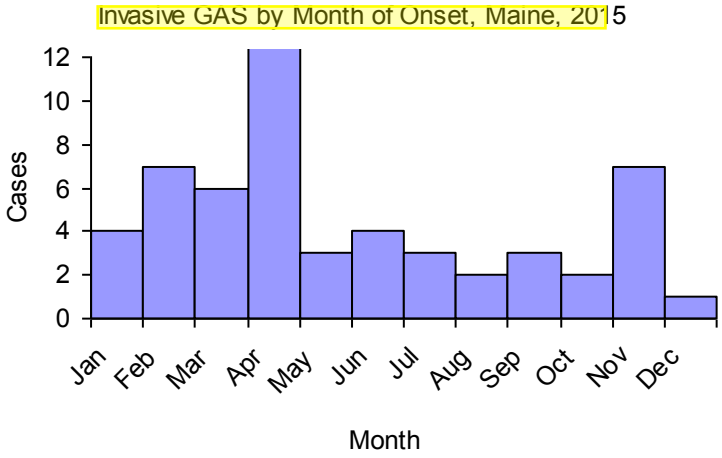
GAS may lead to Streptococcal Toxic Shock Syndrome (STSS), a rapid drop in blood pressure that causes organ failure. Necrotizing fasciitis, a condition that progressively destroys skin, fat, and muscles can be caused by GAS.

- 56 cases represents an increase from 53 cases in 2014
- The 2010-2014 median number of cases per year was 43
- Median age was 59 years
- Age range was 4 years to 100 years
- Cases were 37.5% female and 62.5% male
- 13 (23%) cases were also diagnosed with STSS
- 5 cases died

Control and prevention strategies may include targeted chemoprophylaxis for high risk household contacts of confirmed cases, such as those who are 65 and older or those who have other specified risk factors (HIV infection, diabetes, malignancy, injecting drug use, or cardiac diseases).







Group B Streptococcal Disease, invasive*

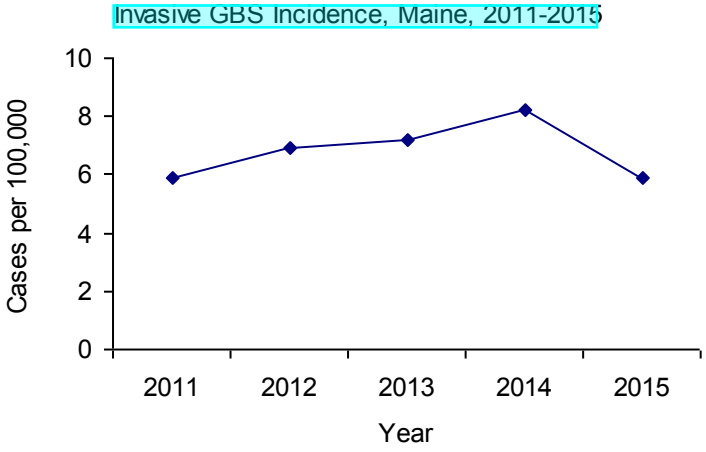
2015 Case Total	**79**
Maine Rate	**5.9 per 100,000**
U.S. rate (2014)	**Not reportable**

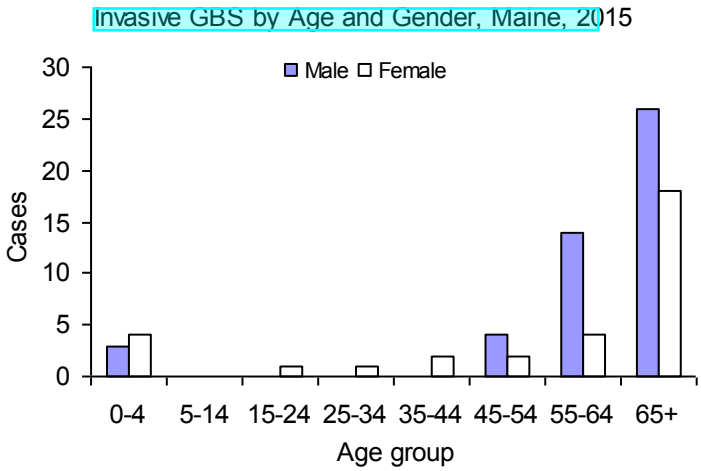
Group B *Streptococcus* (GBS) is a bacterium (*Streptococcus agalactae*) that causes illness in people of all ages. GBS disease is the most common cause of severe infections in newborns that can be deadly. GBS can cause sepsis, pneumonia, meningitis in infants; and sepsis, pneumonia, skin and soft tissue infections, and bone and joint infections in adults.

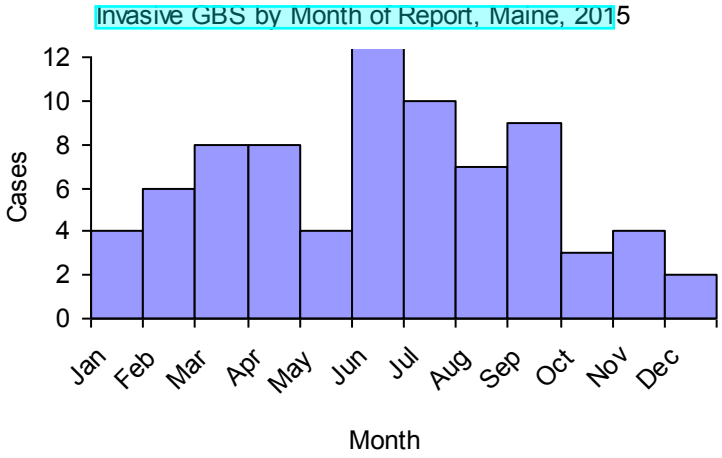
- 79 cases represents a decrease from 109 cases in 2014
- The 2010-2014 median number of cases per year was 92
- Median age was 68 years
- Age range was 2 days to 97 years
- Cases were 40% female and 60% male

Pregnant women should be tested for group B strep bacteria when they are 35 to 37 weeks pregnant. If the woman tests positive antibiotics can be given during labor to prevent transmission to the newborn.

*GBS is no longer reportable as of September 8, 2015 so this data may not represent a complete year.







Haemophilus influenzae, invasive

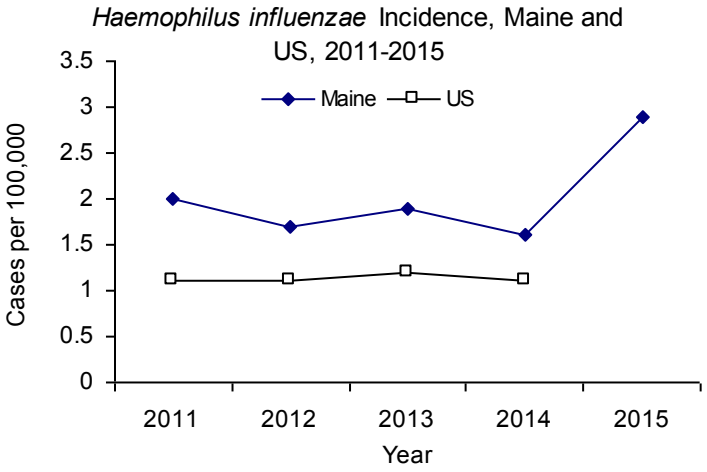
2015 Case Total	**39**
Maine Rate	**2.9 per 100,000**
U.S. rate (2014)	**1.1 per 100,000**

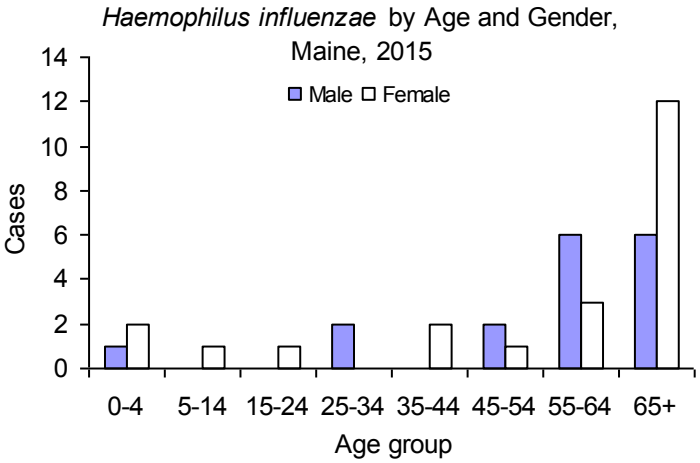
Haemophilus influenzae (H. flu) disease is caused by the *Haemophilus influenzae* bacterium. There are six identifiable types of H. flu and other non-identifiable types (called nontypeables). A specific type called *H. influenzae* serotype b (Hib) was once the most common cause of bacterial meningitis in children. Due to widespread use of Hib vaccine, few cases are reported in children less than 5 years old each year.

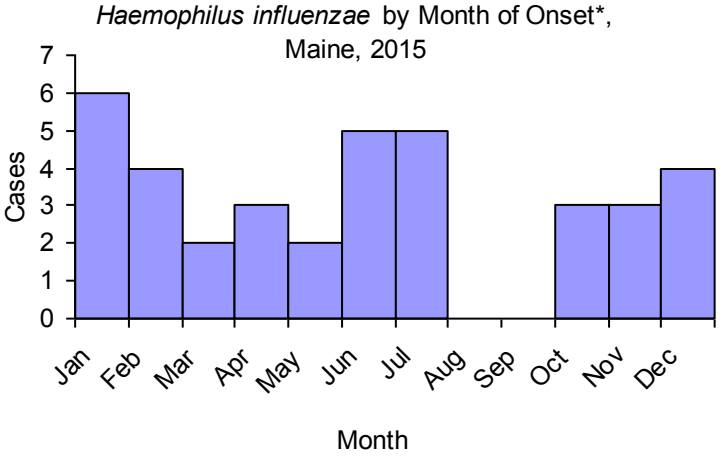
The bacteria are spread from person to person through airborne droplets when an infected person coughs or sneezes. *H. influenzae* can cause severe illnesses such as meningitis, bacteremia, pneumonia, and septic arthritis.

- 39 cases represent an increase from 21 cases in 2014
- The 2010-2014 median number of cases per year was 23
- Median age was 62 years
- Age range was 2 months to 93 years
- Cases were 56% female and 44% male
- 1 case of Hib was reported in a child <5 years of age
- Of the samples typed there was 1 a, 1 b, 5 d, 3 e, 5 f, and 20 nontypeable

Haemophilus influenzae serotype b (Hib) may be prevented in children through vaccination. Vaccine is recommended for all children younger than 5 years of age and is usually given to infants starting at 2 months of age. For vaccine schedules please see: https://www.cdc.gov/vaccines/schedules/







*onset date missing for two cases

Hemolytic Uremic Syndrome (HUS)

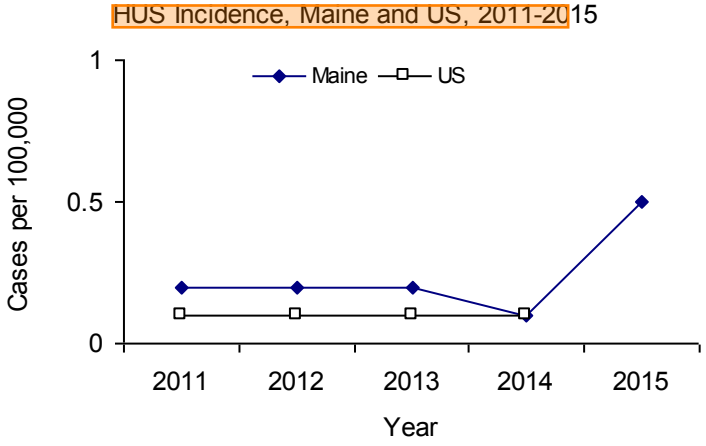
2015 Case Total	**7**
Maine Rate	**0.5 per 100,000**
U.S. rate (2014)	**0.1 per 100,000**

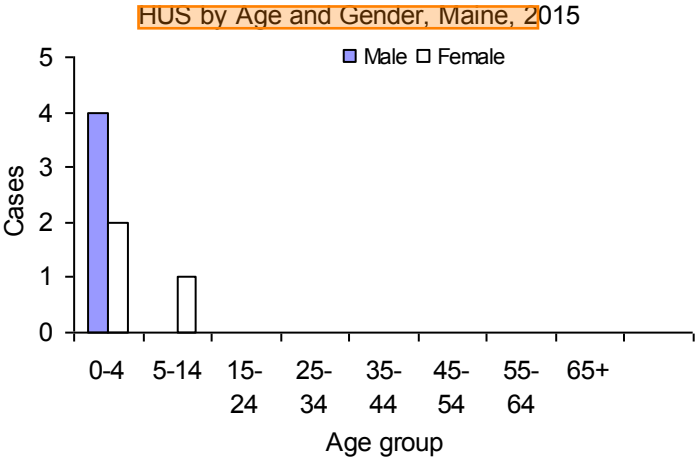
Escherichia coli (E. coli) are common bacteria that live in the digestive tract, some cause serious infection (by producing shiga toxins) and some do not. Transmission of shiga toxin-producing *E. coli* (STEC) is through consumption of food or water contaminated with fecal matter or through contact with farm animals. Commonly implicated food items include undercooked meats, raw vegetables, and unpasteurized products.

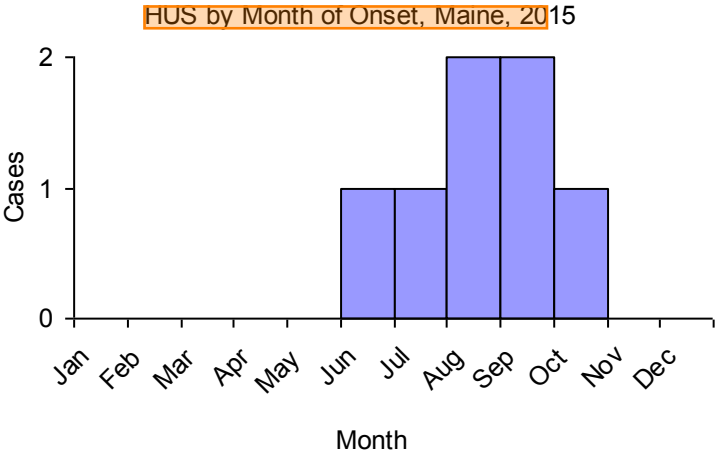
STEC may cause severe illness. Symptoms include: abdominal cramping, bloody diarrhea and a rare complication, hemolytic uremic syndrome (HUS), which can damage red blood cells and the kidneys. Most cases of HUS are preceded by an STEC infection. HIS historically affects children.

- 7 cases represent an increase from 1 case in 2014
- The 2010-2014 median number of cases per year was 2
- Median age was 2 years
- Age range was 10 months to 14 years
- Cases were 43% female and 57% male

STEC prevention measures include: handwashing, particularly before and after cooking and after contact with animals; thoroughly cooking meats; washing fresh fruits and vegetables; avoiding unpasteurized dairy products and juices; avoiding consumption of untreated water; and avoiding cross-contamination of food items.







Hepatitis A

2015 Case Total	**8**
Maine Rate	**0.6 per 100,000**
U.S. rate (2014)	**0.4 per 100,000**

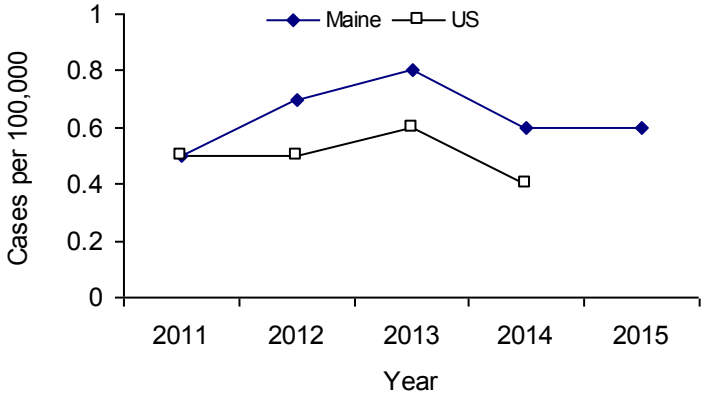
Hepatitis A is a liver disease caused by the hepatitis A virus. The virus is spread from person to person by fecal-oral transmission that involves putting something in the mouth (such as food, hands, or water) that is contaminated with hepatitis A virus. Poor handwashing by persons with hepatitis A increases the risk of transmission. The virus spreads more easily in areas where sanitary conditions and personal hygiene practices are poor. Most infections result from exposure during international travel, or contact with a household member or a sexual partner who has hepatitis A.

Onset of symptoms is usually abrupt with fever, malaise, anorexia, nausea and abdominal discomfort followed by jaundice a few days later. Children are often asymptomatic. Infection is self-limiting. Upon recovery a person is immune to hepatitis A.

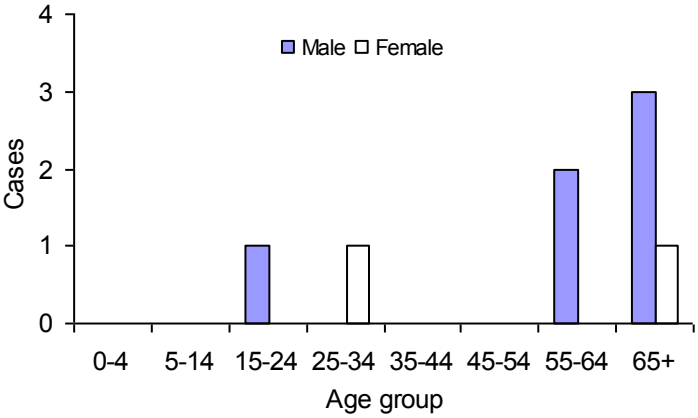
- 8 cases represent no change from the 8 cases in 2014
- The 2010-2014 median number of cases per year was 8
- Median age was 64 years
- Age range was 17 years to 88 years
- Cases were 25% female and 75% male

Washing hands after using the bathroom, changing a diaper, or before preparing or eating food can help prevent infection. Hepatitis A can also be prevented through vaccination. The two dose vaccine series is recommended for all children at 12 months of age and for persons who are more likely to be exposed to hepatitis A or become seriously ill if they get hepatitis A. The vaccine is also recommended for some travelers and for close contacts of newly arriving international adoptees.

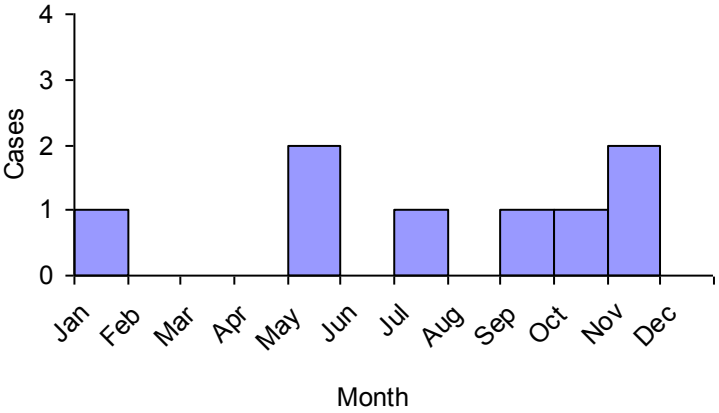
Hepatitis A Incidence, Maine and US, 2011-2015



Hepatitis A by Age and Gender, Maine, 2015



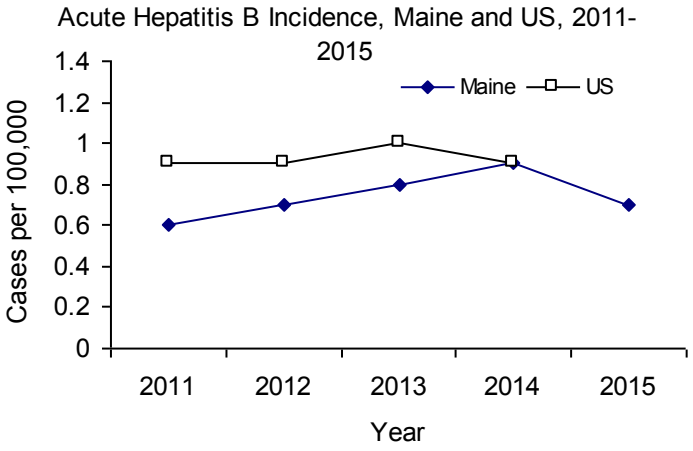
Hepatitis A by Month of Onset, Maine, 2015



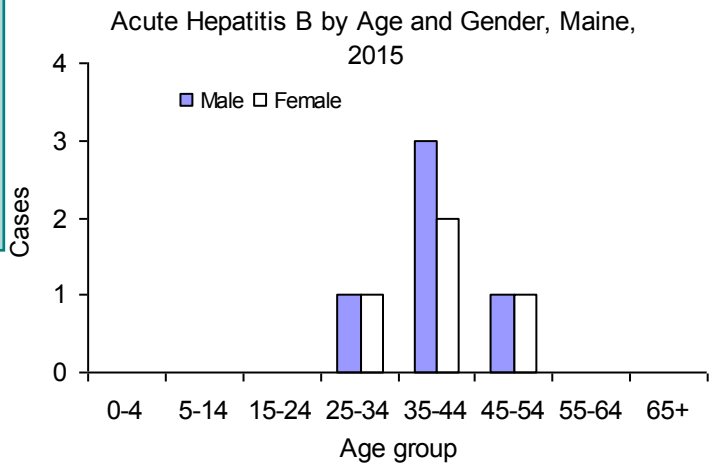
Hepatitis B, acute

2015 Case Total	**9**
Maine Rate	**0.7 per 100,000**
U.S. rate (2013)	**0.9 per 100,000**

Hepatitis B is a liver disease caused by the hepatitis B virus. Acute hepatitis B infection occurs within the first six months after someone is exposed to the virus. In some cases, acute infection can lead to chronic infection. The younger the age at time of infection, the greater the likelihood of progressing to chronic hepatitis B infection.

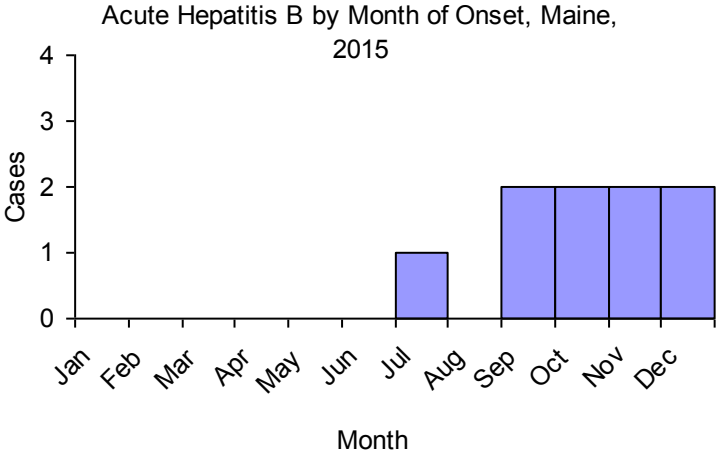


Hepatitis B virus can be transmitted through exposure to blood or body fluids from an infected person (needle sticks and other sharps exposures, sharing hypodermic syringes for drug injection), through sexual contact with an infected person, or from an infected mother to her child during childbirth. Sexual transmission is common among men who have sex with men.



Symptoms include anorexia, abdominal discomfort, nausea and vomiting followed by jaundice. Many young children and immunosuppressed adults do not develop symptoms.

- 9 cases represent a decrease from 12 cases in 2014
- The 2010-2014 median number of cases per year was 11
- Median age was 40 years
- Age range was 31 to 53 years
- Cases were 44% female and 56% male



Hepatitis B can be prevented by vaccination, not sharing needles and other drug injecting equipment, using sterile needles and syringes, and using condoms. Hepatitis B can also be prevented by not sharing equipment designated for individual use for blood glucose monitoring and insulin administration.

Hepatitis B, chronic

2015 Case Total	**107**
Maine Rate	**8.0 per 100,000**
U.S. rate (2014)	**Not available**

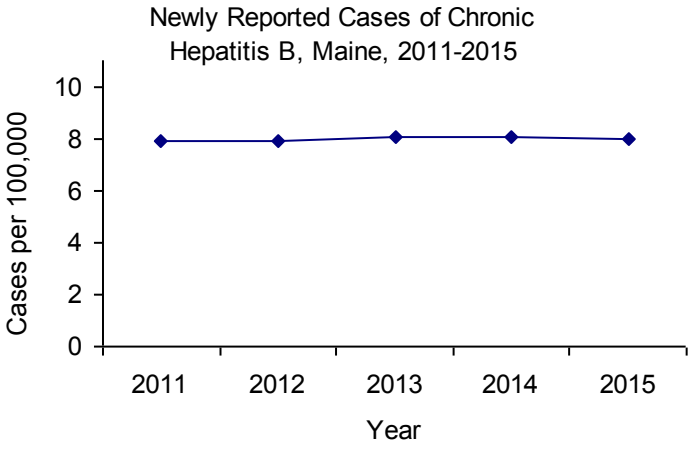
Hepatitis B is a liver disease caused by the hepatitis B virus. Chronic hepatitis B virus infection occurs when a person infected with acute hepatitis B does not clear the virus within the first 6 months of infection.

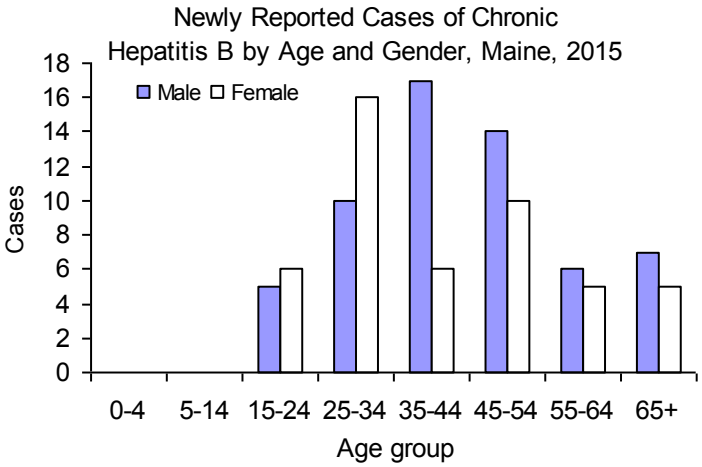
Chronic hepatitis B is a serious disease that can result in long-term health problems, such as cirrhosis (scarring) of the liver, liver cancer, liver failure, and even death. Many people do not have symptoms and may not know they are infected, but they can still spread the disease to others.

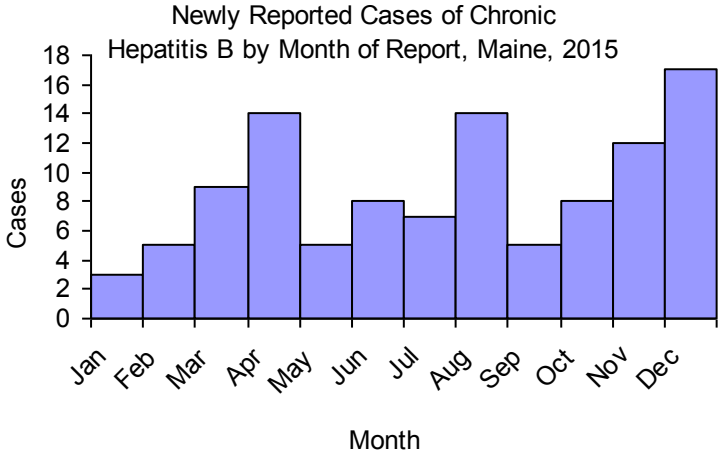
Hepatitis B virus can be transmitted through exposure to blood and or body fluids from an infected person (needle sticks and other sharps exposures, sharing drug injection equipment), through sexual contact with an infected person, or from an infected mother to her child during childbirth. Sexual transmission also occurs among men who have sex with men.

- 107 cases represent a decrease from 108 cases in 2014
- Median age was 42 years
- Age range was 17 to 81 years
- Cases were 45% female and 55% male

Hepatitis B can be prevented through vaccination of susceptible household and sexual contacts of identified cases. Transmission can be prevented by not sharing needles or other drug injecting equipment, using sterile needles and syringes, and using condoms. Hepatitis B can also be prevented by not sharing equipment designated for individual use for blood glucose monitoring and insulin administration.



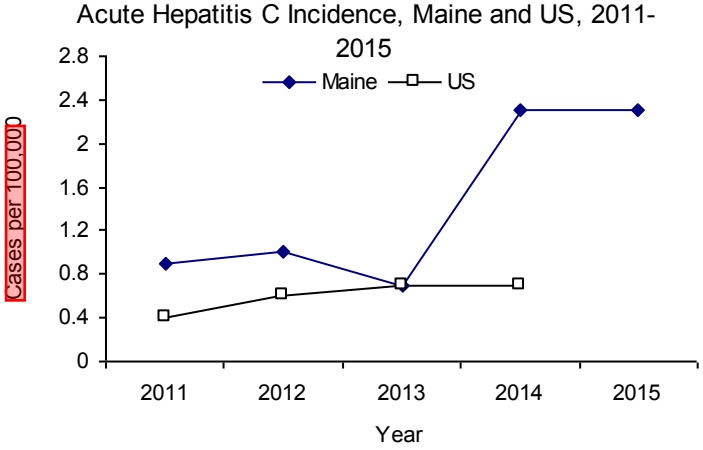




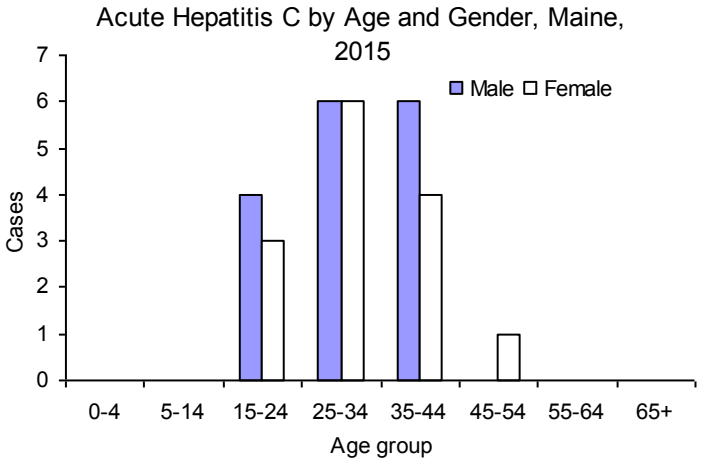
Hepatitis C, acute

2015 Case Total	**30**
Maine Rate	**2.3 per 100,000**
U.S. rate (2014)	**0.7 per 100,000**

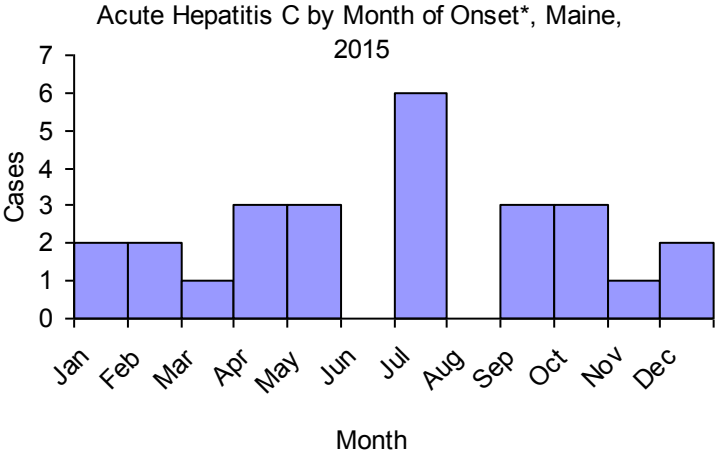
Hepatitis C is a liver disease caused by the hepatitis C virus. Acute hepatitis C infection occurs within the first six months after someone is exposed to the virus. Hepatitis C is spread when blood from a person infected with hepatitis C enters the body of someone who is not infected. Many people become infected by sharing needles or other injection drug equipment.



Persons with acute or newly acquired hepatitis C infection are usually asymptomatic or have mild symptoms. Approximately 20–30% of persons with acute infection experience fatigue, abdominal pain, poor appetite, and/or jaundice. The average time from exposure to symptom onset is 4–12 weeks (range: 2–24 weeks). Other symptoms of acute infection include: fever, dark urine, clay-colored stool, nausea, vomiting, and joint pain.



- 30 cases represents a decrease from 31 cases in 2014
- The 2010-2014 median number of cases per year was 12
- Median age was 30 years
- Age range was 21 to 50 years
- Cases were 47% female and 53% male.



To prevent acute hepatitis C, do not share needles or equipment used to inject drugs. Do not share personal hygiene items or sharps, including equipment for blood glucose monitoring and insulin administration. Use licensed tattooists and body piercers. Use condoms to reduce the already low risk of sexual transmission.

*onset date missing for four cases

Hepatitis C, chronic

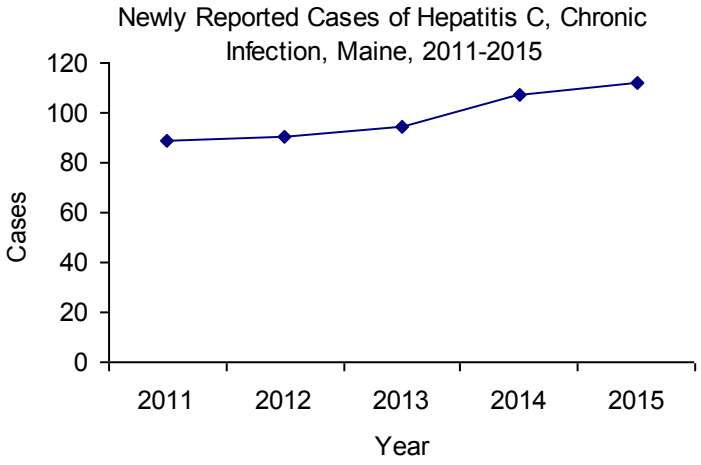
2015 Case Total	**1488**
Maine Rate	**111.9 per 100,000**
U.S. rate (2014)	**Not available**

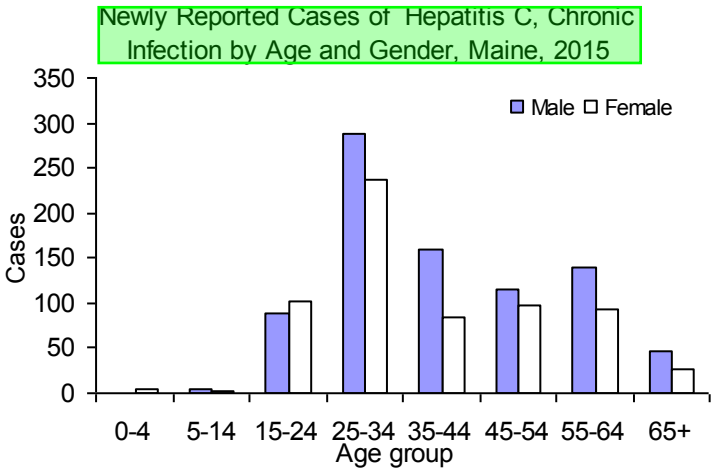
Hepatitis C is a liver disease caused by the hepatitis C virus. Past or present hepatitis C infection is a long-term illness that occurs when hepatitis C virus remains in a person's body for more than 6 months. Over time it can lead to serious liver disease. Hepatitis C is spread when blood from a person infected with hepatitis C enters the body of someone who is not infected. Many people become infected by sharing needles or other injection drug equipment.

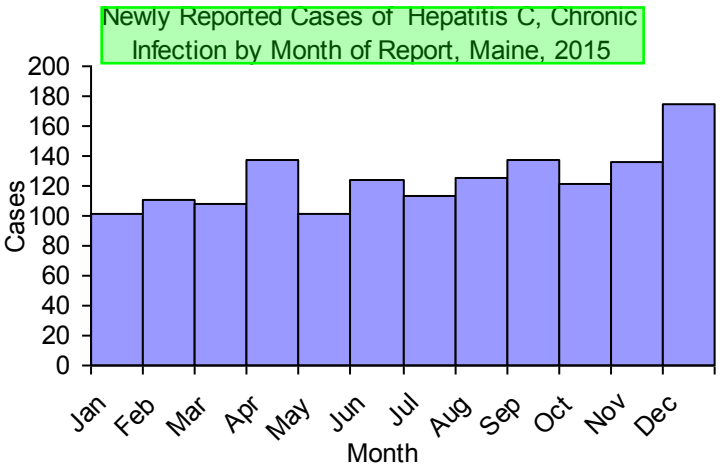
Most people with hepatitis C infection do not have any symptoms. In many cases, symptoms only appear when liver problems develop. Hepatitis C is often detected during routine blood tests to measure liver function and liver enzyme levels.

- 1,488 cases represents an increase from 1,425 cases in 2014
- Median age was 35 years
- Age range was 1 to 83 years
- Cases were 43% female and 57% male

People with past or present hepatitis C infection should be monitored regularly by an experienced healthcare provider. They should avoid alcohol and check with a health professional before taking any prescription pills, supplements, or over-the-counter medications, as these can potentially damage the liver. Vaccination against hepatitis A and hepatitis B is also recommended.







HIV*

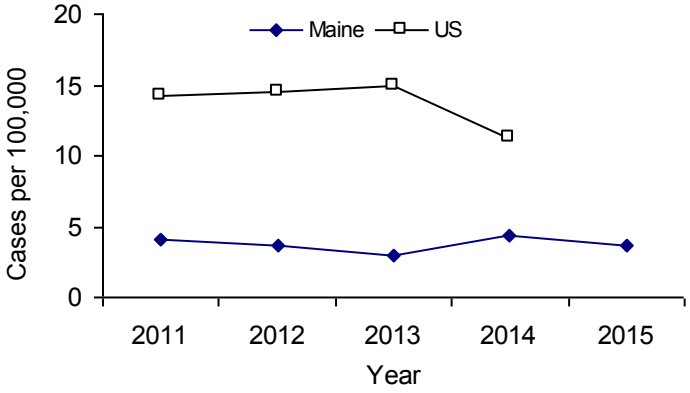
2015 Case Total	**48**
Maine Rate	**3.6 per 100,000**
U.S. rate (2014)	**11.2 per 100,000**

Human immunodeficiency virus (HIV) is a virus that is responsible for HIV disease and acquired immunodeficiency syndrome (AIDS). AIDS typically presents as the late clinical stage of HIV infection. HIV is transmitted from person to person through unprotected penile-vaginal or penile–anal intercourse with an infected person; the use of HIV contaminated needles and syringes; from infected mother to infant during pregnancy, delivery, or breastfeeding; and transfusion of infected blood or its components.

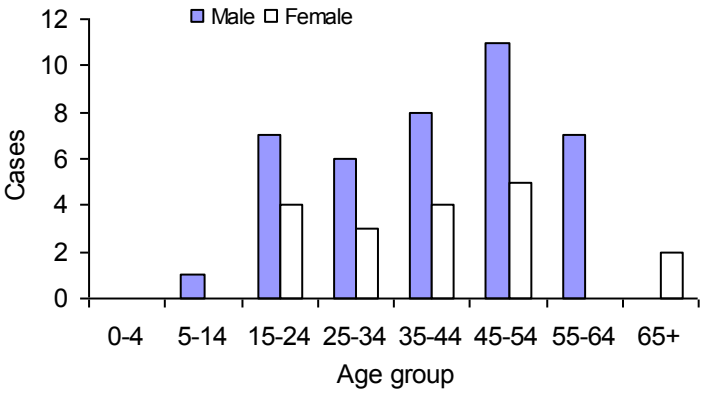
- 48 cases represents a decrease from 58 cases in 2014
- The 2010-2014 median number of cases per year was 54
- Age range was 9 to 6-70 years
- Majority of cases were male (79%)
- 54% of cases reported a risk factor of males who have sex with other males

HIV transmission can be prevented by the use of latex or polyurethane condoms during anal and vaginal sex. It is equally important to always use clean needles and injection equipment when injecting any substance. HIV testing, counseling, and referral services are offered by various agencies and programs dedicated to HIV prevention and treatment in Maine.

Newly Identified HIV Diagnoses, Maine and US, 2011-2015



Newly Identified HIV Diagnoses by Age and Sex, Maine, 2015



Reported Transmission Risk Factors Among Persons Diagnosed with HIV, 2015

Mode of Transmission	New Diagnoses	% of Cases
Men who have sex with men (MSM)	26	54%
Injection drug users (IDU)	5	10%
MSM and IDU	0	0%
Heterosexual contact with at-risk partners	0	0%
Heterosexual, no at-risk partners disclosed	9	19%
Undetermined	8	17%
Received contaminated blood products	0	0%
Child born to mother with HIV	0	3%

*Includes all newly identified HIV infections, including those simultaneously diagnosed as new AIDS cases.

Legionellosis

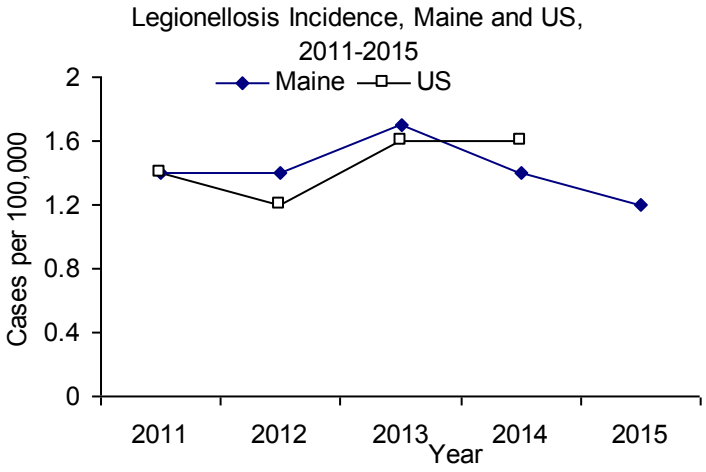
2015 Case Total	**16**
Maine Rate	**1.2 per 100,000**
U.S. rate (2014)	**1.6 per 100,000**

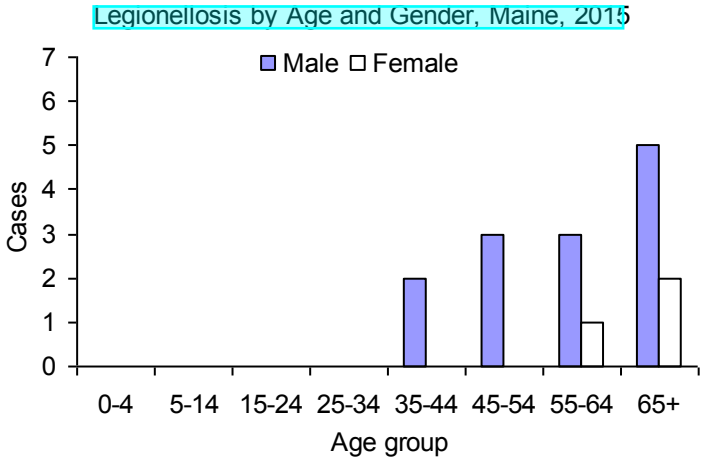
Legionellosis (or Legionnaire's disease) is a serious and sometimes fatal form of pneumonia. *Legionella* bacteria are widespread in natural, industrial and recreational water sources. The bacteria grow best in warm, stagnant water. They can be found in creeks and ponds, hot and cold water taps, hot water tanks, water cooling towers, and condensers of large air-conditioning systems. People get legionellosis when they breathe in a mist or vapor that is contaminated with the bacteria. Persons at high risk of getting legionellosis include those who are middle aged or older, smoke, have chronic lung disease, or weakened immune systems due to cancer, kidney failure, diabetes, or HIV infection.

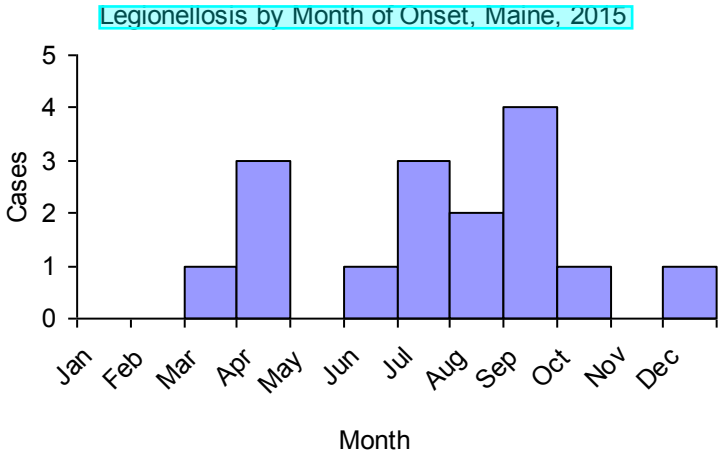
Symptoms include: high fever, chills, muscle aches, headaches, cough, and pneumonia. Legionellosis is treatable with antibiotics.

- 16 cases represent a decrease from 19 cases in 2014
- The 2010-2014 median number of cases per year was 18
- Median age was 63 years
- Age range was 36 to 85 years
- Cases were 19% female and 81% male

Prevention depends on good maintenance of possible water sources of infection (water tanks, water systems, fountains, etc.). This includes regular cleaning, disinfecting, and applying other physical (temperature) or chemical measures to minimize growth. Applying such controls at hospitals, industrial sites, hotels, and recreation centers will reduce the risk of water contamination.







Listeriosis

2015 Case Total	**7**
Maine Rate	**0.5 per 100,000**
U.S. rate (2014)	**0.2 per 100,000**

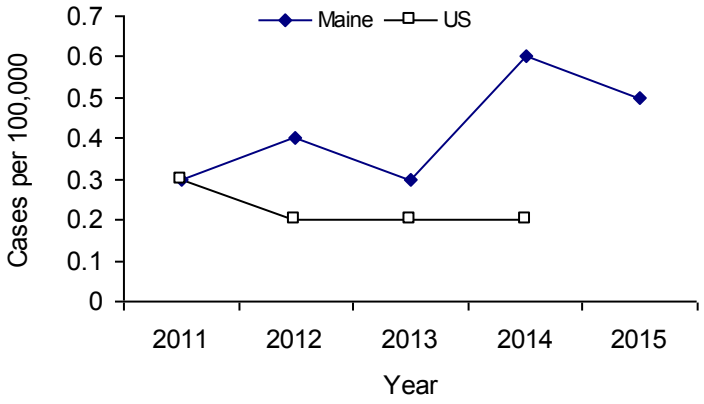
Listeriosis is a bacterial illness, caused by *Listeria monocytogenes*. Infection may cause sepsis and meningitis. Listeriosis is frequently linked to ready-to-eat meats (such as paté and refrigerated smoked seafood), deli meats, soft cheeses and raw milk. Pregnant women are at highest risk for severe outcomes as an infection acquired during pregnancy can be transmitted to the fetus. Also at risk are the elderly and individuals with significant health conditions like cancer, diabetes, liver disease, immune system problems, or multiple medical conditions.

Symptoms include: fever, headache, nausea, fatigue and disorientation. Listeriosis may cause spontaneous abortion.

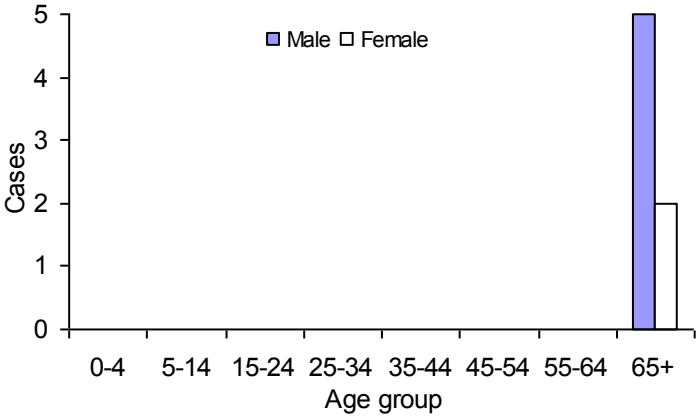
- 7 cases represent a decrease from 8 cases in 2014
- The 2010-2014 median number of cases per year was 4
- Median age was 77 years
- Age range was 67 to 95 years
- 7 cases were hospitalized

Listeria bacteria are able to multiply in contaminated foods even during refrigeration. Poultry or meat (including hot dogs) should not be consumed without following proper cooking instructions. Raw milk or foods made from raw milk should be avoided. Pregnant women and people with weakened immune systems should avoid eating such foods as ready-to-eat meats, hot dogs, soft cheeses, and refrigerated smoked seafood.

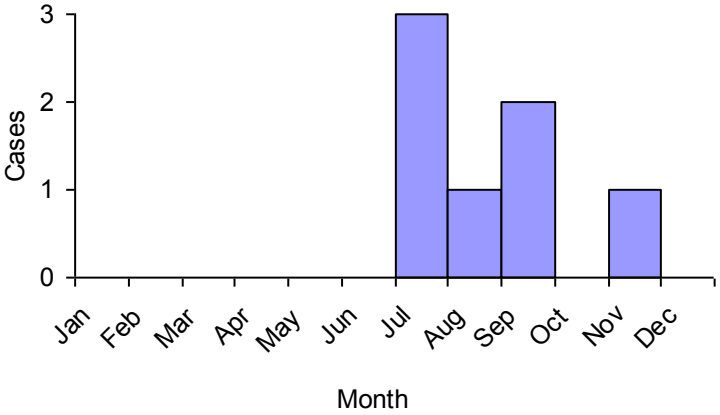
Listeriosis Incidence, Maine and US, 2011-2015



Listeriosis by Age and Gender, Maine, 2015



Listeriosis by Month of Onset, Maine, 2015



Lyme disease

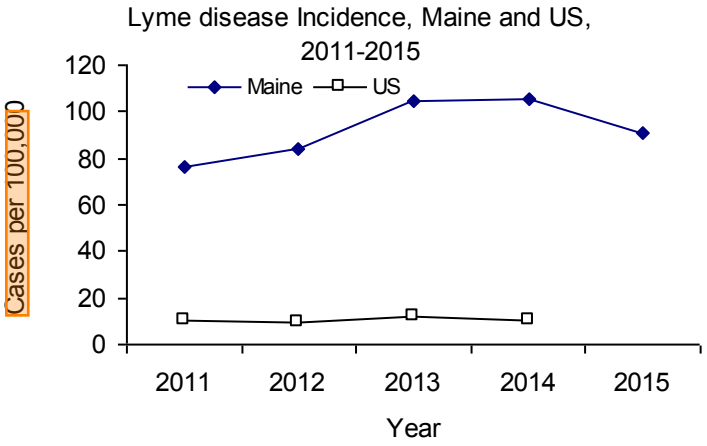
2015 Case Total	**1,203**
Maine Rate	**90.5 per 100,000**
U.S. Rate (2014)	**10.5 per 100,000**

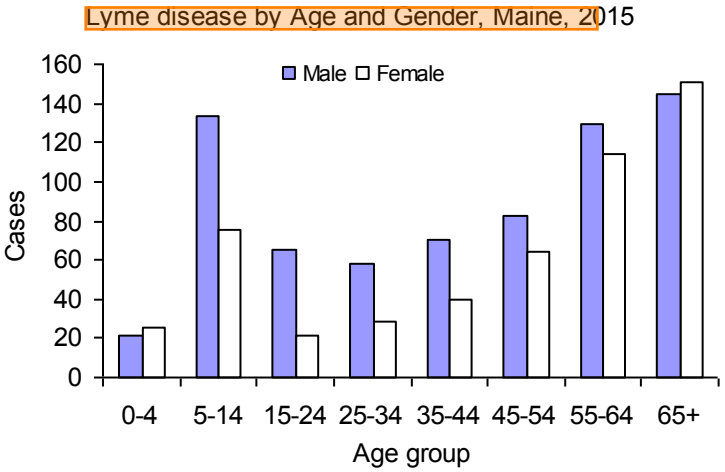
Lyme disease, Maine's most common vectorborne disease in humans, is caused by the bacterium *Borrelia burgdorferi*. The disease is transmitted via the bite of an infected deer tick (*Ixodes scapularis)* and symptoms generally appear between 3 and 30 days after the initial bite. Early symptoms include: a characteristic "bulls eye" rash, fever, headache, joint and muscle pain, and fatigue. Disseminated symptoms include: arthritis, Bell's palsy and other cranial nerve palsies, meningitis, and carditis.

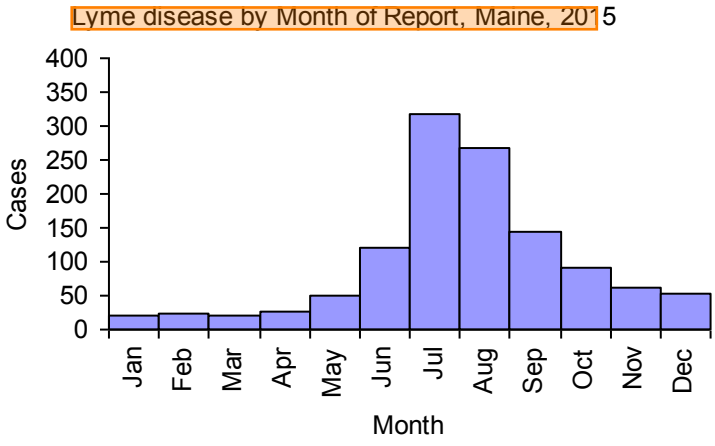
- 1,203 cases represent a decrease from 1,409 cases in 2014
- The 2010-2014 median number of cases per year was 1,113
- Median age was 51 years
- Age range was 1 year to 97 years
- Cases were 43% female and 57% male
- Highest rates were in Hancock, Kennebec, Knox, Lincoln, Sagadahoc, and Waldo counties

Although there is no vaccine for Lyme disease, risk can be greatly reduced by avoiding tick habitats, using EPA approved repellents (such as DEET), wearing long sleeves and pants, and checking for ticks after spending time in tick habitat. Landscape management and control of deer herds can also allow communities to better protect residents from Lyme disease.

For more information about submitting a tick for identification (not testing for Lyme disease) visit http://extension.umaine.edu/ipm/tickid/.



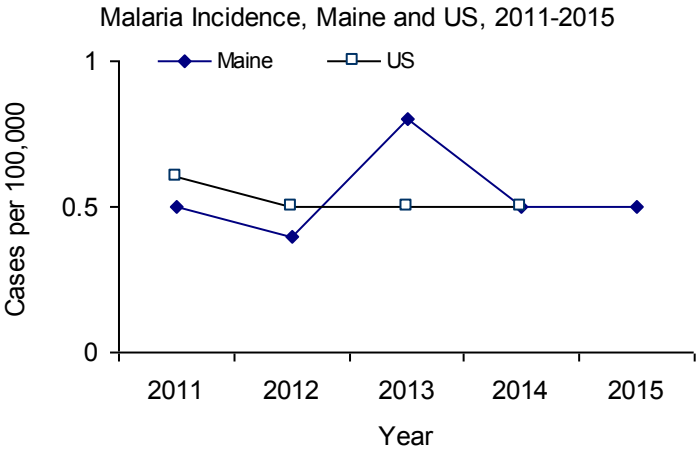




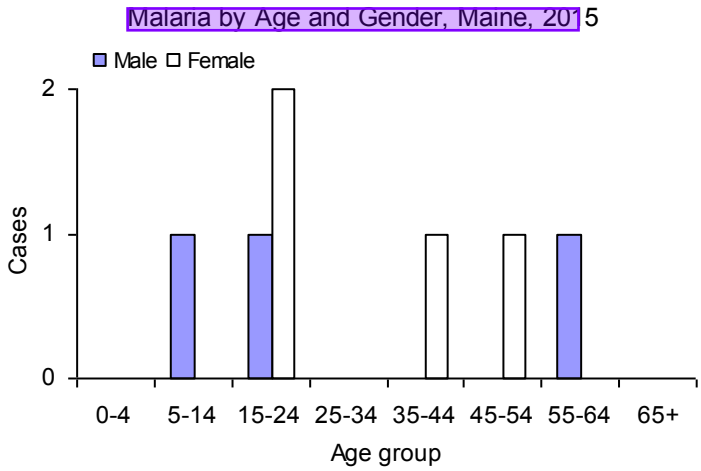
Malaria

2015 Case Total	7
Maine Rate	**0.5 per 100,000**
U.S. rate (2014)	**0.5 per 100,000**

Malaria is a serious and sometimes fatal disease caused by a group of parasites that infect mosquitoes in the genus *Anopheles*. Symptoms may include high fevers, shaking chills, flu-like illness, headache, muscle aches, tiredness, nausea, vomiting, and diarrhea.

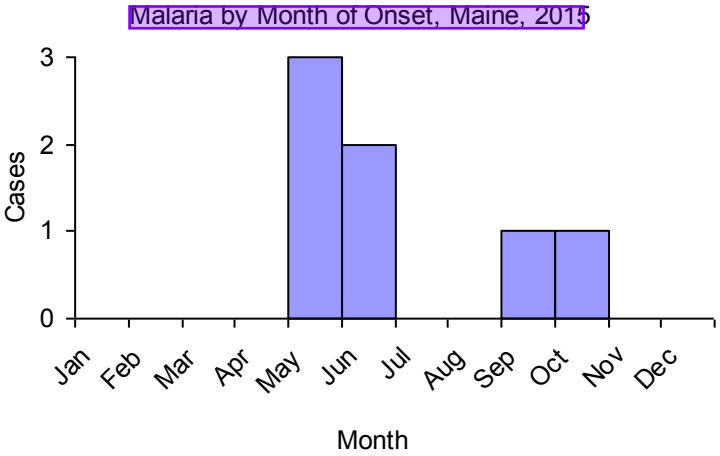


- 7 cases represents no change from 2014
- The 2010-2014 median number of cases per year was 6
- Median age was 24 years
- Age range was 10 years to 58 years
- Cases were 57% female and 43 % male



To lower the chances of contracting a mosquito-borne disease, measures should be taken to prevent mosquito bites both at home and while traveling:

- Use an EPA-approved repellent. Always follow the instructions on the product's label when using repellents or other pesticides.
- Wear long sleeved shirts and long pants when possible or when mosquitoes are abundant.
- Protect babies with mosquito netting.
- Stay indoors when mosquitoes are especially abundant.
- Sleep under a mosquito net when traveling to malaria endemic areas.
- Prophylaxis is recommended when traveling to areas with a threat of malaria.



Meningococcal Disease

2015 Case Total	**4**
Maine Rate	**0.3 per 100,000**
U.S. rate (2014)	**0.1 per 100,000**

Meningococcal disease is an infection caused by *Neisseria meningitidis,* a gram-negative diplococcus bacterium. Meningococcal disease presents most commonly as meningitis and/or meningococcemia that may progress rapidly to purpura fulminans, shock, and death. Transmission of meningococcal disease occurs through direct contact with respiratory secretions from the nose or throat of a person with the infection.

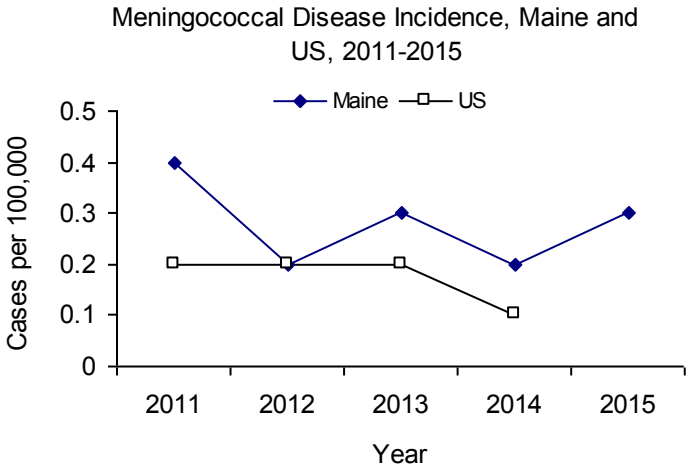
Symptoms include fever, headache, stiff neck for meningitis and rash and sepsis for meningococcemia. The symptoms are indistinguishable from other pathogens causing meningitis.

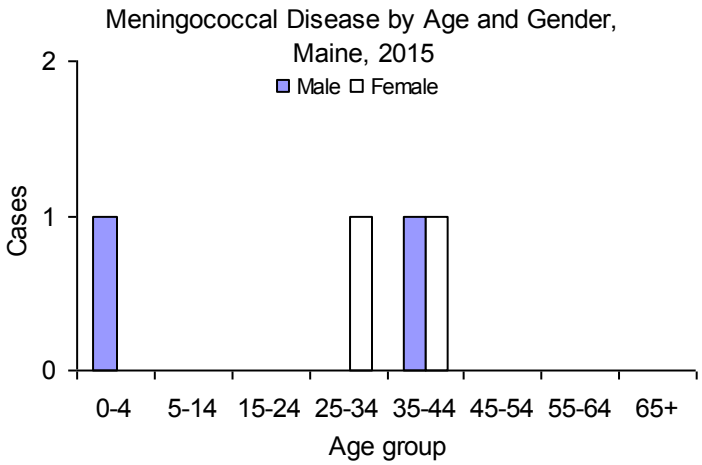
- 4 cases represent an increase from 2 cases in 2014
- The 2010-2014 median number of cases per year was 4
- Median age was 34 years
- Age range was 1 year to 43 years
- Cases were 50% female and 50% male
- Serogroups identified include: 2 serogroup B, and 2 not groupable

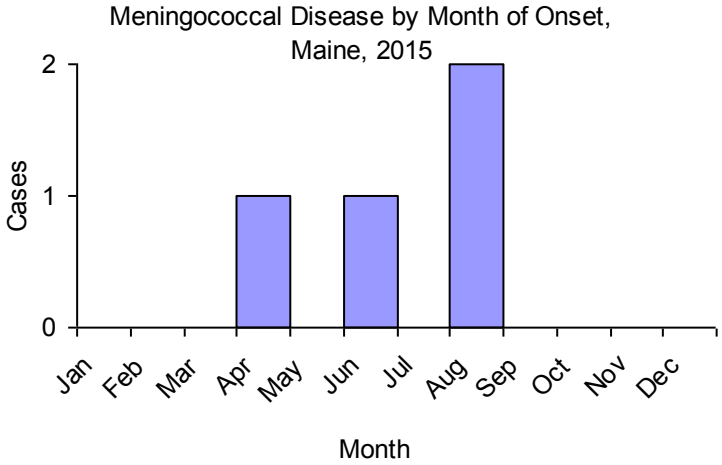
Vaccines are available to prevent infection with the most common serogroups.

See CDC guidance for detailed information: http://www.cdc.gov/vaccines/vpd-vac/mening/default.htm

To prevent the spread of disease, chemoprophylaxis is available for persons who have close and direct contact with a person with the infection.







Pertussis

2015 Case Total	**281**
Maine Rate	**21.1 per 100,000**
U.S. rate (2013)	**10.3 per 100,000**

Pertussis (whooping cough) is a bacterial infection of the respiratory tract caused by *Bordetella pertussis*. Prior to vaccine licensure, pertussis was a common childhood disease associated with a high mortality rate.

Symptoms include an irritating cough lasting at least 2 weeks with paroxysms, whoop, and post-tussive vomiting.

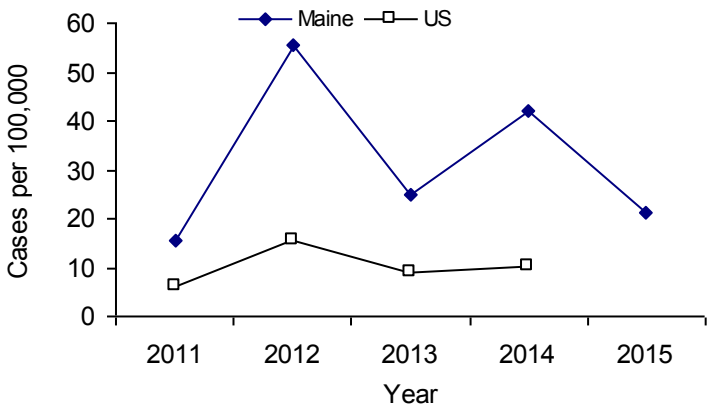
- 281 cases represent a decrease from 557 cases in 2014
- The 2010-2014 median number of cases per year was 332
- Median age was 10 years
- Age range was 25 days to 75 years
- Cases were 53% female and 47% male
- Highest incidence was in Franklin, and Waldo counties
- 174 (62%) of cases attend school

Vaccination is available and part of routine childhood immunizations. There are two pertussis vaccines (DTaP and Tdap). The ACIP recommends all persons 11 years and older receive Tdap in place of one tetanus booster.

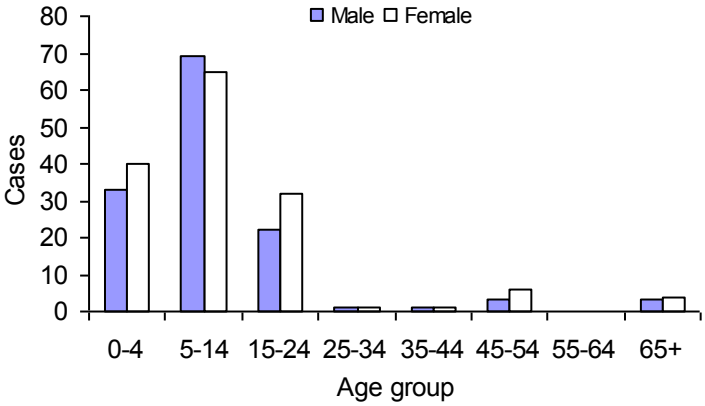
Federal CDC recommends that pregnant women receive the Tdap vaccine during the third trimester of each pregnancy.

For vaccine schedules please see: https://www.cdc.gov/vaccines/schedules/

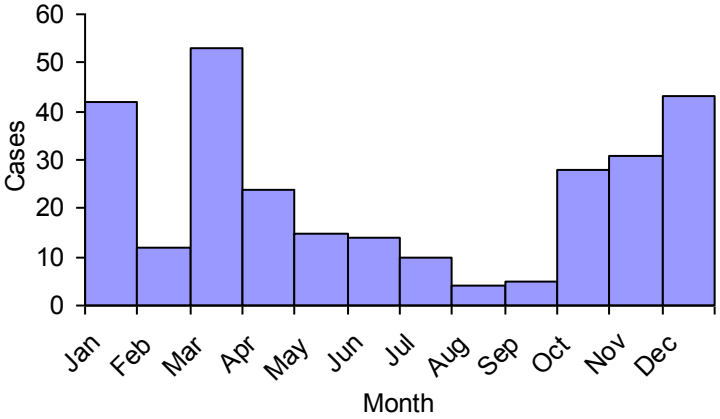
Pertussis Incidence, Maine and US, 2011-2015



Pertussis by Age and Gender, Maine, 2015



Pertussis by Month of Onset, Maine, 2015



Powassan

2015 Case Total	**1**
Maine Rate	**0.1 per 100,000**
U.S. rate (2014)	**0.0 per 100,000**

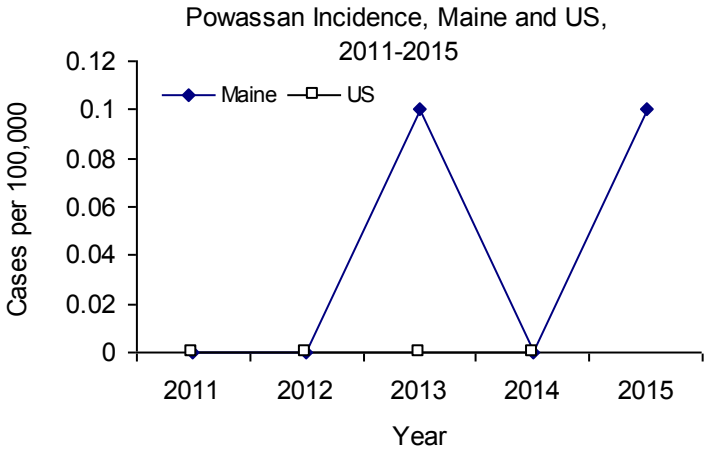
Powassan virus is transmitted to humans by infected ticks. Most cases occur in the Northeast and Great Lakes region.

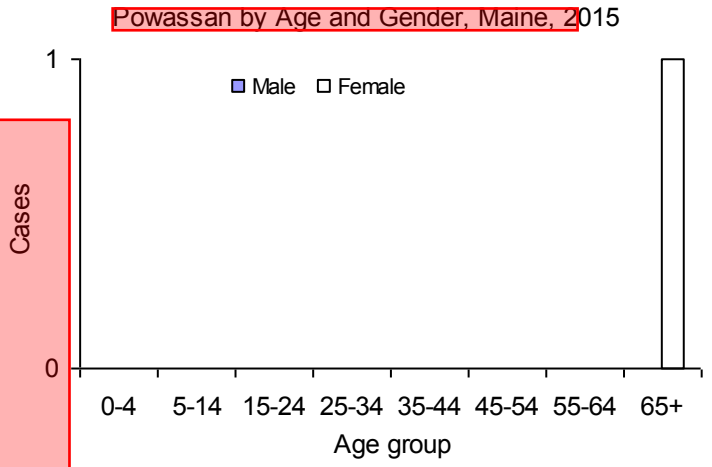
Signs and symptoms of infection can include fever, headache, vomiting, weakness, confusion, seizures, and memory loss. Long-term neurologic problems may occur.

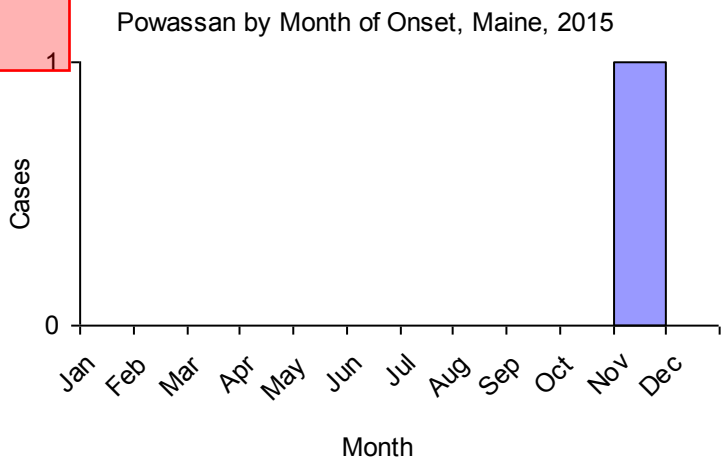
- 1 case represents an increase from 0 cases in 2014
- 7 cases were reported in the US in 2014

The best way to prevent infection is to take measures to protect against tick bites. Checking for ticks after visiting a tick infested area is an important way to reduce the risk of contracting anaplasmosis. Using EPA approved repellents such as DEET on skin or permethrin on clothing is a good way to protect against tick bites. Always follow the instructions on the label when applying repellent products. If an engorged tick is found, it should be safely removed and saved for identification. Monitor for signs and symptoms for 30 days after the tick bite.

For more information about submitting a tick for identification only (not testing) visit http://extension.umaine.edu/ipm/tickid/







Rabies, Animal

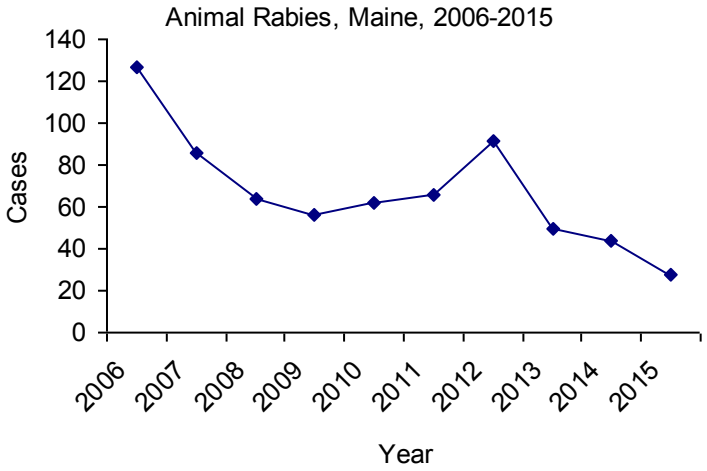
2015 Case Total	**28**
Maine Rate	**N/A**
U.S. Count (2014)	**4,322**

Rabies is a zoonotic viral disease that affects the central nervous system. All mammals are susceptible to rabies. Rabies in humans is rare in the United States. The majority of rabies infections occur in wild animals, including raccoons, skunks, foxes, and bats. Unvaccinated domestic animals are also at risk for getting and spreading rabies.

The rabies virus is found in the saliva and neural tissue of infected animals. Rabies is transmitted from the bite of a rabid animal. Rabies can also be spread if infectious material from a rabid animal gets into an open wound or mucous membrane (eyes, nose, or mouth) of a susceptible person or animal. Bat bites can be difficult to detect. Since bats are implicated in most human rabies cases, whether or not a bite was reported, any contact with a bat should be evaluated by a healthcare provider.

Rabies infection causes acute progressive encephalopathy. Early symptoms include fever and general discomfort. As the disease progresses, symptoms may include difficulty sleeping, anxiety, confusion, hallucinations, excessive drooling, difficulty swallowing, and hydrophobia. Rabies is almost always fatal after symptoms appear.

- 28 animal rabies cases represent a decrease from 44 cases in 2014
- The 2010-2014 median number of cases per year was 66
- The last reported case of human rabies in Maine was in 1937
- 76 persons were recommended to receive post exposure prophylaxis (PEP); 6 were exposed to a laboratory-confirmed rabid animal



Positive Rabies Results by Species, Maine, 2015

Animal	Number Positive	Animal	Number Positive
Raccoon	10	Fox	2
Skunk	7	Bat	9

Rabies testing requires central nervous system or brain tissue, obtained postmortem. The state public health laboratory uses direct fluorescent antibody testing to determine if wild or domestic animals that expose people or domestic animals are rabid. 778 animals were tested for rabies by Maine's Health and Environmental Testing Laboratory or the United States Department of Agriculture in 2015. Animals tested included: bats, bobcats, cats, cows, coyotes, a deer, dogs, foxes, goats, horses, a mink, a muskrat, an opossum, raccoons, sheep, skunks, a wolf hybrid, and woodchucks

Maine CDC works with Animal Control Officers, Game Wardens, veterinarians, and healthcare providers to recommend control measures for people and domestic animals after an exposure. Persons who are exposed to a laboratory-confirmed rabid animal should receive rabies post-exposure prophylaxis (PEP), which is a combination of rabies vaccine and immune globulin. Rabies PEP is very effective in preventing disease after an exposure.

Increased public awareness about rabies may reduce the number of exposures. Prevention measures include keeping pets up-to-date on rabies vaccine and avoiding wildlife.

S. aureus, methicillin resistant (MRSA)

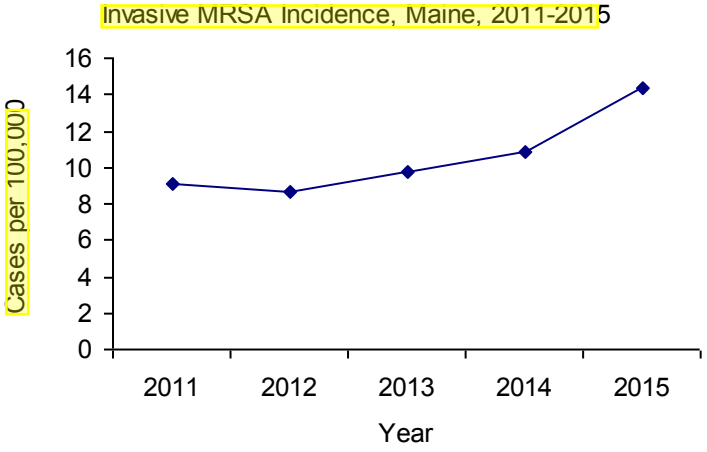
2015 Case Total	**192**
Maine Rate	**14.4 per 100,000**
U.S. rate (2014)	**Not reportable**

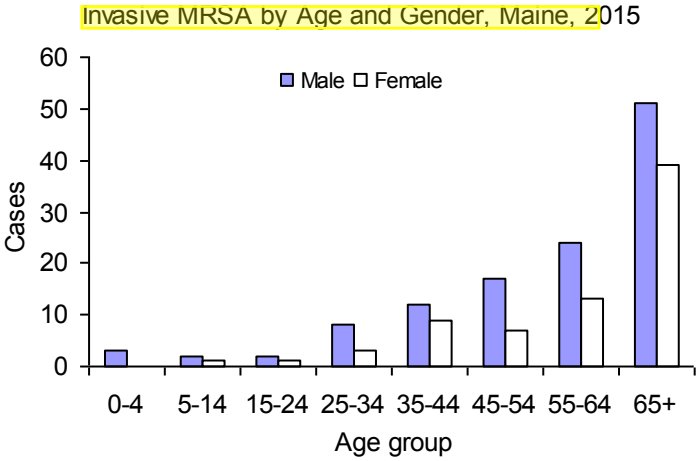
Methicillin-resistant *Staphylococcus aureus* (MRSA) is caused by a strain of bacteria which is resistant to the antibiotic methicillin and many of the antibiotics commonly used to treat staphylococcal infections. MRSA usually presents as a skin or soft tissue infection, considered a non-invasive infection. Invasive MRSA occurs when the bacteria infect internal systems and are isolated from a normally sterile site (such as blood, CSF, pleural fluid or joint fluid).

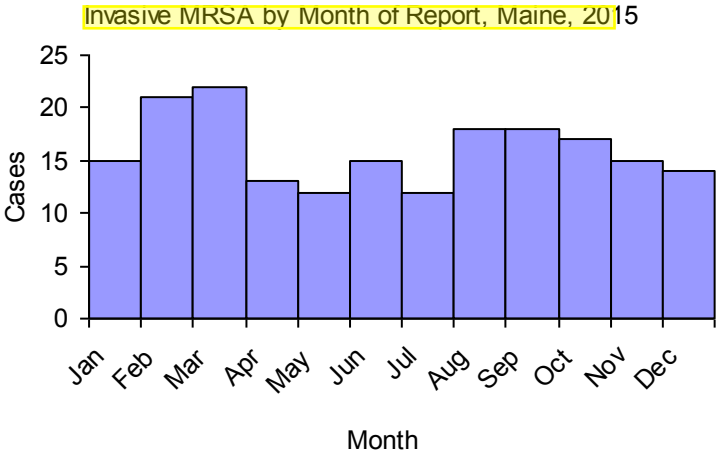
Persons with weakened immune systems, the elderly, and those with invasive medical devices are at increased risk of invasive MRSA infections.

- 192 cases represent an increase from 143 cases in 2014
- Median age was 63 years
- Age range was 1 year to 95 years
- Cases were 38% female and 62% male

To reduce MRSA transmission cover wounds with clean dry bandages; wash hands frequently with soap and warm water; use disinfectants effective against *S. aureus;* avoid sharing personal items such as towels, washcloths, razors, and clothing; tell your healthcare provider if you had contact with someone with MRSA; and avoid contact sports and other skin-to-skin contact until your infection heals. Seek medical care immediately to identify infection early and receive treatment for invasive MRSA infection.







S. aureus, vancomycin Intermediate resistant

2015 Case Total	**2**
Maine Rate	**0.2 per 100,000**
U.S. rate (2014)	**0.06 per 100,000**

Vancomycin-intermediate (resistant) *Staphylococcus aureus* (VISA) and Vancomycin-resistant *Staphylococcus aureus* (VRSA) are specific types of *Staphylococcus aureus* bacteria that have developed resistance to the antibiotic vancomycin.

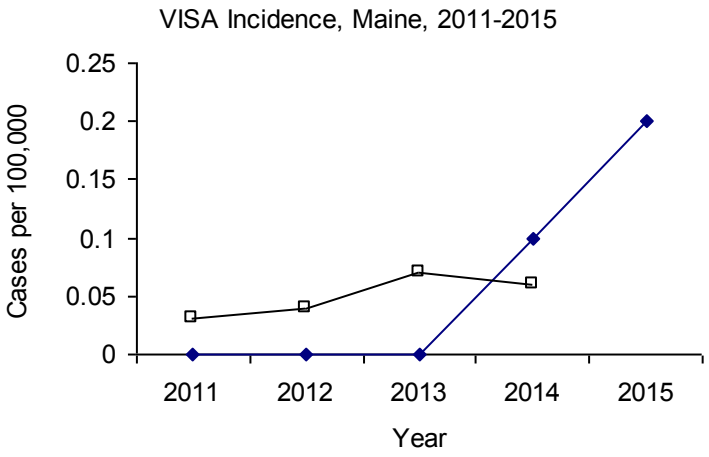
Staphylococcus aureus bacteria are commonly found on the skin and in the nose of about 30% of people. Most of the time these bacteria do not cause harm. Sometimes they can cause serious infections in the blood, lungs, bones or heart.

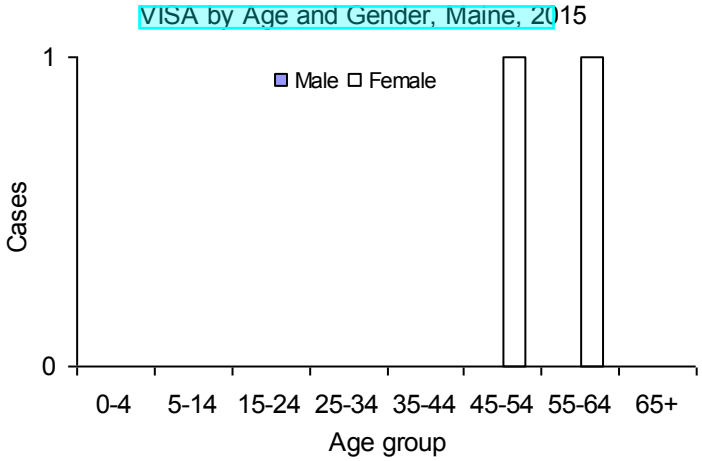
Persons that develop VISA and VRSA infections tend to have other conditions such as diabetes and kidney disease. Previous infections with methicillin-resistant *Staphylococcus aureus* (MRSA) can also put a person at risk. Tubes going into the body such as catheters, a recent or long stay in a hospital, and/or taking vancomycin and other antimicrobial agents can make these infections more likely.

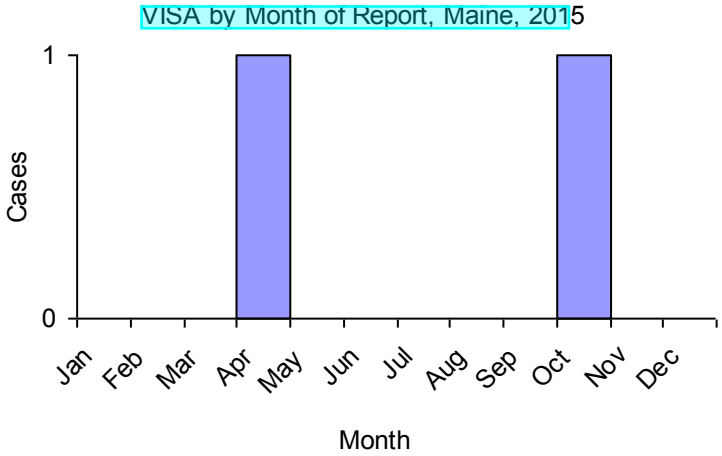
- 2 cases represent an increase from 1 case in 2014
- Cases were 100% female

These bacteria are spread by direct person to person contact. They can also be spread by contact with wounds or materials that have had contact with drainage such as bandages. Touching soiled clothes, towels, and bedding can also spread the germs. VISA and VRSA can usually be treated by approved medicines.

There has never been a VRSA case reported in the state of Maine.







Salmonellosis

2015 Case Total	**123**
Maine Rate	**9.3 per 100,000**
U.S. rate (2014)	**16.1 per 100,000**

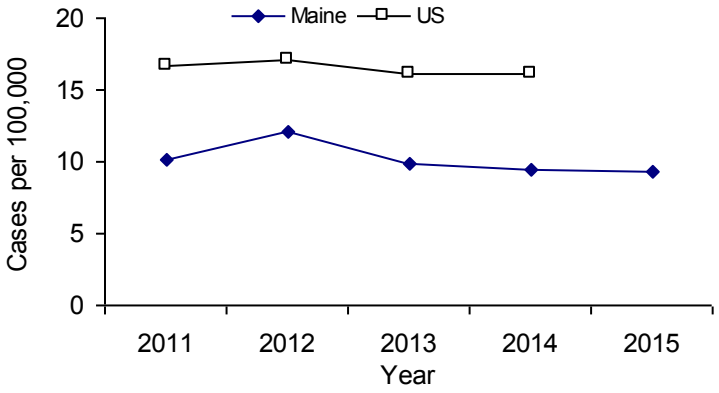
Salmonellosis is a gastrointestinal illness of varying severity caused by *Salmonella* bacteria. Severity of symptoms depends on the age and overall health of the person infected, serotype of *Salmonella* and the site of infection. *Salmonella* is transmitted through the ingestion of contaminated meat, poultry, eggs, unpasteurized dairy, and fresh produce. Handling of reptiles, chicks, domestic birds, and pets can also lead to transmission.

The symptoms can include: fever, cramping, diarrhea, nausea, and vomiting.

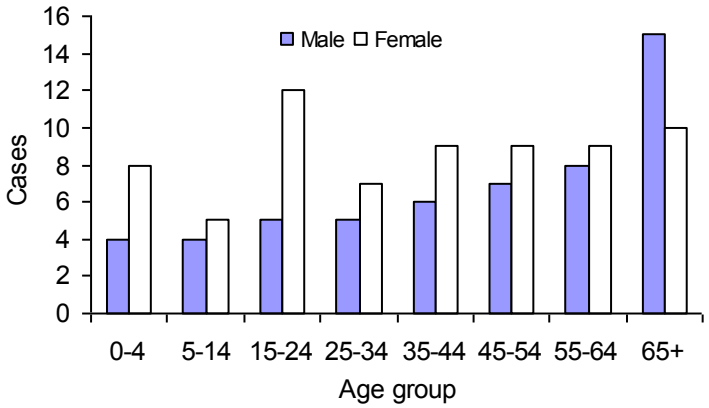
- 123 cases represent a decrease from 127 cases in 2014
- The 2010-2014 median number of cases per year was 133
- Median age was 41 years
- Age range was 3 months to 83 years
- Cases were 56% female and 44% male
- 112 of 123 (91%) cases were serotyped
- The most common serotypes of *Salmonella* were enteritidis, typhimurium, Newport, Muenchen, and Thomspon

The best way to reduce the risk of salmonellosis is to wash produce, avoid consuming unpasteurized dairy products, and follow proper cooking instructions. Individuals having contact with reptiles (such as snakes, lizards, turtles, frogs, iguanas, etc.), birds, poultry and farm animals should wash their hands immediately after handling these animals.

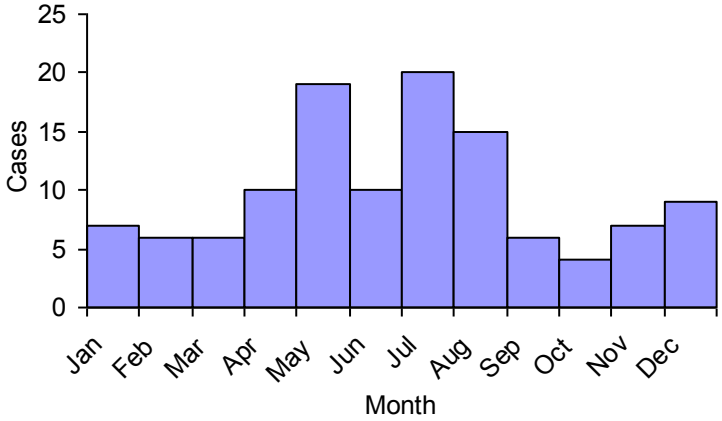
Salmonellosis Incidence, Maine and US, 2011-2015



Salmonellosis by Age and Gender, Maine, 2015



Salmonellosis by Month of Onset*, Maine, 2015



*onset date missing for 4 cases.

Shiga toxin-producing *E. coli (STEC)*

2015 Case Total	**29**
Maine Rate	**2.2 per 100,000**
U.S. rate (2014)	**1.9 per 100,000**

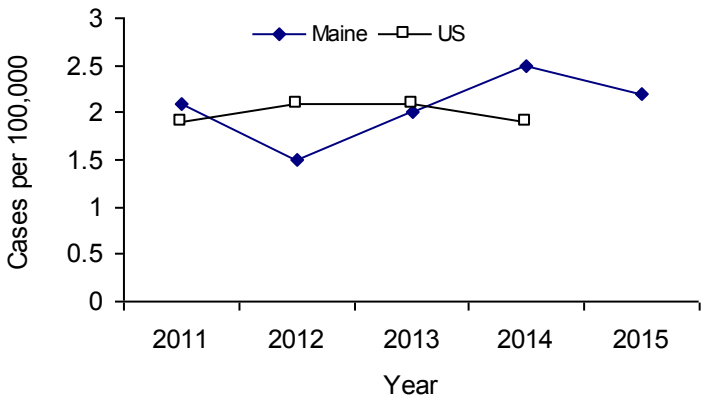
Escherichia coli (E. coli) are common bacteria that live in the digestive tract, some cause serious infection (by producing shiga toxins) and some do not. Transmission of shiga toxin-producing *E. coli* (STEC) is through consumption of food or water contaminated with fecal matter or through contact with farm animals. Commonly implicated food items include undercooked meats, raw vegetables, and unpasteurized products.

STEC may cause severe illness. Symptoms include: abdominal cramping, bloody diarrhea and a rare complication, hemolytic uremic syndrome (HUS), which can damage red blood cells and the kidneys.

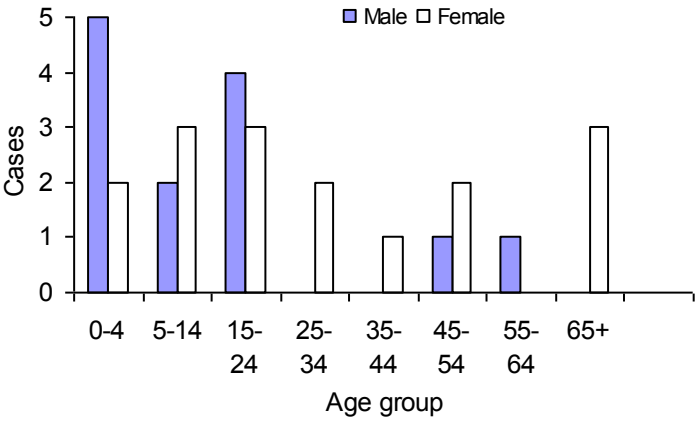
- 29 cases represent a decrease from 33 cases in 2014
- The 2010-2014 median number of cases per year was 27
- Median age was 20 years
- Age range was 10 months to 71 years
- Cases were 55% female and 45% male
- 27 of 29 (93%) cases were confirmed at the state laboratory
- 41% of laboratory confirmed cases were O157:H7
- 7 cases of HUS with symptoms of diarrhea were reported

STEC prevention measures include: handwashing, particularly before and after cooking and after contact with animals; thoroughly cooking meats; washing fresh fruits and vegetables; avoiding unpasteurized dairy products and juices; avoiding consumption of untreated water; and avoiding cross-contamination of food items.

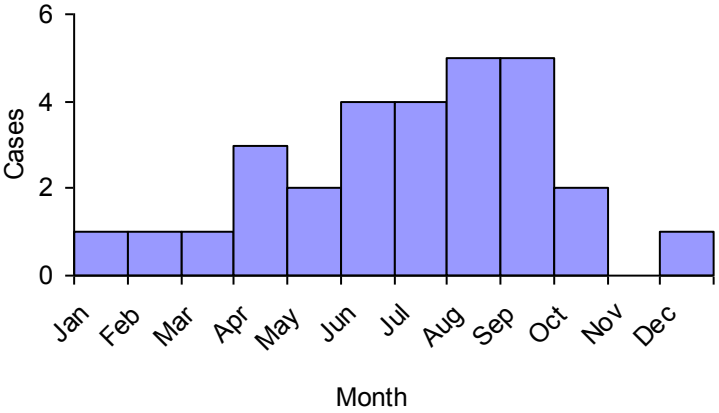
STEC Incidence, Maine and US, 2011-2015



STEC by Age and Gender, Maine, 2015



STEC by Month of Onset, Maine, 2015



Shigellosis

2015 Case Total	**4**
Maine Rate	**0.3 per 100,000**
U.S. rate (2014)	**6.5 per 100,000**

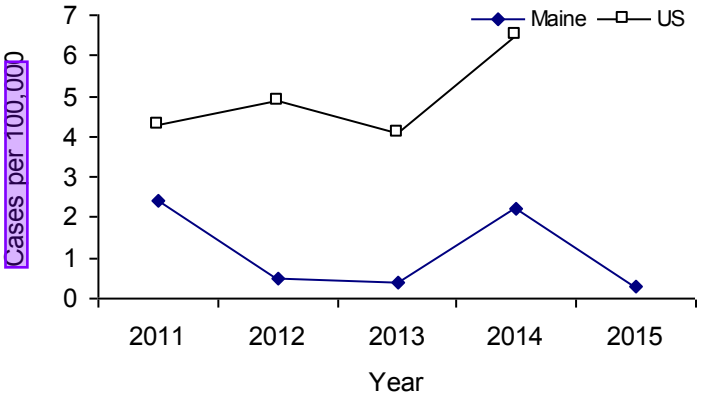
Shigellosis is a gastrointestinal illness caused by *Shigella* bacteria. *Shigella* is highly infectious and can easily be passed from one person to another through the fecal-oral route. Shigellosis can be transmitted by eating contaminated food, and drinking, swimming in or playing with contaminated water. Outbreaks of *Shigella* have also occurred among men who have sex with men.

Symptoms include: fever, stomach cramping and severe diarrhea which may be bloody. Shigellosis is easily spread among household members.

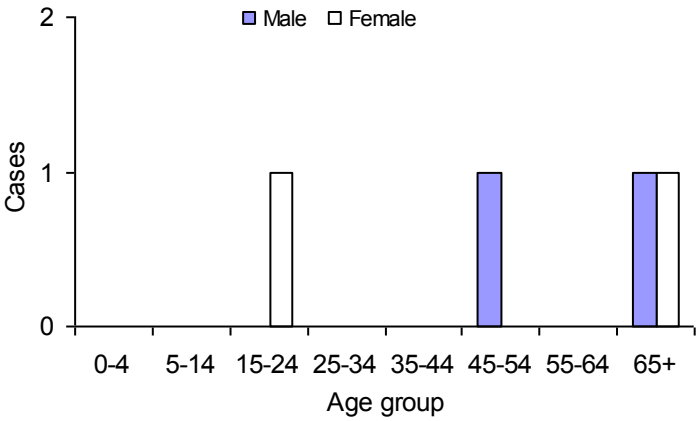
- 4 cases represent a decrease from 29 cases in 2014
- The 2010-2014 median number of cases per year was 8
- Median age was 60 years
- Age range was 20 to 70 years
- Cases were 25% female and 75% male
- 3 (75%) of 4 cases were confirmed at the state laboratory
- *Shigella flexneri* and *sonnei* were identified
- 1 (25%) cases had travel to a foreign country during exposure period

To prevent shigellosis practice good hand hygiene. Infected persons who are employed in childcare, healthcare, or food handling are restricted from work until infection clears and there is no evidence of *Shigella* in stool specimens. Shigellosis is more common in the developing world and travelers should take extra precautions.

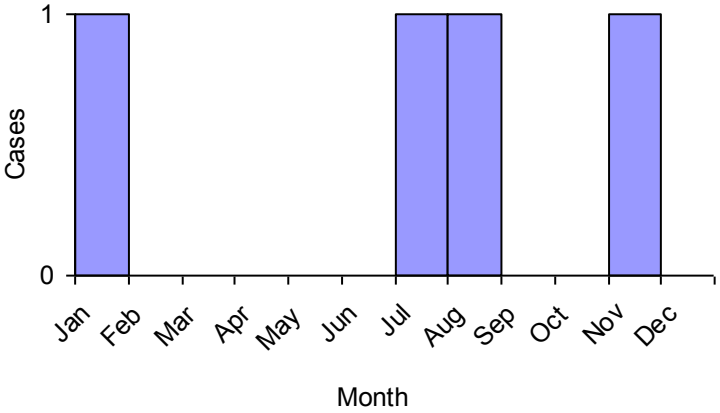
Shigellosis Incidence, Maine and US, 2011-2015



Shigellosis by Age and Gender, Maine, 2015



Shigellosis by Month of Onset, Maine, 2015



Spotted Fever Rickettsiosis (SFR)

2015 Case Total	**1**
Maine Rate	**0.1 per 100,000**
U.S. rate (2014)	**1.1 per 100,000**

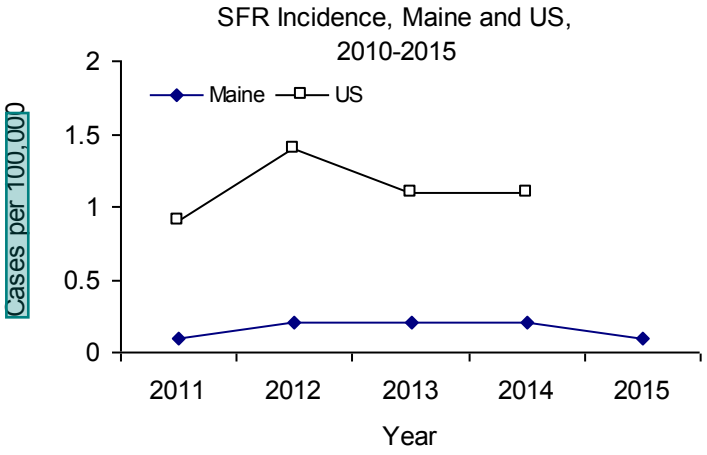
Spotted Fever Rickettsiosis is a broad term for a group of *Rickettsia* bacteria; the most common of these is Rocky Mountain spotted fever. SFR are transmitted to humans by the bite of an infected tick. Multiple species of ticks can carry *Rickettsia* bacteria.

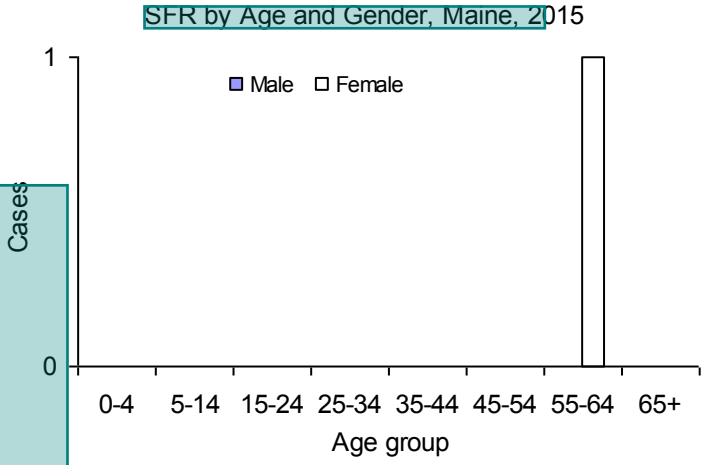
Signs and symptoms can include fever, eschar, and maculopapular rash particularly on the palms of the hands and soles of the feet.

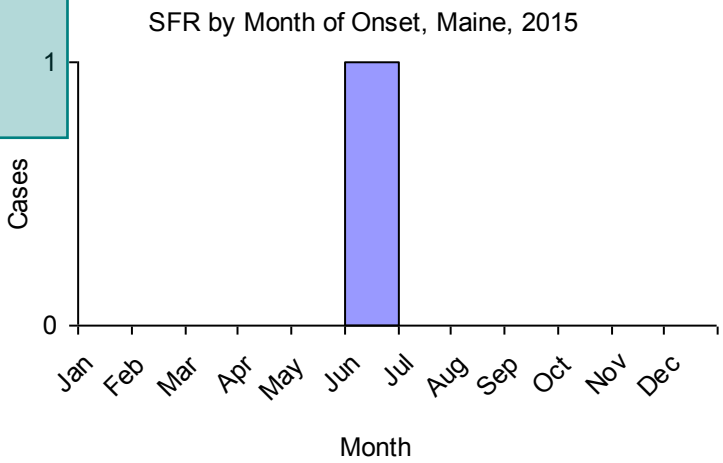
- 1 case represents a decrease from 3 cases in 2014
- All cases were probable

The best way to prevent infection is to take measures to protect against tick bites. Checking for ticks after visiting a tick infested area is an important way to reduce the risk of contracting spotted fever rickettsiosis. Using EPA approved repellents such as DEET on skin or permethrin on clothing is a good way to protect against tick bites. Always follow the instructions on the label when applying repellent products. If an engorged tick is found, it should be safely removed and saved for identification. Monitor for signs and symptoms for 30 days after the tick bite.

For more information about submitting a tick for identification only (not testing) visit http://extension.umaine.edu/ipm/tickid/







Streptococcus pneumoniae, invasive

2015 Case Total	**135**
Maine Rate	**10.2 per 100,000**
U.S. rate (2014)	**4.8 per 100,000**

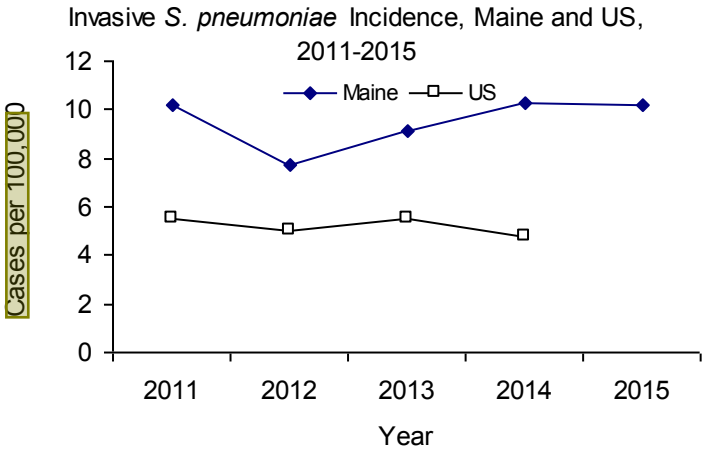
Invasive pneumococcal disease occurs when *Streptococcus pneumoniae* bacterium infects the blood, lungs, or brain. Disease is transmitted from person to person through droplets when an infected person coughs or sneezes. Types of illness include bacteremia, meningitis, and pneumonia. There are over 90 different serotypes of *S. pneumoniae*, but the majority of pneumococcal disease is caused by a few common serotypes.

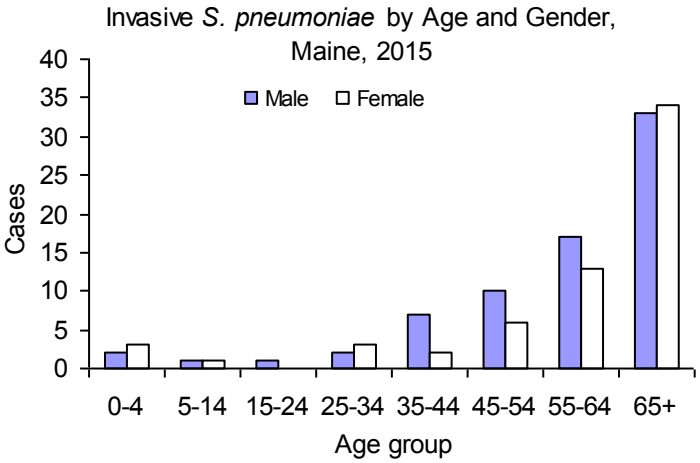
Persons at risk of pneumococcal disease include young children, adults 65 years of age or older, persons with certain underlying medical conditions, persons with weakened immune systems, and those in congregate settings such as daycare and long-term care facilities.

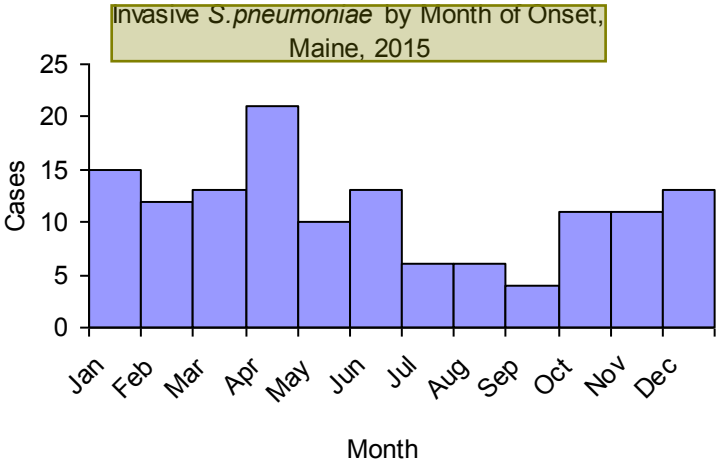
- 135 cases represent a decrease from 137 cases in 2014
- Median age was 64 years
- Age range was 1 month to 101 years
- Cases were 46% female and 54% male
- 21 (15%) cases were drug resistant
- 5 cases were in children under the age of five (1 cases was drug resistant)

Pneumococcal disease can be prevented through routine vaccination using two different vaccines: pneumococcal conjugate (PCV13) and pneumococcal polysaccharide (PPSV23).

See https://www.cdc.gov/vaccines/schedules/ for current vaccine schedules.







Early Syphilis

2015 Case Total	**49**
Maine Rate	**3.7 per 100,000**
U.S. rate (2014)	**19.9 per 100,000**

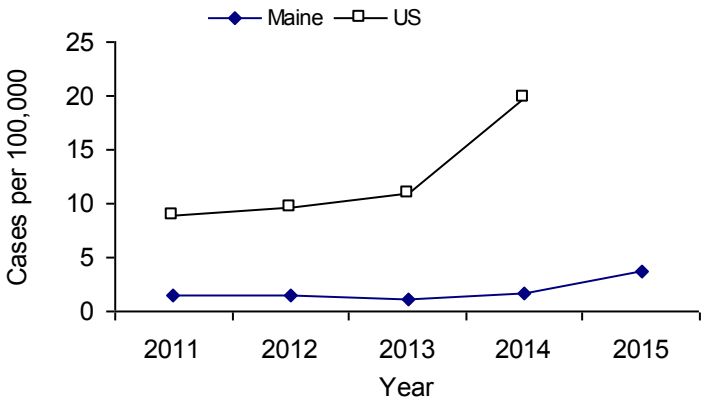
Syphilis is a sexually transmitted disease (STD) caused by the bacterium *Treponema pallidum*. It has often been called "the great imitator" because so many of the signs and symptoms of syphilis are like those of other diseases.

Early syphilis is defined as disease that occurs within the first year of infection. This is inclusive of the primary, secondary, and early latent stages of the disease.

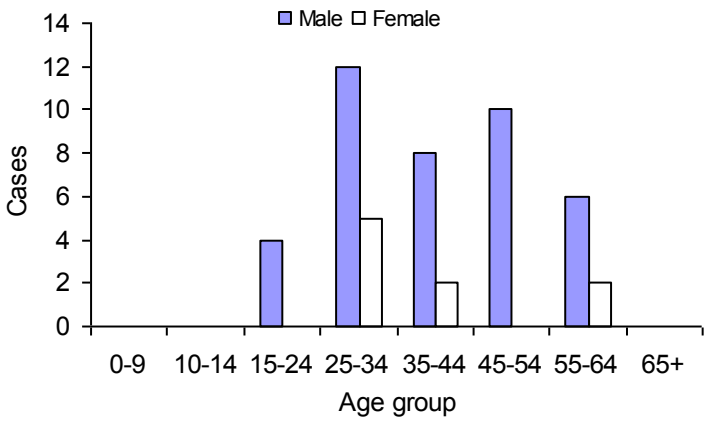
Syphilis is primarily spread through direct contact with a primary syphilis lesion. Lesions typically occur on the external genitals, vagina, and around the anus, but are also seen on the lips and in the mouth. Transmission primarily occurs during vaginal, anal, or oral sex. Disease transmission can also occur during the infectious period of the secondary stage, via the condylomata lata (raised moist papules) on the genital area or mucous patches in the mouth. Pregnant women with syphilis can pass it to their baby. Genital lesions caused by syphilis make it easier to transmit and acquire HIV infection.

- 49 cases represents an increase from 15 cases in 2014
- The 2010-2014 median number of cases per year was 19
- Median age was 39 years
- Age range was 20 to 63 years
- 40 (82%) of the cases were male, with only nine female cases (18%) reported
- 32 (65%) of the 40 male cases were self-identified men who have sex with men

Early Syphilis Incidence, Maine and US, 2011-2015



Early Syphilis by Age and Gender, Maine, 2015



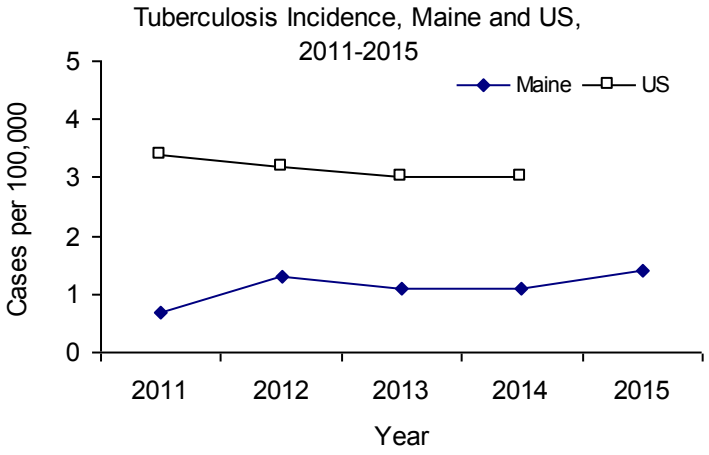
Many individuals infected with syphilis reach a latent stage and have no symptoms for years, but they are still at risk for later complications (damage to internal organs, nerve damage, blindness and dementia) and death if not treated.

Syphilis transmission can be prevented by the use of latex or polyurethane condoms and dental dams during anal, vaginal, and oral sex. Prevention and control efforts include targeted awareness messaging (including the internet) and disease intervention activities for all early syphilis cases. Disease intervention activities include working with health care providers to ensure adequate treatment and notifying partners of potential exposure.

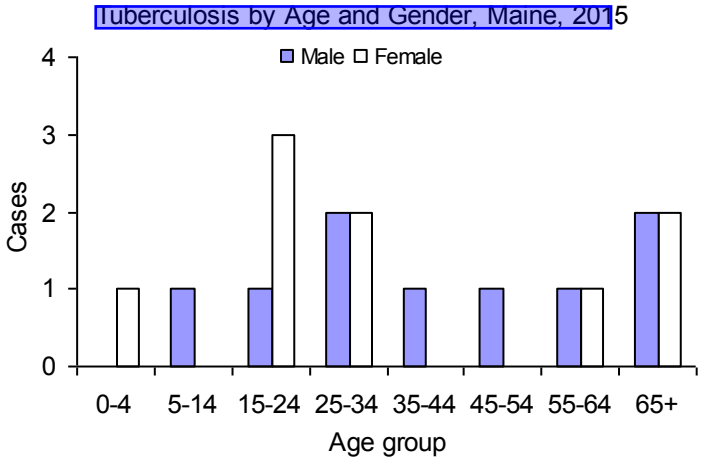
Tuberculosis

2015 Case Total	**18**
Maine Rate	**1.4 per 100,000**
U.S. rate (2014)	**3.0 per 100,000**

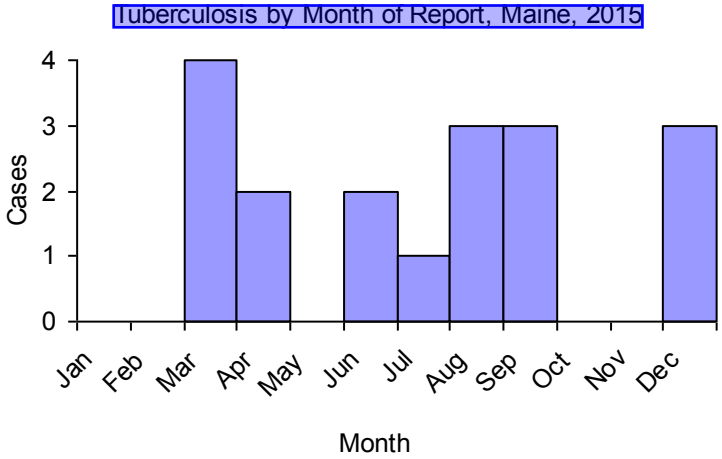
Tuberculosis (TB) is a communicable disease caused by the bacterium *Mycobacterium tuberculosis*. It is spread through the air by airborne particles that are expelled from the lungs when a person who has infectious TB coughs, sings, or sneezes. TB occurs when the mycobacterium is inhaled into the lungs and begins to multiply. Not everyone infected with TB bacteria becomes sick. As a result, two TB-related conditions exist: latent TB infection (LTBI) and active TB disease.



TB disease can cause infection in the lung (pulmonary) which is considered infectious to others. TB disease can also occur outside of the lung (extrapulmonary) which is not infectious.



- 18 cases represent an increase from 14 cases in 2014
- The 2010-2014 median number of cases per year was 14
- Median age was 29 years
- Age range was 1 to 87 years
- Cases were 55% female and 45% male
- 14 (78%) were foreign born
- In 8 contact investigations, 73% of identified contacts were evaluated; 28 were diagnosed with LTBI and 89% started treatment
- Of 493 LTBI reports, 91% were foreign born



All active TB cases are evaluated by a healthcare provider in consultation with a TB consultant physician; and are monitored by the state TB Control Program and Public Health Nurses.

Varicella

2015 Case Total	**233**
Maine Rate	**17.5 per 100,000**
U.S. rate (2014)	**3.2 per 100,000**

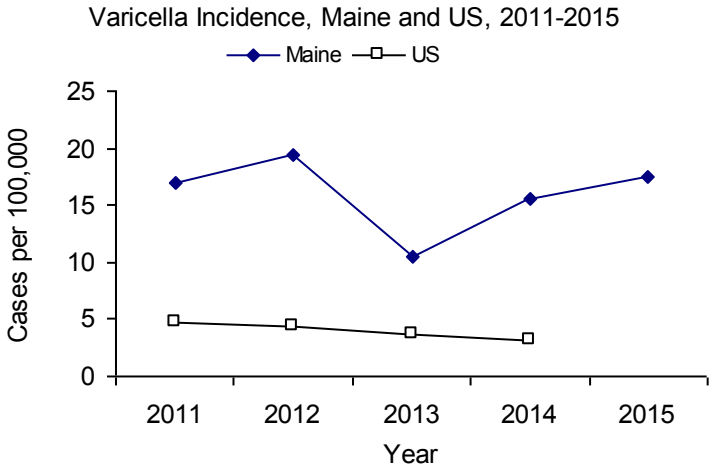
Varicella (chickenpox) is a highly contagious viral disease of which humans are the only source of infection. Most illness includes an itchy skin rash that looks like blisters, covering the body but more evident on the face, scalp, and abdomen. The majority of infected individuals develop a fever just before or when the rash appears.

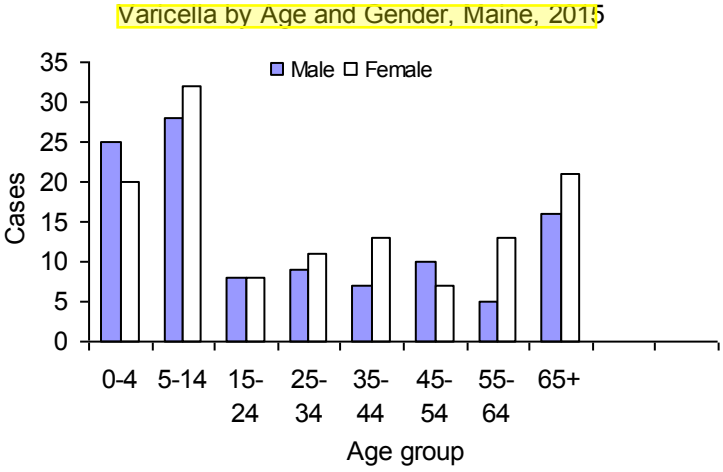
Person-to-person transmission occurs primarily through direct contact with respiratory tract secretions of infected individuals. Adolescents and adults are at higher risk for severe disease which could include pneumonia, bacterial infection of the skin and swelling of the brain.

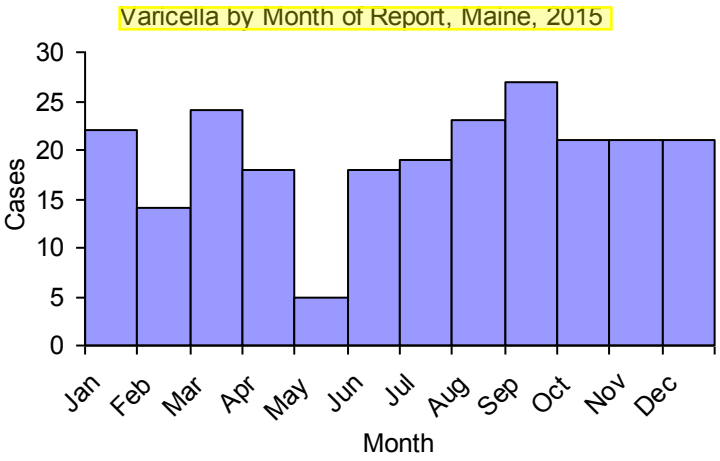
- 233 cases represent an increase from 207 cases in 2014
- Median age was 21 years
- Age range was 20 days to 94 years
- Cases were 54% female and 46% male
- Nationally, varicella incidence is reported to be an underestimate of true incidence

Varicella vaccine is a live attenuated viral vaccine. A two-dose series is estimated to be more than 90% effective in preventing infection. Federal CDC and ACIP recommend that all children receive 2 doses of varicella vaccine. Breakthrough infection has been reported in vaccinated individuals.

Mandatory vaccination for varicella (one dose) began in 2003 and is a requirement for Maine school admission.







Vibriosis

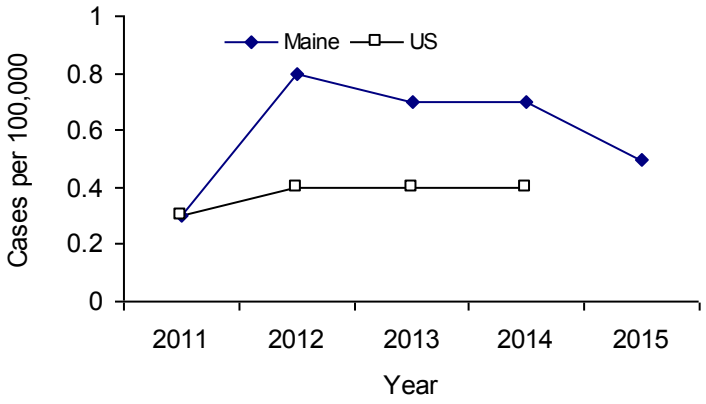
2015 Case Total	**6**
Maine Rate	**0.5 per 100,000**
U.S. rate (2014)	**0.4 per 100,000**

Vibriosis is an infection of variable severity characterized by diarrhea, vomiting, primary septicemia, or wound infections. *Vibrio parahaemolyticus*, associated with ingestion of raw or undercooked seafood, and *Vibrio alginolyticus,* associated with wounds and water contact, are the primary causes of vibriosis in Maine.

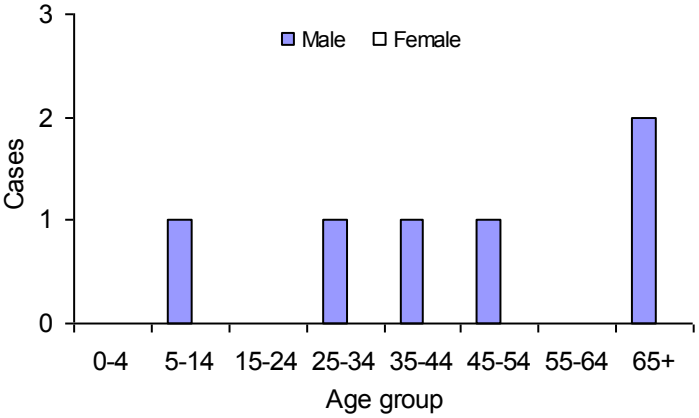
- 6 cases represents a decrease from 9 cases in 2013
- The 2010-2014 median number of cases was 9
- Median age was 46 years
- Age range was 9 to 81 years
- Cases were 100% male
- *Vibrio alginolyticus, parahaemolyticus*, and *Grimontia hollisae* were isolated

Vibrio infections can be prevented by thoroughly cooking seafood, especially oysters. Wound infections can be prevented by avoiding exposure of open wounds to seawater. Maine CDC works closely with the Maine Department of Marine Resources when persons with vibriosis report having exposures to shellfish or other marine sources of illness.

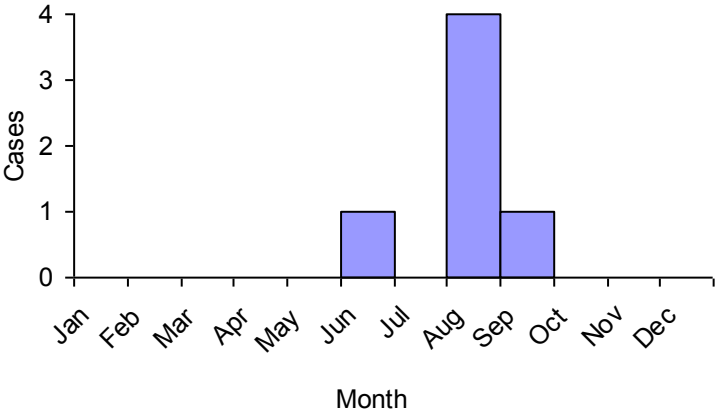
Vibriosis Incidence, Maine and US, 2011-2015



Vibriosis by Age and Gender, Maine, 2015



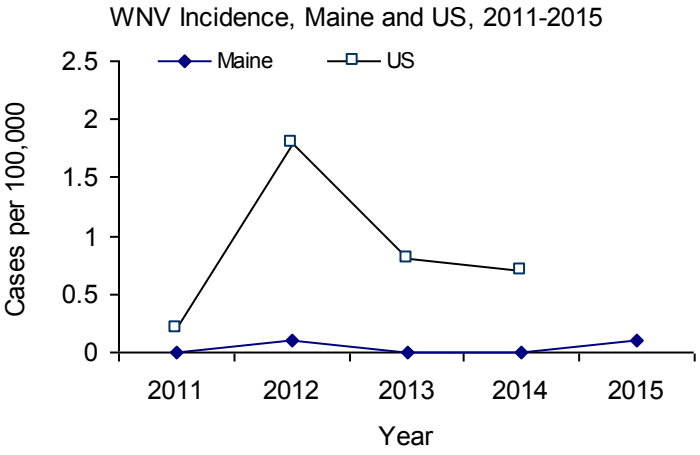
Vibriosis by Month of Onset, Maine, 2015



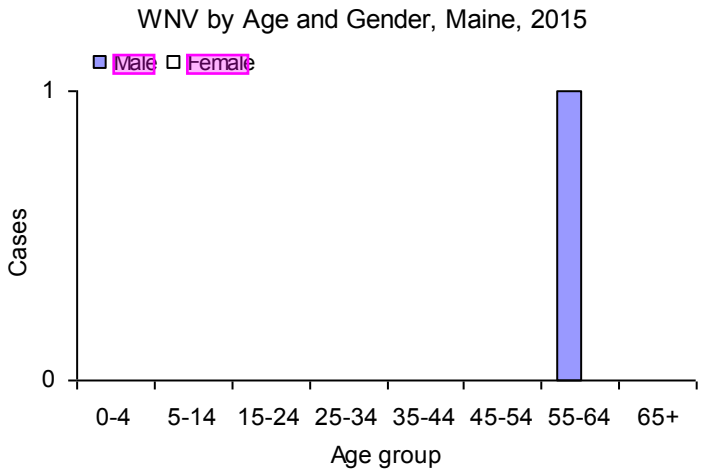
West Nile Virus (WNV)

2015 Case Total	**1**
Maine Rate	**0.1 per 100,000**
U.S. rate (2014)	**0.7 per 100,000**

WNV occurs throughout the United States and can cause disease in humans, birds, and other mammals. Many persons infected with WNV will have no obvious symptoms. In persons who develop illness, symptoms may include: headache, fever, altered mental status, tremors, convulsions, paralysis, meningitis, and encephalitis. WNV can be fatal.

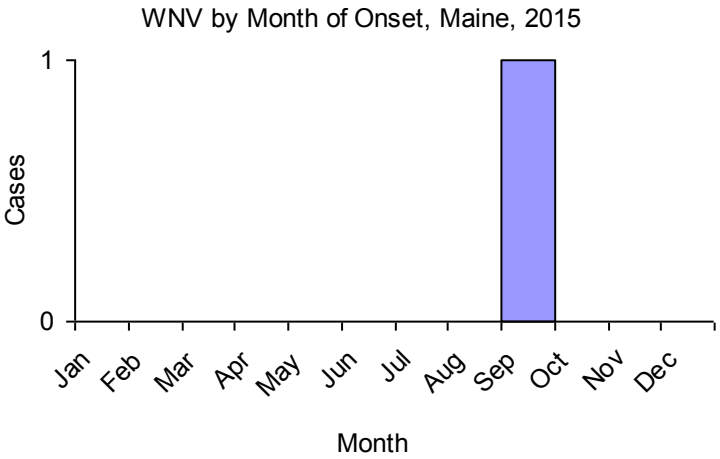


- 1 case represents an increase from 0 cases in 2014
- 1,347 neuro-invasive and 858 nonneuro-invasive cases were reported in the US in 2014
- 1 mosquito pool tested positive for WNV, an increase from the 0 pools that tested positive in 2014



To lower the chances of contracting a mosquito-borne disease, measures should be taken to prevent mosquito bites both at home and while traveling:

- Use an EPA-approved repellent including during the day (some of the mosquitoes are day biters). Always follow the instructions on the product's label when using repellents or other pesticides.
- Wear long sleeved shirts and long pants when possible or when mosquitoes are abundant.
- Protect babies with mosquito netting.
- Stay indoors when mosquitoes are especially abundant.



Appendix A: Workgroup Summaries

Food Safety Workgroup

The Maine Interagency Food Safety Workgroup is chaired by the Maine CDC foodborne disease epidemiologist and is comprised of multiple state and federal agencies involved in improving food safety in Maine. These agencies collaborate to reduce the incidence of food and waterborne infectious diseases in the state, respond to foodborne and waterborne outbreaks, and work together to advance food safety initiatives. The workgroup meets quarterly throughout the year to discuss the latest developments and cooperate to improve response and prevention. It occasionally holds trainings for its member agencies to participate in and invites industry members to meetings to discuss ways to resolve common issues. The work group finalized a standard operating procedure (SOP) for interagency vibriosis investigations in December 2015. This SOP enables the agencies involved in these investigations to collaborate more efficiently for a better and quicker response to cases of the disease in Maine.

Influenza Workgroup

Maine's influenza workgroup meets quarterly to address current topics in influenza and other viral respiratory pathogens. The workgroup is chaired by the influenza surveillance coordinator and includes representatives from epidemiology, public health preparedness, the Maine Immunization Program, the Health and Environmental Testing Laboratory, Maine Department of Agriculture, Conservation, and Forestry and other relevant partners. The workgroup coordinates surveillance and response to influenza and maintains and updates the pandemic influenza plan. In 2015, the Influenza workgroup sponsored a "Bird Flu and ME" meeting to educate and prepare partners for the potential of avian influenza in Maine and to help solidify collaborations between agencies should an outbreak occur. The influenza workgroup also sponsors a start of influenza season conference call for healthcare providers and labs to update them on new guidance, reporting requirements, and assistance available from the state.

Rabies Workgroup

The Maine Rabies Workgroup meets quarterly to address current topics in statewide rabies prevention and management. The workgroup, co-chaired by the State Epidemiologist and the State Veterinarian, is comprised of animal and human health representatives from public and private local, state, and federal agencies whose mission is to control the spread of rabies, a fatal zoonotic disease that is endemic in Maine. The workgroup is currently working on a revision of the 3rd edition of the Maine Rabies Management Guidelines, 2012 to include updated guidance on the management of dogs, cats, and ferrets exposed to rabies from the National Association of Public Health Veterinarians' 2016 Compendium on Animal Rabies Prevention and Control. The workgroup also plans statewide events to promote awareness for annual World Rabies Day celebrations.

Vectorborne Workgroup

Maine's vectorborne workgroup meets every other month to address current topics in vectorborne diseases; particularly related to ticks and mosquitoes. The workgroup is chaired by the Vectorborne epidemiologist and includes representatives from epidemiology, environmental health, the Health and Environmental Testing Laboratory, Maine Department of Agriculture, Conservation, and Forestry, Maine Department of Environmental Protection, Maine Department of Education, Maine Medical Center Research Institute, University of Maine Cooperative Extension, Maine Inland Fisheries and Wildlife, the Biodiversity Research Institute, pest control companies, and other relevant individuals. Subcommittes include the wildlife subcommittee which works on issues like deer density, the messaging committee which works on creating and standardizing information for common questions, and the education

subcommittee which works on outreach. The workgroup coordinates mosquito and tick surveillance within the state, and supports Lyme Disease Awareness Month in May.

Viral Hepatitis Work Group:

The Viral Hepatitis Workgroup (VHWG) brought together partners and stakeholders to provide feedback, input, and collaboration on various viral hepatitis-related events or projects. The viral hepatitis work group consists of members from Infectious Disease Epidemiology, HIV and STD Prevention, Perinatal Hepatitis B prevention, Maine Immunization Program and external partners who collaborate with Harm Reduction and testing outreach. In addition, the viral hepatitis coordinator has been building relationships with potential additional Work Group members through participation in meetings/groups of hepatitis C partners. In September, 2015 the coordinator extended invitations to this taskforce to external partners including HCV treatment specialists, community based organizations, local public health departments, and Maine State Outreach Coordinators. The VHWG worked to establish a collaborative prevention plan for the State of Maine, identifying key at risk populations and focusing strongly on linkage to care and completion of the viral hepatitis care cascade.

Appendix B: Hepatitis C Enhanced Surveillance Project

Maine Center for Disease Control and Prevention (Maine CDC) noted a sharp increase in acute hepatitis C cases reported in Maine from 2013-2014. The rate more than tripled from 0.7 to 2.3 cases per 100,000 persons. Over half of the cases were young adults under 30 years of age. The largest increase occurred in Washington County, followed by Knox, Penobscot, and Lincoln counties. The rate remained at 2.3 cases per 100,000 persons from 2014-2015.

To understand factors associated with this increase, Maine CDC conducted enhanced surveillance for hepatitis C among young adults in 2015. Chronic cases reported from January 1 to June 30, 2015 in persons aged 18-24 years were interviewed using a standardized questionnaire that was modified from one used by the Massachusetts Department of Public Health and CDC for a similar project. Institutional Review Board (IRB) approval was obtained from the University of Southern Maine and Maine CDC given that this project and the nature of the interview questions were outside the scope of routine surveillance.

A total of 91 cases of confirmed chronic hepatitis C in persons aged 18-24 years were reported from January 1 to June 30. Forty-eight cases were contacted, of which 20 completed interviews. Of the remaining 28 cases, 22 could not be reached and six refused to participate. Letters were sent to those who could not be reached, and two cases responded and completed interviews (included in the 20 cases). Two acute cases were identified as part of this enhanced surveillance. These cases were excluded from this project and routed through our routine surveillance process.

Among the 20 cases interviewed in the enhanced project, 10 (50%) thought they got hepatitis C from injection drug use, out of 11 that reported ever injecting drugs. Cases could report injecting more than one drug. The median age of first injection was 18.5 years with a range of 15-21 years. Drugs first injected were heroin by itself (5), heroin and cocaine together (1), opioids including Suboxone (2), Oxycontin (2), and morphine (1), and bath salts (1).

Fifteen cases reported ever using street drugs (injection or non-injection). Cases could report using more than one street drug. The median age of first street drug use was 15 years with a range from 7-23 years. The youngest age drug use was started was seven years, for methadone, and it was reportedly provided by a family member. Two and five out of 11 cases who reported using Oxycontin and Oxycodone, respectively, reported that it was prescribed.

The incidence of hepatitis C in the US has steadily increased since 2006. The largest increase is in non-urban areas, and young adults less than 30 years are disproportionately affected. The most frequently reported risk factor is injection drug use. The increase in reports of acute hepatitis C in young adults less than 30 years has already been demonstrated in other rural states, including Kentucky, Tennessee, Virginia, and West Virginia. Maine has the fifth highest rate of acute hepatitis C in the country. National data shows that out of 1,202 acute hepatitis C cases investigated, 77% reported injecting drugs, 57% reported sharing needles, and 82% reported sharing equipment. Filters, cookers, water, and surfaces all serve as significant fomites for the hepatitis C virus. A new syringe for every injection is not sufficient to prevent hepatitis C transmission. Instead, CDC recommends using a whole “new kit for every hit,” which includes clean drug preparation equipment. A common national pattern among people who use drugs is to start using cocaine and then transition to prescription opioids and heroin. Maine’s enhanced surveillance results show a median starting age of 17.5 years for cocaine, 17 years for prescription opioids, and 18 years for heroin. Injection drug use is a well-known route of transmission of blood borne infections, particularly HIV and hepatitis B and C. The viruses can be transmitted through the sharing of needles and drug-preparation equipment. CDC recommends blood borne pathogen testing for persons who inject drugs. The Advisory Committee on Immunization Practices recommends that people who inject drugs get vaccinated for hepatitis A and hepatitis B.

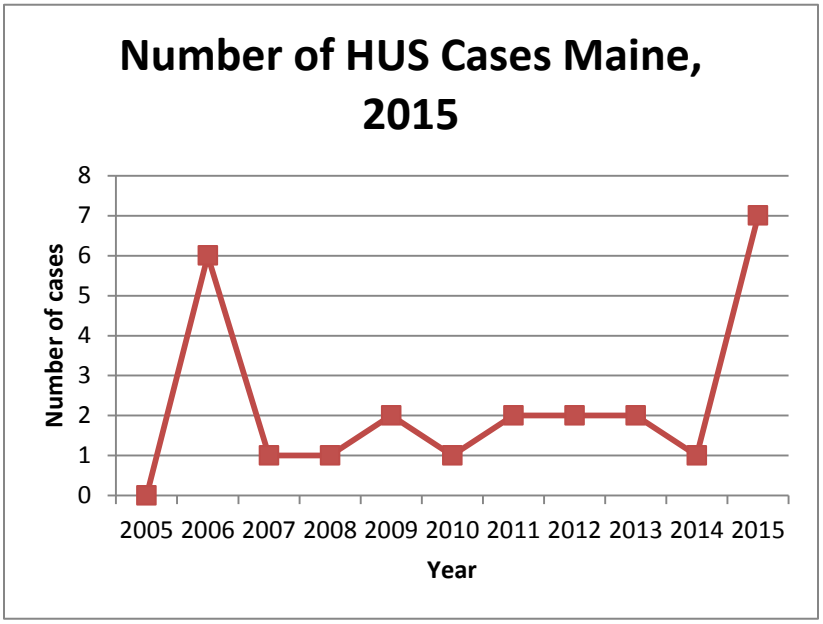
Maine’s enhanced surveillance project results should be used to inform partners about interventions to promote harm reduction and prevent hepatitis C transmission in persons who inject drugs.

Appendix C: Increase in Hemolytic Uremic Syndrome Cases in Maine in 2015

Maine Center for Disease Control and Prevention (Maine CDC) requires reporting of hemolytic uremic syndrome (HUS) cases by hospitals, laboratories, and healthcare providers. Infections with shiga toxin-producing *Escherichia coli* (*E. coli*), otherwise known as STEC, are also reportable and can lead to HUS.

In 2015, Maine CDC saw a significant increase of cases with 7 confirmed cases of HUS in Maine residents. The 10 year average of HUS cases in Maine is fewer than 2 cases per year. One death occurred. There were 29 Shiga toxin-producing *E. coli* (STEC) cases in Maine in 2015, which is not an increase from the 10 year average of 29 cases.

Maine CDC epidemiologists investigated reported HUS cases to identify common exposures. Specimens were sent to the Maine Health and Environmental Testing Laboratory (HETL) for further testing. The data collected were entered in Maine's infectious disease surveillance system and analyzed for common risk factors. Pulsed-field gel electrophoresis (PFGE) was performed at the state public health laboratory on stool specimens to determine if any cases matched. Environmental testing was performed on a common location visited by two cases.



All 2015 HUS cases required hospitalization and occurred in children under 15 years with no immune compromising conditions. Six cases (85%) were in children 3 years of age or younger. Onset of illness occurred from June through October. Only one of the seven cases consumed raw milk, two of the seven consumed raw egg products, and all consumed raw fruit. Three cases visited petting zoos during their exposure period, two at the same location. Four of the seven cases were *E. coli* O157:H7, two O111:non-motile, and one O145:non-motile. Two of the O157:H7 cases matched and were siblings. Two of the O111:non-motile cases matched, and common food and animal exposures were investigated.

Multiple cases in 2015 resulted in significant attention in the state and brought awareness of STEC and HUS to the public. Targeted messaging to the public about ways to prevent STEC infection and the more serious outcomes of HUS is necessary, particularly for non-food methods of transmission. Medical providers need to be reminded about the need for timely reporting and testing of individuals with bloody diarrhea. Continued surveillance of HUS cases in Maine will inform epidemiologists on future actions to reduce the incidence of HUS in the state.

Appendix D: A Cluster of Human Metapneumovirus (hMPV) Pneumonia Cases Associated with Two Group Homes – Maine, 2015

In April 2015, Maine Center for Disease Control and Prevention received a report of unexplained respiratory illness resulting in pneumonia and affecting residents/staff of two group homes. The illness resulted in seven hospitalizations. An investigation was initiated to determine possible etiology and implement control measures to prevent further illness among residents and staff.

All the individuals affected were tested for influenza and other respiratory viruses including RSV, parainfluenza and adenovirus. Testing was also done for bacteria through respiratory and blood cultures and legionella antigen through urine specimens. All test results were negative for these pathogens. Due to the severity of illness and the continued transmission, specimens were sent to federal CDC for testing. Out of six specimens sent, five tested positive for hMPV.

The outbreak lasted from March 20th, 2015 to April 25th, 2015. Out of thirteen total residents in the two group homes there were four confirmed cases and three probable cases for an attack rate of 54%. Of the six staff between the two facilities there was one confirmed and one probable case for an attack rate of 33%. The average age of those sickened was 60 years with a range of 42 to 74 years of age. Prompt infection control measures were implemented including isolation precautions, strict respiratory and hand hygiene, and environmental cleaning. No deaths occurred and the cluster was brought under control.

hMPV was only first identified in 2001. Its peak activity is late winter into early spring similar to influenza in Maine. The incubation period is reported to be five to six days and may be transmitted through large droplets or fomite contamination. Infection control measures follow similar recommendations for influenza in long term care facilities. hMPV is not tested on the routine respiratory panel and so clusters may often be missed. It is important when illness in a community facility is severe enough to cause hospitalizations and, there is no obvious etiology, testing is expanded to include less familiar pathogens.

Appendix E: Infectious Diseases in Shelter Settings

On two different instances in 2015, Maine Center for Disease Control and Prevention (Maine CDC) received reports of highly contagious diseases in individuals that frequented two of the homeless shelters in urban settings in Maine. Epidemiologic response included coordination with multiple players in the community, procuring resources, and educating the vulnerable populations in each of the situations to halt the spread of disease. Two individuals who resided at a women's shelter had laboratory confirmed meningococcal disease in August. In November, one individual who resided at a teen shelter had confirmed acute hepatitis A. These situations occurred at different times and required different but similar cross cutting responses necessitating the input from multiple community players.

Maine CDC identified both situations through reports electronically sent from laboratories, and the district Field Epidemiologist began investigations. In both circumstances, investigations included contact of lab, contact of providers, thorough medical chart review, site visits to determine where transmission may have occurred, and interviews of index patients. Maine CDC involved the shelters administration once estabilishing case residence at the shelters and conducted site visits. Numerous players worked together to stop disease transmission. The facilities requested involvement of the local Federally Qualified Health Center (FQHC) and city funded health clinic to administer prophlyaxis. A team consisting of a FQHC clinician, city health clinic clinicians, the Field Epidemiologist, and shelter staff held community meetings in the respective shelters to educate clientele and provide recommendations for, and adminstration of, post exposure prophlayxis (PEP).

In the case of the meningococcal disease at the women's shelter: the shelter and Field Epidemiologist identified 51 individuals as close contacts to the index cases and recommended PEP. Within 24 hours of identification of the second case, 40/51 (78%) of contacts were either treated or declined treatment. In the following days, the team reached 94% of the 51 contacts and 42/51 (82%) accepted antibiotic treatment.

In the case of Hepatitis A at a teen shelter: the shelter and field epidemiologist identified 40 individuals (youth teens at the shelter, shelter workers, and family members) as close contacts to the index case. Within three days all youth-teens were reached (23 were vaccinated for Hepatitis A and three declined), all staff were reached (eight vaccinated, one previously vaccinated, and one sent a letter), and all family members were vaccinated.

The main outcome of these two instances of disease in shelter settings was the prevention of spread of disease as evidenced by lack of secondary cases. Other accomplishments included better communication strategies among community players, and more experience working with hard-to-reach populations who are at great risk of disease.

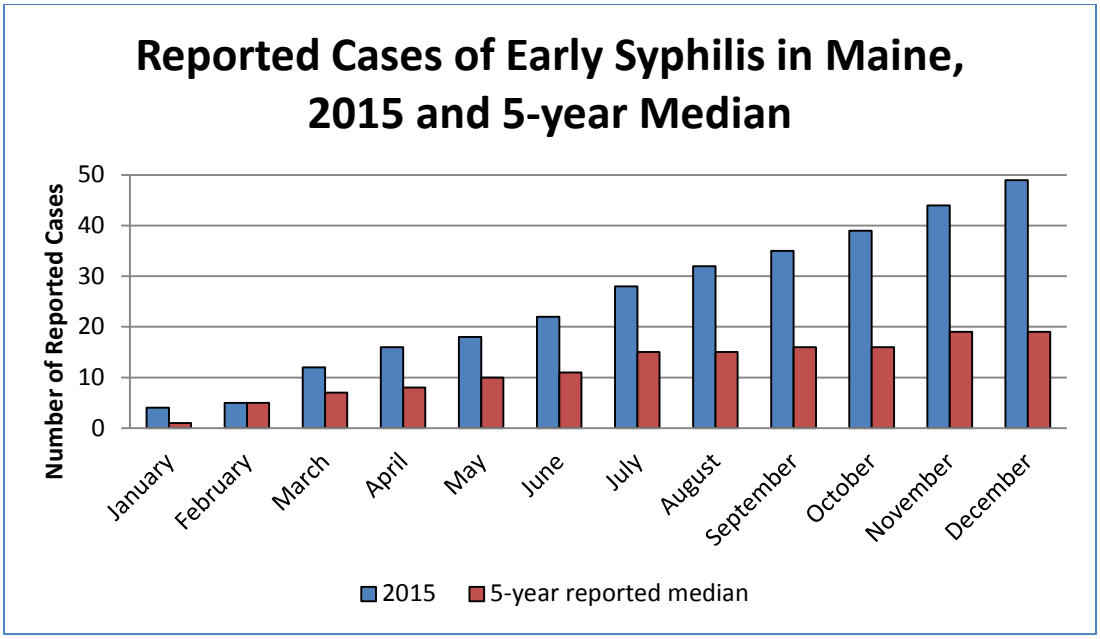
Appendix F: Syphilis in Maine

Syphilis is a sexually transmitted disease caused by the bacterium *Treponema pallidum* and is reportable to Maine CDC. Transmission of syphilis occurs during vaginal, anal, or oral sex. Pregnant women with the disease can transmit it to their unborn child. If left untreated, syphilis can lead to serious health complications. Symptoms in adults are divided into stages. These stages are primary, secondary, latent, and late syphilis.

Forty nine (49) cases of early syphilis (primary, secondary, and early latent) were reported to the Maine CDC during 2015. Reported syphilis cases increased by 133% from 2014 to 2015 with notable geographic disparities. Syphilis numbers in Maine have remained relatively constant in the past several years, with a 5 year median of 19 cases. In response to the surge in reported early syphilis cases, Maine CDC released a Health Alert Notice on December 1, 2015.

In 2015, the statewide rate was 3.7 per 100,000 population, and there were regional differences (Cumberland County: 9 per 100,000 population, Somerset County: 11.7 per 100,000 population). In 2014, the U.S. average rate was 6.3 cases per 100,000 population, the highest rate reported since 1994. In addition to a general increase of reported STDs across the country (http://www.cdc.gov/nchhstp/newsroom/2015/std-surveillance-report-press-release.html), the CDC also reported a sharp increase in congenital syphilis cases reported nationally (http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6444a3.htm). Maine did not have any congenital syphilis cases reported in 2015.

Of the reported cases, 61% of cases were diagnosed in southern Maine (26 cases in Cumberland County, 4 cases in York County), and 22% of cases were diagnosed in central Maine (Kennebec and Somerset counties). Over half of the cases (55%) were among 30 – 54 years old. Since 2011, the proportion of people 40 years and older with reported syphilis has been increasing steadily from 30% in 2011 to 47% in 2015. The majority of cases identified as male (40 cases, or 82%). The number of early syphilis cases among females rose from 1 reported case in 2011 to 9 reported cases in 2015. The predominant mode of transmission associated with reported syphilis cases were men who have unprotected sex with men (32 cases, or 65%).



Appendix G: Extensively Drug Resistant Tuberculosis – First Case in Maine, 2015

Tuberculosis (TB) is caused by the bacteria *Mycobacterium tuberculosis*. The disease is typically treated with four drug therapy including: isoniazid (INH), rifampin (RIF), ethambutol, and pyrazinamide. The drugs are considered first line therapy.

Drug resistance occurs when a medication stops becoming effective at killing an organism. All patients in Maine that have a positive culture for TB have a sample sent to the California Department of Health Microbial Diseases Laboratory for drug resistance testing. In the past, Maine has had several patients whose TB was resistant to one of the four first-line drugs, but Maine has never had a case of multi-drug resistant (MDR) TB. MDR TB is described as a TB organism that is resistant to INH and RIF, two of the first-line drugs.

In August 2015, a patient was reported to the Maine CDC as having non-infectious, extrapulmonary (not in the lungs or larynx) TB. The patient was started on the standard four drug therapy; however, the patient did not begin to recover from the illness. The drug resistance reports for the patient's TB were consistent with extensive multi-drug resistance.

Extensively drug resistant (XDR) TB is a term that depicts a rare, but more severe form of multi-drug resistance. XDR TB is defined as TB organism that is resistant to at least: INH and RIF, a fluoroquinolone, and one of the injectable second-line drugs (amikacin, kanamycin, or capreomycin). This drug resistance pattern can make it very difficult to effectively treat patients. The CDC reports that 30-50% of XDR TB patients can be cured, but success depends on several factors such as how many drugs the TB organism is resistant to, how severe the infection is, and how well the patient complies with the treatment.

With the help of the Global TB Institute and the National Institutes of Health, the patient in Maine was able to start an experimental treatment regimen and has begun to recover. A full course of treatment for a patient with XDR TB can last from 18-24 months.

Maine's XDR TB patient is foreign born and was originally from Djibouti but also spent time in Somalia before arriving in the United States. According to the World Health Organization (WHO), Djibouti and the United States have similar amounts of MDR TB amongst their TB patients at 1.7% and 1.1% respectively; Somalia has a higher burden at 5.2%. Not all countries have the funding or ability to test for drug resistance to second-line drugs, but the WHO estimates that, worldwide, 9.7% of MDR TB patients have XDR TB. In the United States, there were 2 cases of XDR TB in 2014.

Appendix H: A Cluster of Viral Meningitis Cases in one county - Maine, 2015

In September 2015, twenty cases of viral meningitis from one county were reported to Maine Center for Disease Control and Prevention (Maine CDC) within a two week period. Cases were located at four different public schools, as well as cases in infants and adults.

Meningitis is a swelling of the meninges, the tissues that cover the brain and spinal cord. Viral meningitis, the most common type of aseptic meningitis, is caused by an infection with one of several types of viruses. Meningitis can also be caused by infections with several types of bacteria or fungi. Viral meningitis is usually less severe than bacterial meningitis. Most cases in the U.S. are caused by enteroviruses, a group of common intestinal viruses. Other viral infections that can lead to meningitis are mumps, herpes virus infections, and influenza. Arboviruses, which are spread by mosquitoes and other insects, can also cause illness that leads to viral meningitis. Enteroviruses, the most common cause of viral meningitis, are typically spread through direct contact with respiratory secretions (saliva and mucus). Enteroviruses cause about 10 to 15 million infections in the United States each year. In the United States, people are more likely to get infected with non-polio enteroviruses in the summer and fall.

An investigation was conducted by an infectious disease epidemiologist to determine if these cases were related and to offer recommendations to the schools to prevent the illness' spread. When four cases were reported at the same high school, seven specimen samples were selected from the pool of patients, including three from the high school. These seven specimens were sent to the federal Centers for Disease Control and Prevention in Atlanta for testing. Six of the seven specimens were positive for enterovirus, and tests demonstrated two of the high school students' specimens had similar genetic sequencing, meaning that they could have been from the same source. The other samples were of two other genetic sequences and none of the same sequences were from the same setting, except for the two cases from the high school. The investigation showed that the four high school students did not know each other, nor did they have classes or ride the bus with each other. Maine CDC's definition for this outbreak was three or more confirmed enterovirus cases with same genetic sequence in the same setting. This was determined not to be an outbreak.

During the course of this investigation, the investigating infectious disease epidemiologist responded to 14 consult requests from parents, school nurses and school administrators. The messaging focused on the difference between viral and bacterial meningitis as well as recommendations for environmental cleaning and good health hygiene promotion.

Appendix I: 2015 Tick Data Collected by the University of Maine at Orono Cooperative Extension Tick ID Laboratory

In 2015, University of Maine at Orono Cooperative Extension Tick ID Laboratory offered free tick identification services. This service is part of a program to establish the distribution of deer ticks (*Ixodes scapularis*) in the state. Ticks found on people and pets were submitted with information on where the tick(s) were acquired. Ticks were not tested for the presence of Lyme bacteria.

It is important to note that this passive sampling could be influenced by a variety of extraneous factors (e.g. proximity to the laboratory, level of citizen concern about Lyme disease in an area, or whether a particular area is already widely known to have a deer tick presence).

Number of Ticks Identified by County and Type, Maine, 2015

County	*Ixodes scapularis* **(Deer tick)**	*Dermacentor variabilis* **(American dog tick)**	*Ixodes cookei* **(Woodchuck tick)**	*A. americanum* **(Lonestar tick)**
Androscoggin	3	0	0	0
Aroostook	1	1	1	0
Cumberland	25	7	0	0
Franklin	14	6	0	0
Hancock	30	16	0	0
Kennebec	4	3	1	0
Knox	5	1	1	0
Lincoln	1	0	0	0
Oxford	4	2	0	0
Penobscot	86	37	0	0
Piscataquis	2	1	0	0
Sagadahoc	16	2	0	1
Somerset	8	5	0	0
Waldo	7	4	0	0
Washington	3	0	0	0
York	6	3	0	0
Out of state	9	9	0	3
Totals	224	97	3	4

Why is it important to submit ticks for identification?

It is important for a physician (or a pet's veterinarian) to know what species of tick was involved in a bite. It is also important for surveillance purposes to know the type of tick and where ticks are found.

What diseases are carried by which ticks?

Ixodes scapularis (Deer tick) – Lyme disease, Anaplasmosis, Babesiosis, and Deer Tick Fever
Dermacentor variabilis (American dog tick) – Rocky Mountain Spotted Fever
Ixodes cookei (Woodchuck tick) - Powassan
Amblyomma americanum (Lonestar tick) - Ehrlichiosis

How are ticks removed?

Remove ticks by grasping them with fine tweezers as near to the skin as possible and pull up gently but firmly. A tick spoon is also effective. The barbed mouth parts may not let go easily. It may take several minutes or more. Do not handle ticks with bare hands.

How are ticks submitted?

Tick identification is performed at the University of Maine Cooperative Extension Tick ID Lab and is free. Instructions for submitting a tick are available at: http://extension.umaine.edu/ipm/tickid/submit/.

Place ticks in a small leak-proof container (no glass) with just enough rubbing alcohol to cover the specimen. Wrap the container in a paper towel and place inside a zipper-locking plastic bag. Include a submission form or use the online tick submission form. Mail ticks to:

UMaine Extension Tick ID Lab
491 College Avenue
Orono ME 04473-1295

Ticks can also be dropped off at the Cooperative Extension office from 8:00 am – 4:30 pm Monday – Friday.

September 8, 2015

Maine Center for Disease Control and Prevention

NOTIFIABLE DISEASES AND CONDITIONS LIST

24 Hours A Day, 7 Days A Week Disease Reporting:

Telephone: 1-800-821-5821 **Fax: 1-800-293-7534**

☎ Conditions are reportable **immediately** by telephone on recognition or strong suspicion of disease

All others are reportable by telephone, fax, electronic lab report, or mail within **48 hours** of recognition or strong suspicion of disease

➔✉ Directors of laboratories are to submit isolates or clinical specimens, as well as any isolates or clinical specimens as requested by Maine CDC, to the *Maine Health and Environmental Testing Laboratory* for confirmation, typing, and/or antibiotic sensitivity

Acid-Fast Bacillus ➔ ✉
Acquired Immunodeficiency Syndrome (AIDS)
Anaplasmosis
☎ Anthrax ➔ ✉ (*Bacillus anthracis*)
Babesiosis
☎ Botulism ➔ ✉ (*Clostridium botulinum*)
☎ Brucellosis ➔ ✉ (*Brucella* species)
California Serogroup Viruses
Campylobacteriosis
Carbapenem-resistant Enterobacteriaceae (CRE) [1]
Carbon Monoxide Poisoning [2]
Chancroid
Chlamydia
Chickenpox (Varicella)
Chikungunya
☎ Coronavirus, Novel and SARS ➔ ✉
Creutzfeldt-Jakob disease, <55 years of age
Cryptosporidiosis
Cyclosporiasis
Dengue
☎ Diphtheria ➔ ✉ (*Corynebacterium diphtheriae)*
E. coli, Shiga toxin-producing (STEC) ➔ ✉
Eastern Equine Encephalitis
Ehrlichiosis
Giardiasis
Gonorrhea
Haemophilus influenzae, invasive ➔ ✉
Hantavirus, pulmonary and non-pulmonary syndromes
Hemolytic-uremic syndrome (post-diarrheal)
☎ Hepatitis A, B, C, D, E (acute)
Hepatitis B, C, D (chronic)
Human Immunodeficiency Virus (HIV) [3]
Influenza-associated pediatric death
☎ Influenza A, Novel ➔ ✉
Influenza-associated hospitalizations, laboratory-confirmed
Legionellosis
Leptospirosis
Listeriosis ➔ ✉ (*Listeria monocytogenes)*
Lyme Disease

Malaria
☎ Measles ➔ ✉ (Rubeola virus)
☎ Meningococcal Disease, invasive ➔ ✉ (*Neisseria meningitidis)*
☎ Mumps ➔ ✉
☎ Pertussis
☎ Plague ➔ ✉ (*Yersinia pestis*)
☎ Poliomyelitis ➔ ✉ (Polio virus)
Powassan Virus
Psittacosis
☎ Q Fever
☎ Rabies (human and animal) ➔ ✉ (Rabies virus)
Rabies Post-Exposure Prophylaxis
☎ Ricin Poisoning ➔ ✉
☎ Rubella (including congenital) ➔ ✉ (Rubella virus)
Salmonellosis ➔ ✉ (*Salmonella* species)
☎ Shellfish Poisoning
Shigellosis ➔ ✉ (*Shigella* species)
☎ Smallpox ➔ ✉ (Variola virus)
Spotted Fever Rickettsiosis
St. Louis Encephalitis
Staphylococcus aureus, Methicillin-Resistant (MRSA), invasive
☎ Staphylococcus aureus with resistance to Vancomycin (VRSA) ➔ ✉
Streptococcus Group A, invasive
Streptococcus pneumoniae, invasive
Syphilis
☎ Tetanus ➔ ✉ (*Clostridium tetani)*
Trichinosis
☎ Tuberculosis (active and presumptive) ➔ ✉ (*Mycobacterium tuberculosis*)
☎ Tularemia ➔ ✉ (*Francisella tularensis)*
Vibrio species, including Cholera ➔ ✉ (*Vibrio* species)
☎ Viral Hemorrhagic Fever
West Nile Virus
Western Equine Encephalitis
Yellow Fever

☎ **Any Case of Unusual Illness of Infectious Cause**
☎ **Any Cluster/Outbreak of Illness with Potential Public Health Significance**

Who must report: Health Care Providers, Medical Laboratories, Health Care Facilities, Administrators, Health Officers, Veterinarians

What to report: Disease reports must include as much of the following as is known:

- Disease or condition diagnosed or suspected
- Patient's name, date of birth, address, phone number, occupation, race, and ethnicity
- Diagnostic laboratory findings and dates of test relevant to the notifiable condition
- Health care provider name, address and phone number
- Name and phone number of person making the report

Footnotes:

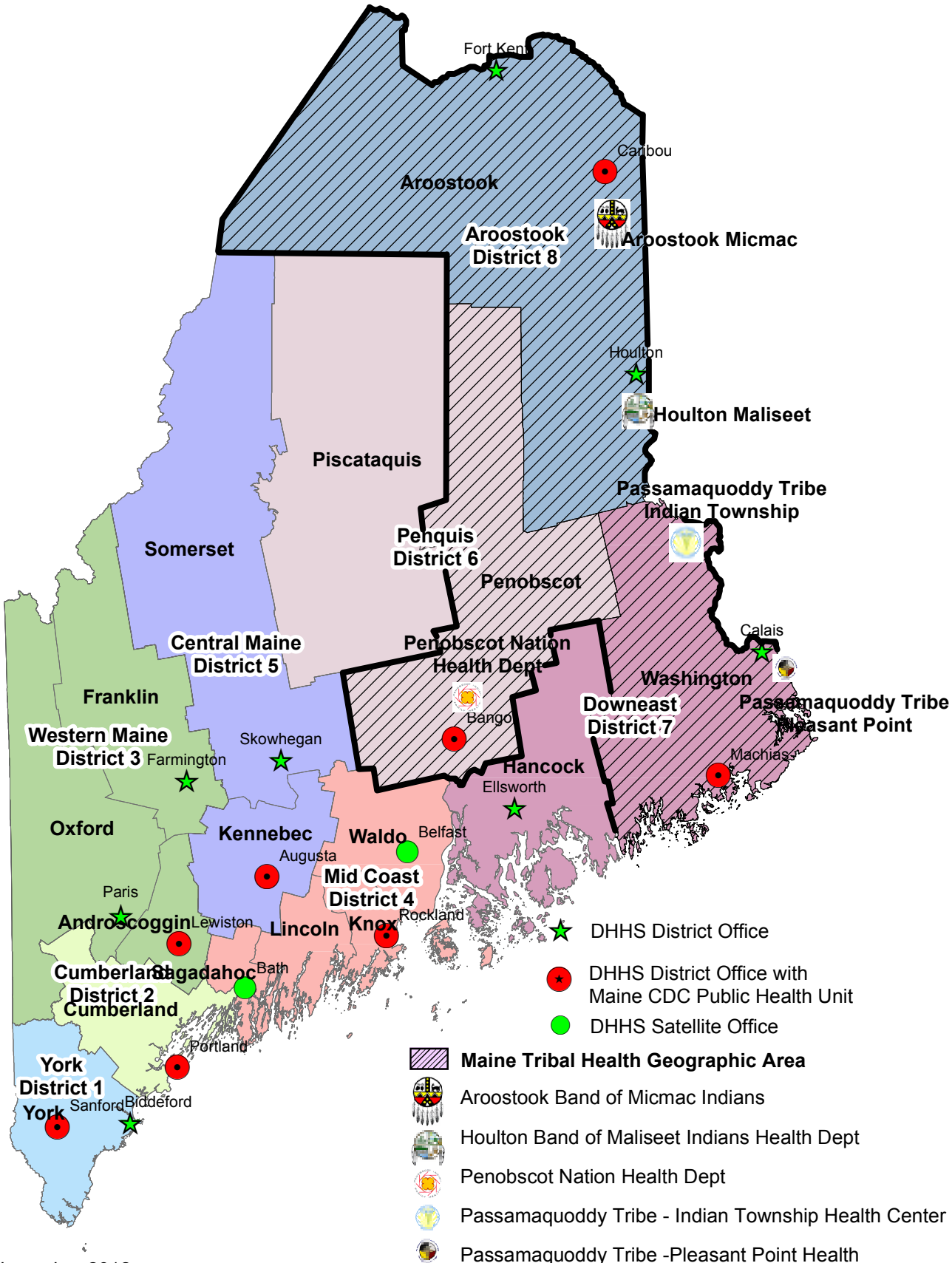
1. Carbapenem-resistant Enterobacteriaceae (CRE): See current definition as adopted by the United States Centers for Disease Control and Prevention
2. Carbon Monoxide, including clinical signs, symptoms or known exposure consistent with diagnosis of carbon monoxide poisoning and/or: a carboxyhemoglobin (COHb) level ≥5%
3. Human Immunodeficiency Virus (HIV), including:
   - Confirmed, positive antibody tests
   - Viral load tests, all results
   - CD4 lymphocyte counts, all results

Complete Rules for the Control of Notifiable Diseases and Conditions:

http://www.maine.gov/dhhs/mecdc/infectious-disease/epi/disease-reporting/index.shtml

Maine Center for Disease Control and Prevention
An Office of the Department of Health and Human Services

Maine Department of Health & Human Services District Offices and Maine Tribal Health Geographic Area



Updated November 2012

Map created by the Office of Public Health Emergency Preparedness

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Maine Center for Disease Control and Prevention

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