Reportable Infectious Diseases in Maine

2011 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

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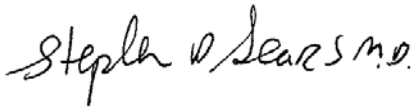
Maine Center for Disease Control and Prevention (Maine CDC) has published an annual report on infectious diseases in Maine for the last 18 years. This report is prepared by the Division of Infectious Disease and is intended to provide an overview of notifiable infectious diseases of public health importance 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, day care centers, school nurses and others who provide disease surveillance information. Our partners expend considerable time assisting Maine CDC with infectious disease investigations and disease control measures that affect Maine residents. Their active and critical role in the infectious disease surveillance cycle informs statewide policies and programs that protect our residents from infectious disease through health promotion, disease prevention, and early detection, containment, and treatment.

We appreciate and encourage our partners' 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 disease information to you, our partners.

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



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2011 Infectious Disease Surveillance Highlights

- Pertussis cases increased four-fold in 2011 due to community-wide outbreaks in Penobscot and Piscataquis counties. Targeted prevention and intervention occurred in those areas.
- Reported cases of shigellosis increased from 8 cases in 2010 to 32 cases in 2011 due to a small community wide outbreak in Androscoggin County in which 83% of cases were reported in children less than 18 years old.
- Reported cases of gonorrhea increased in 2011. The highest rates of infection occurred in Androscoggin and Cumberland counties.
- The first case of hantavirus pulmonary syndrome in Maine was identified.
- Two laboratory confirmed cases of influenza A virus H3N2v associated with exposure to pigs were identified in children in Maine.
- A northeastern regional outbreak of *Salmonella typhimurium var copenhagen* included four Maine residents. A traceback led to a USDA recall. The Maine Health and Environmental Testing Laboratory (HETL) isolated the matching strain of *Salmonella* from a patient's leftover ground beef, confirming the link between human illness and ground beef exposure.
- Over one thousand (1,006) cases of Lyme disease were reported in 2011. Two other tickborne diseases, anaplasmosis and babesiosis, also increased in 2011.
- Chlamydia remained the most commonly reported infectious disease in the state with 3,094 cases. Seventy percent of reported infections were in persons 15-24 years of age.
- Twelve cases of confirmed acute hepatitis C were reported to Maine CDC in 2011, compared to 2 cases in 2010. The numbers of newly reported cases of chronic hepatitis C infections increased from 1,142 in 2010 to 1,184 in 2011.
- Maine had the lowest rate of tuberculosis in the country, for the second year in a row, at 0.7 per 100,000 persons.
- Despite reported cases of giardiasis decreasing in 2011, the rate of giardiasis in Maine (12.9 per 100,000 persons) is twice the national rate (6.4 per 100,000 persons).
- 66 animals tested positive for rabies (32 raccoons, 12 skunks, 11 foxes, 5 bats, 2 feral cats, 2 sheep, 1 horse and 1 bobcat). Maine has not had a human case since 1937.
- Diseases associated with international travel (such as malaria and shigellosis) occurred in Maine residents in 2011. As international travel becomes more common and residents visit areas with endemic infectious diseases, there is a need to emphasize preventive strategies among travelers.
- Healthcare associated infections, especially *Clostridium difficile,* are an increasing focus of public health. Hospitals are now reporting healthcare associated infections due to MRSA and *C. difficile.* Clusters of *C. difficile* were reported in three nursing homes in 2011.

Overview 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.

In 2011, 71 infectious diseases were reportable in Maine with 55 considered nationally reportable. The list of reportable infectious diseases in Maine changes periodically, the last update was in 2008. 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 disease are re-emerging in some parts of the world due to decreasing vaccination 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 us 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.

The public health "patient" is the community, and information about community health can be useful to the clinician providing care to the individual. Partnership between public health professionals, healthcare providers, and clinical laboratories is critical to assure accurate, representative and timely information for all.

Disease Reporting in Maine

Healthcare providers, medical laboratories, healthcare facilities, administrators, health officers, veterinarians and others are required to report notifiable diseases to the Maine CDC (Appendix I). 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, 8th Floor, 11 State House Station, Augusta, Maine 04333-0011. Non-confidential reports or 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).

The Maine 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 2011 Summary provides descriptive epidemiology of reportable infectious diseases in Maine and serves as a historical document of public health surveillance data. The report allows public health officials to comprehend the burden of reportable infectious diseases in Maine. For example, surveillance data has demonstrated the spread of deer ticks and Lyme disease within 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 the Maine CDC. Case definitions may change from year to year. The case definitions used to classify 2011 data are available at http://www.cdc.gov/osels/ph_surveillance/nndss/PHS/infdis2011.htm. 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 reported to the federal CDC for their publications, unless otherwise noted. 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 total the final number of cases due to missing information on 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 for all diseases.

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

Counts of Selected Reportable Disease by Year, Maine, 2002 – 2011*

Disease	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Anaplasmosis (HGE)	1	1	1	4	10	9	17	15	17	26
Babesiosis	2	3	5	11	9	11	11	3	5	9
Campylobacteriosis	139	146	141	159	137	149	151	171	148	195
Chlamydia	1801	2040	2120	2253	2304	2543	2594	2443	2586	3094
Cryptosporidiosis	12	20	22	30	52	56	46	67	93	51
Dengue Fever	0	0	0	1	4	1	2	3	6	0
Ehrlichia chaffeensis (HME)	0	0	0	1	4	3	1	1	4	1
Giardiasis	212	184	155	202	192	197	188	223	223	171
Gonorrhea	142	231	214	142	137	118	96	143	162	272
Group A Streptococcal Disease (invasive)	20	28	16	14	19	28	28	21	47	43
Group B Streptococcal Disease, Infant (invasive)	5	2	1	3	1	1	6	2	8	2
H. Influenzae (invasive)	2	6	15	12	21	13	21	21	13	26
Hemolytic uremic syndrome	3	0	2	0	6	1	1	2	1	2
Hepatitis A, acute	9	16	16	9	8	5	18	1	7	6
Hepatitis B, acute	14	7	11	14	26	19	15	15	13	8
Hepatitis B, chronic	NA	NA	NA	NA	NA	139	142	126	101	105
Hepatitis C, acute	0	2	0	0	2	1	3	2	2	12
HIV Infection	39	65	46	59	62	64	46	56	59	54
Legionellosis	6	2	1	7	11	9	11	10	12	18
Listeriosis	5	6	8	3	6	5	5	4	1	4
Lyme disease	218	175	224	245	338	530	909	976	751	1006
Malaria	6	5	6	5	4	8	1	2	6	6
Meningococcal disease	9	10	12	2	9	8	6	4	5	5
MRSA, invasive	NR	NR	NR	NR	NR	NR	47	120	90	121
Mumps	0	0	0	2	0	24	5	6	2	2
Pertussis	21	91	195	55	174	83	49	80	53	205
Rabies, animal	67	82	69	61	127	86	64	56	62	66
Salmonellosis	147	141	108	163	161	138	159	121	133	134
Shiga toxin producing *E. coli*	49	15	18	29	49	41	26	19	21	28
Shigellosis	10	7	13	15	10	14	20	5	8	32
Streptococcus pneumoniae, invasive	NA	NA	NA	NA	NA	NA	NA	NA	130	136
Streptococcus pneumoniae (drug resistant invasive)	NR	0	4	8	12	13	18	23	30	32
Syphilis (early)	3	15	2	3	16	14	20	14	39	20
Tuberculosis	23	24	20	17	16	19	9	9	8	9
Varicella (Chickenpox)	792	1012	363	318	238	366	269	235	247	226
Vibriosis	4	3	4	2	5	0	3	4	5	4

*Counts may change from year to year.
NR = not reportable
NA = not available

Rates of Selected Reportable Disease by Year, Maine, 2002 – 2011*

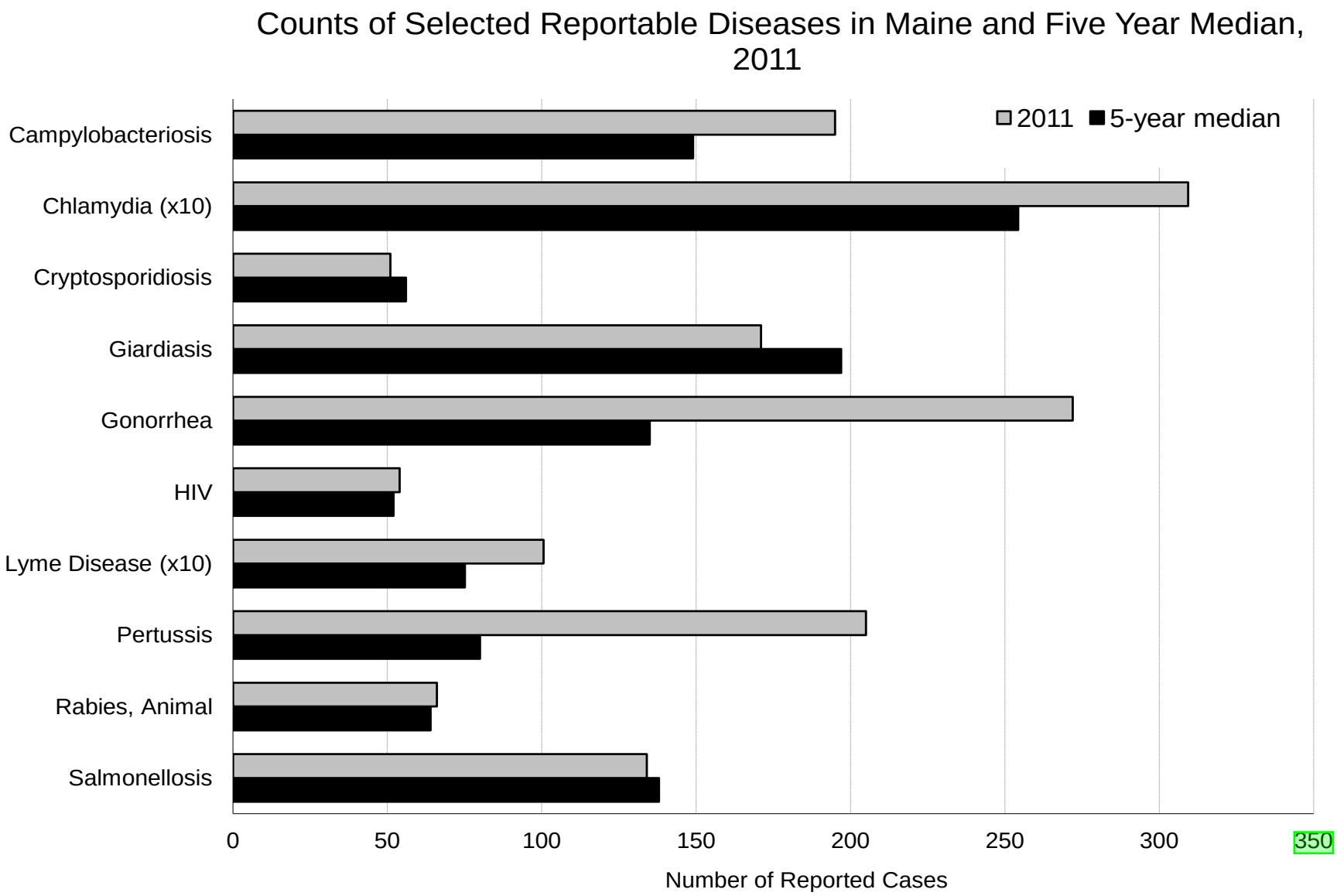
Disease	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Anaplasmosis (HGE)	0.1	0.1	0.1	0.4	0.8	0.7	1.3	1.1	1.3	2.0
Babesiosis	0.2	0.2	0.4	0.8	0.7	0.8	0.8	0.2	0.4	0.7
Campylobacteriosis	10.7	11.2	10.7	12.1	10.4	11.3	11.5	13.0	11.3	14.7
Chlamydia	138.9	156.1	161.4	170.9	174.3	192.9	197.0	185.3	197.0	233.0
Cryptosporidiosis	0.9	1.5	1.7	2.3	3.9	4.3	3.5	5.1	7.1	3.8
Dengue Fever	NR	NR	NR	NR	NR	NR	NR	0.2	0.5	0.0
Ehrlichia chaffeensis (HME)	0.0	0.0	0.0	0.0	0.3	0.2	0.1	0.1	0.3	0.1
Giardiasis	16.4	14.1	11.8	15.3	14.5	15.0	14.3	16.9	17.0	12.9
Gonorrhea	11.0	17.7	16.3	10.8	10.4	9.0	7.3	10.9	12.3	20.5
Group A Streptococcal Disease (invasive)	1.5	2.1	1.2	1.1	1.4	2.1	2.1	1.6	3.6	3.2
H. Influenzae (invasive)	0.2	0.5	1.1	0.9	1.6	1.0	1.6	1.6	1.0	2.0
Hemolytic uremic syndrome	0.2	0.0	0.2	0.0	0.5	0.1	0.1	0.2	0.1	0.2
Hepatitis A, acute	0.7	1.2	1.2	0.7	0.6	0.4	1.4	0.1	0.5	0.5
Hepatitis B, acute	1.1	0.5	0.8	1.1	2.0	1.4	1.1	1.1	1.0	0.6
Hepatitis B, chronic	NA	NA	NA	NA	NA	10.6	10.8	9.6	7.7	7.9
Hepatitis C, acute	0.0	0.2	0.0	0.0	0.2	0.1	0.2	0.2	0.2	0.9
HIV Infection	3.0	4.2	3.5	4.4	4.3	3.9	3.5	4.3	4.3	4.1
Legionellosis	0.5	0.2	0.1	0.5	0.8	0.7	0.8	0.8	0.9	1.4
Listeriosis	0.4	0.5	0.6	0.2	0.5	0.4	0.4	0.3	0.1	0.3
Lyme disease	16.7	13.4	17.1	18.6	25.6	40.2	69.1	74.0	57.2	75.7
Malaria	0.5	0.4	0.5	0.4	0.3	0.6	0.1	0.2	0.5	0.5
Meningococcal disease	0.7	0.1	0.9	0.2	0.7	0.6	0.5	0.3	0.4	0.4
MRSA, invasive	NR	NR	NR	NR	NR	NR	3.6	9.1	6.9	9.1
Mumps	0.0	0.0	0.0	0.2	0.0	1.8	0.4	0.5	0.2	0.2
Pertussis	1.6	7.0	14.8	4.2	13.2	6.3	3.7	6.1	4.0	15.4
Rabies, animal	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Salmonellosis	11.3	10.8	8.2	12.4	12.2	10.5	12.1	9.2	10.1	10.1
Shiga toxin producing *E. coli*	3.8	1.2	1.4	2.2	3.7	3.1	2.0	1.4	1.6	2.1
Shigellosis	0.8	0.5	1.0	1.1	0.8	1.1	1.5	0.4	0.6	2.4
Streptococcus pneumoniae, invasive	NA	NA	NA	NA	NA	NA	NA	NA	9.9	10.2
Streptococcus pneumoniae (drug resistant invasive)	NR	0.0	0.3	0.6	0.9	1.0	1.4	1.7	2.3	2.4
Syphilis (early)	0.2	1.2	0.2	0.2	1.2	0.7	1.5	1.1	2.9	1.5
Tuberculosis	1.8	1.8	1.5	1.3	1.2	1.4	0.7	0.7	0.6	0.7
Varicella (Chickenpox)	61.1	77.4	27.6	24.1	18.0	27.8	20.4	17.8	18.8	17.0
Vibriosis	0.3	0.2	0.3	0.2	0.4	0.0	0.2	0.3	0.4	0.3

*Counts may change from year to year.
NR = not reportable
NA = not available

Reportable Diseases with Historically Small Numbers of Cases, Maine, 2002 - 2011

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	**10 year total**
Anthrax	0	0	0	0	0	0	0	0	0	0	**0**
Botulism, foodborne	2	0	1	0	0	0	0	0	0	0	**3**
Brucellosis	0	0	0	0	0	0	0	0	2	0	**2**
Creutzfeld-Jacob disease (<55 yo)	NR	0	0	0	0	0	0	1	0	0	**1**
Cyclosporiasis	0	0	1	0	0	0	0	0	1	0	**2**
Diphtheria	0	0	0	0	0	0	0	0	0	0	**0**
Encephalitis, Arboviral	0	0	1	0	0	0	0	0	0	0	**1**
Hantavirus Pulmonary Syndrome	0	0	0	0	0	0	0	0	0	1	**1**
Measles	0	0	0	0	0	0	0	0	0	0	**0**
Plague	0	0	0	0	0	0	0	0	0	0	**0**
Q fever^	0	2	0	2	4	7	0	0	0	2	**17**
Psittacosis	0	0	1	0	0	0	0	0	0	0	**1**
Poliomyelitis	0	0	0	0	0	0	0	0	0	0	**0**
Rubella	0	0	0	0	0	0	0	0	0	0	**0**
Rocky Mountain Spotted Fever^	NR	NR	NR	NR	NR	NR	1	5	2	1	**9**
Severe Acute Respiratory Syndrome (SARS)	NR	0	0	0	0	0	0	0	0	0	**0**
Smallpox	0	0	0	0	0	0	0	0	0	0	**0**
Tetanus	1	0	0	0	0	0	0	0	0	0	**1**
Streptococcal Toxic Shock Syndrome	1	1	1	0	0	1	0	0	21	12	**37**
Toxoplasmosis	0	0	1	0	0	0	0	0	0	0	**1**
Trichinosis	0	0	0	0	0	0	0	0	1	1	**2**
Tularemia	0	0	0	0	0	0	0	0	0	0	**0**
Typhoid Fever	0	0	0	0	1	0	0	0	2	0	**3**
Venezuelan Equine Encephalitis	NR	0	0	0	0	0	0	0	0	0	**0**
West Nile Virus	NR	0	0	0	0	0	0	0	0	0	**0**
Yellow Fever	NR	NR	0	0	0	0	0	0	0	0	**0**

NR=Not reportable, ^Reported cases were probable only in 2011


Counts of Selected Reportable Diseases in Maine and Five Year Median, 2011
2011
5-year median
Campylobacteriosis
Chlamydia (x10)
Cryptosporidiosis
Giardiasis
Gonorrhea
HIV
Lyme Disease (x10)
Pertussis
Rabies, Animal
Salmonellosis
0
50
100
150
200
250
300
350
Number of Reported Cases

Reportable Conditions, Number of Confirmed and Probable Cases and Rate per 100,000 Persons by County, Maine, 2011

	Anaplasmosis		Babesiosis		Campylobacteriosis		Cryptosporidiosis		*Ehrlichia chaffeensis*		Giardiasis	
County	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate
Androscoggin	0	0.0	0	0.0	14	13.0	0	0.0	0	0.0	15	14.0
Aroostook	0	0.0	0	0.0	6	8.4	4	5.6	0	0.0	2	2.8
Cumberland	9	3.2	1	0.4	44	15.6	4	1.4	0	0.0	60	21.2
Franklin	0	0.0	0	0.0	4	8.0	0	0.0	0	0.0	3	9.8
Hancock	1	1.8	0	0.0	4	7.3	2	3.7	0	0.0	4	7.3
Kennebec	2	1.6	0	0.0	23	18.9	4	3.3	0	0.0	14	11.5
Knox	1	2.5	1	2.5	1	2.5	2	5.0	0	0.0	6	15.1
Lincoln	7	20.5	1	2.9	4	11.7	4	11.7	0	0.0	7	20.5
Oxford	0	0.0	0	0.0	9	15.6	0	0.0	0	0.0	8	13.9
Penobscot	0	0.0	0	0.0	25	16.3	13	8.5	0	0.0	11	7.2
Piscataquis	0	0.0	0	0.0	2	11.5	1	5.7	0	0.0	1	5.7
Sagadahoc	3	8.5	0	0.0	6	17.0	3	8.5	0	0.0	9	25.6
Somerset	0	0.0	0	0.0	15	28.8	4	7.7	1	1.9	15	28.8
Waldo	0	0.0	0	0.0	3	7.7	6	15.5	0	0.0	5	12.9
Washington	0	0.0	0	0.0	3	9.2	0	0.0	0	0.0	0	0.0
York	3	1.5	6	3.0	32	16.1	4	2.0	0	0.0	11	5.5
Maine Total	26	2.0	9	0.7	195	14.7	51	3.8	1	0.1	171	12.9

Reportable Conditions, Number of Confirmed and Probable Cases and Rate per 100,000 Persons by County, Maine, 2011

	Haemophilus influenzae, invasive		Hemolytic uremic syndrome		Hepatitis A		Hepatitis B, acute		Hepatitis B, chronic		Legionellosis	
County	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate
Androscoggin	4	3.7	1	0.9	0	0.0	1	0.9	7	6.5	2	1.9
Aroostook	0	0.0	0	0.0	0	0.0	1	1.4	3	4.2	0	0.0
Cumberland	5	1.8	0	0.0	1	0.4	0	0.0	54	19.1	6	2.1
Franklin	0	0.0	0	0.0	0	0.0	0	0.0	1	3.3	1	3.3
Hancock	1	1.8	0	0.0	0	0.0	1	1.8	2	3.7	0	0.0
Kennebec	0	0.0	1	0.8	0	0.0	1	0.8	10	8.2	1	0.8
Knox	0	0.0	0	0.0	1	2.5	0	0.0	3	7.6	0	0.0
Lincoln	3	8.8	0	0.0	4	11.7	0	0.0	2	5.8	1	2.9
Oxford	1	1.7	0	0.0	0	0.0	1	1.7	1	1.7	0	0.0
Penobscot	5	3.3	0	0.0	0	0.0	1	0.7	5	3.3	1	0.7
Piscataquis	1	5.7	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Sagadahoc	0	0.0	0	0.0	0	0.0	1	2.8	1	2.8	0	0.0
Somerset	2	3.8	0	0.0	0	0.0	1	1.9	2	3.8	3	5.8
Waldo	1	2.6	0	0.0	0	0.0	0	0.0	3	7.7	0	0.0
Washington	0	0.0	0	0.0	0	0.0	0	0.0	2	6.1	0	0.0
York	3	1.5	0	0.0	0	0.0	0	0.0	9	4.5	3	1.5
Maine Total	26	2.0	2	0.2	6	0.5	8	0.6	105	7.9	18	1.4

Reportable Conditions, Number of Confirmed and Probable Cases and Rate per 100,000 Persons by County, Maine, 2011

	Listeriosis		Lyme Disease		Malaria		Meningococcal invasive disease		MRSA, invasive		Mumps	
County	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate
Androscoggin	0	0.0	58	54.0	0	0.0	0	0.0	5	4.7	0	0.0
Aroostook	0	0.0	3	4.2	0	0.0	0	0.0	4	5.6	0	0.0
Cumberland	0	0.0	275	97.4	2	0.7	1	0.4	30	10.6	2	0.7
Franklin	0	0.0	6	19.5	0	0.0	0	0.0	0	0.0	0	0.0
Hancock	0	0.0	43	78.8	0	0.0	0	0.0	7	12.8	0	0.0
Kennebec	1	0.8	129	105.8	1	0.8	1	0.8	11	9.0	0	0.0
Knox	0	0.0	103	259.4	0	0.0	0	0.0	6	15.1	0	0.0
Lincoln	0	0.0	53	154.9	0	0.0	0	0.0	4	11.7	0	0.0
Oxford	0	0.0	28	48.5	0	0.0	0	0.0	5	8.7	0	0.0
Penobscot	0	0.0	11	7.2	0	0.0	1	0.7	8	5.2	0	0.0
Piscataquis	0	0.0	6	34.4	0	0.0	0	0.0	3	17.2	0	0.0
Sagadahoc	0	0.0	47	133.5	0	0.0	0	0.0	4	11.4	0	0.0
Somerset	1	1.9	9	17.3	0	0.0	0	0.0	10	19.2	0	0.0
Waldo	1	2.6	25	64.5	0	0.0	1	2.6	5	12.9	0	0.0
Washington	0	0.0	12	36.8	1	3.1	0	0.0	2	6.1	0	0.0
York	1	0.5	198	100.4	2	1.0	1	0.5	17	8.6	0	0.0
Maine Total	4	0.3	1006	75.7	6	0.5	5	0.4	121	9.1	2	0.2

Reportable Conditions, Number of Confirmed and Probable Cases and Rate per 100,000 Persons by County, Maine, 2011

	Pertussis		Rabies, animal		Salmonellosis		Shiga toxin producing *E. coli*		Shigellosis	
County	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	No.
Androscoggin	1	0.9	4		17	15.8	1	0.9	24	22.3
Aroostook	0	0.0	0		6	8.4	1	1.4	0	0.0
Cumberland	12	4.2	20		28	9.9	5	1.8	6	2.1
Franklin	1	3.3	4		5	16.3	2	6.5	0	0.0
Hancock	10	18.3	0		1	1.8	0	0.0	1	1.8
Kennebec	6	4.9	5		11	9.0	2	1.6	0	0.0
Knox	1	2.5	4		9	22.7	1	2.5	0	0.0
Lincoln	1	2.9	3		4	11.7	0	0.0	0	0.0
Oxford	3	5.2	8		6	10.4	3	5.2	0	0.0
Penobscot	137	89.1	3		5	3.3	3	2.0	0	0.0
Piscataquis	18	103.3	0		1	5.7	1	5.7	0	0.0
Sagadahoc	2	5.7	3		1	2.8	3	8.5	0	0.0
Somerset	2	3.8	4		3	5.8	2	3.8	0	0.0
Waldo	5	12.9	4		10	25.8	1	2.6	0	0.0
Washington	1	3.1	0		1	3.1	0	0.0	0	0.0
York	5	2.5	4		26	13.1	3	1.5	1	0.5
Maine Total	205	15.4	66		134	10.1	28	2.1	32	2.4

Reportable Conditions, Number of Confirmed and Probable Cases and Rate per 100,000 Persons by County, Maine, 2011

	Streptococcus, invasive Group A		*Streptococcus pneumoniae*, invasive		Tuberculosis		Varicella (Chickenpox)		Vibriosis	
County	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate
Androscoggin	5	4.7	16	14.9	2	1.9	16	14.9	0	0.0
Aroostook	3	4.2	9	12.6	0	0.0	3	4.2	0	0.0
Cumberland	10	3.5	34	12.0	2	0.7	51	18.1	0	0.0
Franklin	0	0.0	1	3.3	1	3.3	4	13.0	0	0.0
Hancock	0	0.0	0	0.0	0	0.0	36	66.0	0	0.0
Kennebec	8	6.6	23	18.9	2	1.6	10	8.2	0	0.0
Knox	0	0.0	2	5.0	0	0.0	9	22.7	1	2.5
Lincoln	1	2.9	5	14.6	0	0.0	3	8.8	2	5.8
Oxford	5	8.7	5	8.7	0	0.0	3	5.2	0	0.0
Penobscot	5	3.3	10	6.5	0	0.0	30	19.5	0	0.0
Piscataquis	0	0.0	0	0.0	0	0.0	6	34.4	0	0.0
Sagadahoc	0	0.0	5	14.2	0	0.0	3	8.5	0	0.0
Somerset	3	5.8	6	11.5	0	0.0	9	17.3	0	0.0
Waldo	0	0.0	3	7.7	1	2.6	12	31.0	0	0.0
Washington	0	0.0	2	6.1	0	0.0	5	15.3	0	0.0
York	3	1.5	15	7.6	1	0.5	26	13.1	1	0.5
Maine Total	43	3.2	136	10.2	9	0.7	226	17.0	4	0.3

Reportable HIV/STDs, Number of Cases and Rate per 100,000 Persons by County, Maine, 2011

	Chlamydia		Gonorrhea		Syphilis, Primary and Secondary*		HIV	
County	No.	Rate	No.	Rate	No.	Rate	No.	Rate
Androscoggin	366	340.8	92	85.7	2	1.9	2	1.9
Aroostook	119	166.5	6	8.4	0	0.0	4	5.6
Cumberland	748	264.9	107	37.9	6	2.1	26	9.2
Franklin	70	227.7	0	0.0	0	0.0	2	6.5
Hancock	95	174.1	1	1.8	2	3.7	1	1.8
Kennebec	351	287.9	5	4.1	1	0.8	3	2.5
Knox	74	186.4	3	7.6	1	2.5	1	2.5
Lincoln	45	131.5	2	5.8	0	0.0	0	0.0
Oxford	93	161.2	6	10.4	0	0.0	0	0.0
Penobscot	288	187.3	21	13.7	1	0.7	3	2.0
Piscataquis	24	137.8	0	0.0	0	0.0	0	0.0
Sagadahoc	112	318.1	4	11.4	1	2.8	1	2.8
Somerset	106	203.7	1	1.9	0	0.0	2	3.8
Waldo	49	126.5	1	2.6	0	0.0	0	0.0
Washington	83	254.3	8	24.5	0	0.0	0	0.0
York	471	237.6	15	7.6	6	3.0	9	4.5
Maine Total	3094	233.0	272	20.5	20	1.5	54	4.1

Reportable Conditions, Number of Confirmed and Probable Cases and Rate per 100,000 Persons by District, Maine, 2011

Condition	Aroostook		Central		Cumberland		Downeast		Mid Coast	
	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate
Anaplasmosis	0	0.0	2	1.1	9	3.2	1	1.1	11	7.4
Babesiosis	0	0.0	0	0.0	1	0.4	0	0.0	2	1.4
Campylobacteriosis	6	8.4	38	21.8	44	15.6	7	8.0	14	9.5
Chlamydia	119	166.5	457	262.7	748	264.9	178	204.1	280	189.3
Cryptosporidosis	4	5.6	8	4.6	4	1.4	2	2.3	15	10.1
Ehrlichia chaffeensis	0	0.0	1	0.6	0	0.0	0	0.0	0	0.0
Giardiasis	2	2.8	29	16.7	60	21.2	4	4.6	27	18.3
Gonorrhea	6	8.3	6	3.4	107	38.0	9	10.3	10	6.7
Haemophilus influenzae, invasive	0	0.0	2	1.1	5	1.8	1	1.1	4	2.7
Hemolytic uremic syndrome	0	0.0	1	0.6	0	0.0	0	0.0	0	0.0
HIV	4	5.6	5	2.9	26	9.2	1	1.1	2	1.3
Hepatitis A	0	0.0	0	0.0	1	0.4	0	0.0	5	3.4
Hepatitis B, acute	1	1.4	2	1.1	0	0.0	1	1.1	1	0.7
Hepatitis B, chronic	3	4.2	12	6.9	54	19.2	4	4.6	9	6.1
Legionellosis	0	0.0	4	2.3	6	2.1	0	0.0	1	0.7
Listeriosis	0	0.0	2	1.1	0	0.0	0	0.0	1	0.7

Reportable Conditions, Number of Confirmed and Probable Cases and Rate per 100,000 Persons by District, Maine, 2011

Condition	Penquis		Western		York		State	
	No.	Rate	No.	Rate	No.	Rate	No.	Rate
Anaplasmosis	0	0.0	0	0.0	3	1.5	26	2.0
Babesiosis	0	0.0	0	0.0	6	3.0	9	0.7
Campylobacteriosis	27	15.8	27	13.8	32	7.6	195	14.7
Chlamydia	312	182.2	529	270.1	471	238.9	3094	233.0
Cryptosporidosis	14	8.2	0	0.0	4	2.0	51	3.8
Ehrlichia chaffeensis	0	0.0	0	0.0	0	0.0	1	0.1
Giardiasis	12	7.0	26	13.3	11	5.5	171	12.9
Gonorrhea	21	12.2	98	49.9	15	7.6	272	20.5
Haemophilus influenzae, invasvie	6	3.5	5	2.6	3	1.5	26	2.0
Hemolytic uremic syndrome	0	0.0	1	0.5	0	0.0	2	0.2
HIV	3	1.7	4	2.0	9	4.5	54	4.1
Hepatitis A	0	0.0	0	0.0	0	0.0	6	0.5
Hepatitis B, acute	1	0.6	2	1.0	0	0.0	8	0.6
Hepatitis B, chronic	5	2.9	9	4.6	9	4.6	105	7.9
Legionellosis	1	0.6	3	1.5	3	1.5	18	1.4
Listeriosis	0	0.0	0	0.0	1	0.5	4	0.3

Reportable Conditions, Number of Confirmed and Probable Cases and Rate per 100,000 Persons by District, Maine, 2011

Condition	Aroostook		Central		Cumberland		Downeast		Mid Coast	
	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate
Lyme Disease	3	4.2	138	79.3	275	97.4	55	63.1	228	154.2
Meningococcal invasive disease	0	0.0	1	0.6	1	0.4	0	0.0	1	0.7
MRSA, invasive	4	5.6	21	12.1	30	10.6	9	10.3	19	12.8
Mumps	0	0.0	0	0.0	2	0.7	0	0.0	0	0.0
Pertussis	0	0.0	8	4.6	12	4.2	11	12.6	9	6.1
Rabies, animal	0		9		20		0		14	
Salmonellosis	6	8.3	14	8.0	28	9.9	2	2.3	24	16.2
Shiga toxin producing E. coli	1	1.4	4	2.3	5	1.8	0	0.0	5	3.4
Shigellosis	0	0.0	0	0.0	6	2.1	1	1.1	0	0.0
Streptococcus, invasive Group A	3	4.2	11	6.3	10	3.5	0	0.0	1	0.7
Streptococcus pneumoniae, invasive	9	12.6	29	16.7	34	12.0	2	2.3	15	10.1
Syphilis	0	0.0	1	0.6	6	2.1	2	2.3	2	1.4
Tuberculosis	0	0.0	2	1.1	2	0.7	0	0.0	1	0.7
Varicella (chickenpox)	3	4.2	19	10.9	51	18.1	41	47.0	27	18.3
Vibriosis	0	0.0	0	0.0	0	0.0	0	0.0	3	2.0

Reportable Conditions, Number of Confirmed and Probable Cases and Rate per 100,000 Persons by District, Maine, 2011

Condition	Penquis		Western		York		State	
	No.	Rate	No.	Rate	No.	Rate	No.	Rate
Lyme Disease	17	9.9	92	47.0	198	99.9	1006	75.7
Meningococcal invasive disease	1	0.6	0	0.0	1	0.5	5	0.4
MRSA, invasive	11	6.4	10	5.1	17	8.6	121	9.1
Mumps	0	0.0	0	0.0	0	0.0	2	0.2
Pertussis	155	90.5	5	2.6	5	2.5	205	15.4
Rabies, animal	3		16		4		66	
Salmonellosis	6	3.5	28	14.3	26	13.1	134	10.1
Shiga toxin producing *E. coli*	4	2.3	6	3.1	3	1.5	28	2.1
Shigellosis	0	0.0	24	12.3	1	0.5	32	2.4
Streptococcus, invasive Group A	5	2.9	10	5.1	3	1.5	43	3.2
Streptococcus pneumoniae, invasive	10	5.8	22	11.2	15	7.6	136	10.2
Syphilis	1	0.6	2	1.0	6	3.0	20	1.5
Tuberculosis	0	0.0	3	1.5	1	0.5	9	0.7
Varicella	36	21.0	23	11.7	26	13.1	226	17.0
Vibriosis	0	0.0	0	0.0	1	0.5	4	0.3

Anaplasmosis

2011 Case Total	**26**
Maine Rate	**2.0 per 100,000**
U.S. rate (2010)	**0.6 per 100,000**

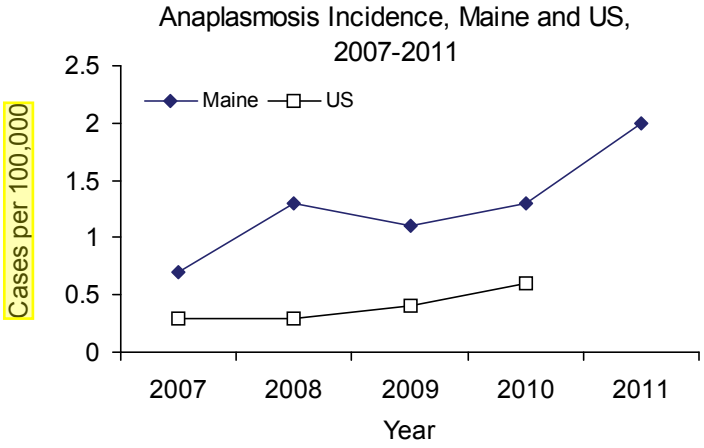
Anaplasmosis is a disease caused by the bacterium *Anaplasma phagocytophilium*. Anaplasmosis was previously known as human granulocytic ehrlichiosis (HGE) or human granulocytic anaplasmosis (HGA).

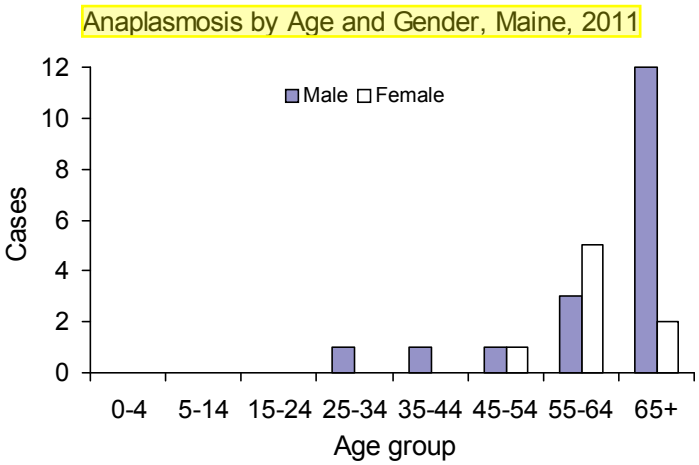
Signs and symptoms of anaplasmosis include: fever, headache, malaise, and body aches. Anaplasmosis is transmitted to a person by the bite of an infected deer tick (*Ixodes scapularis*), one of the most common ticks in Maine.

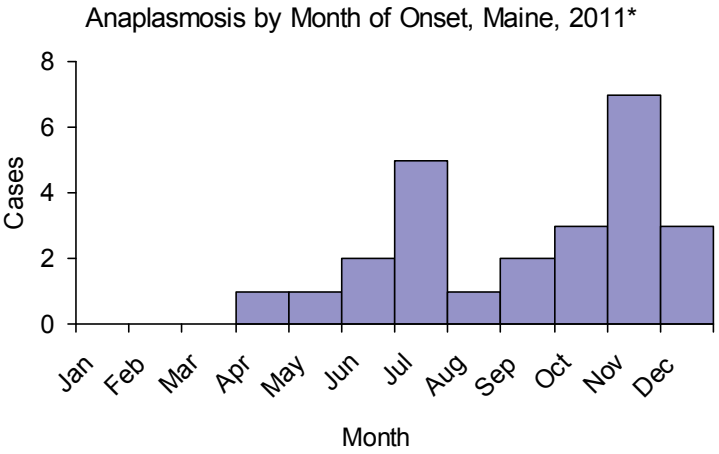
- Case total of 26 represents an increase from 17 cases in 2010
- The 2006-2010 median number of cases per year was 16
- Median age was 66 years
- Age range was 30 to 92 years
- Cases were 31% female and 69% male
- Greatest number of cases occurred during the summer and winter months

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 www.mmcri.org/lyme.







*onset date missing for one case

Babesiosis

2011 Case Total	**9**
Maine Rate	**0.7 per 100,000**
U.S. rate (2010)	**Not reportable**

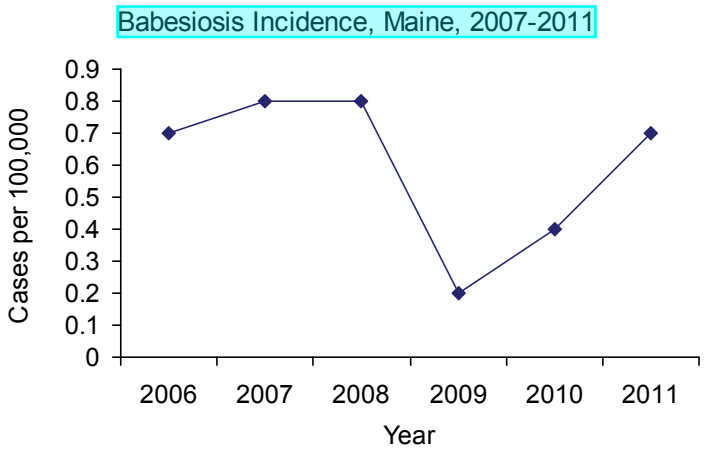
Babesiosis is caused by a parasite that may be carried by ticks. Many individuals that get the disease do not have symptoms. Serious symptoms can occur, especially in persons who are immunosuppressed, those without a spleen, or people who are co-infected with Lyme disease. Babesiosis may also occur after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

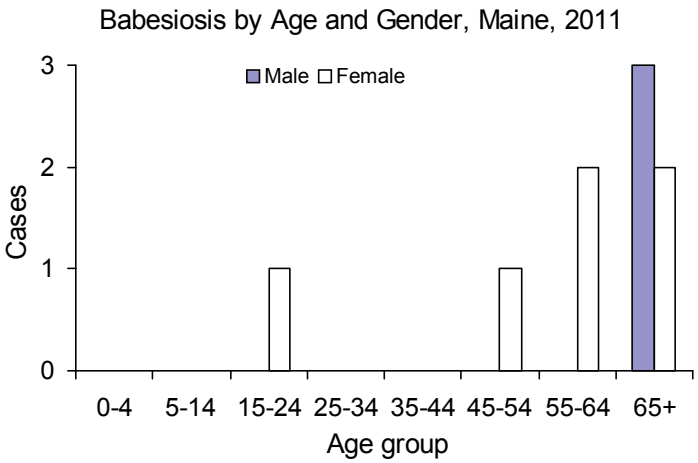
Common symptoms include extreme fatigue, aches, fever, chills, sweating, dark urine, and possibly anemia.

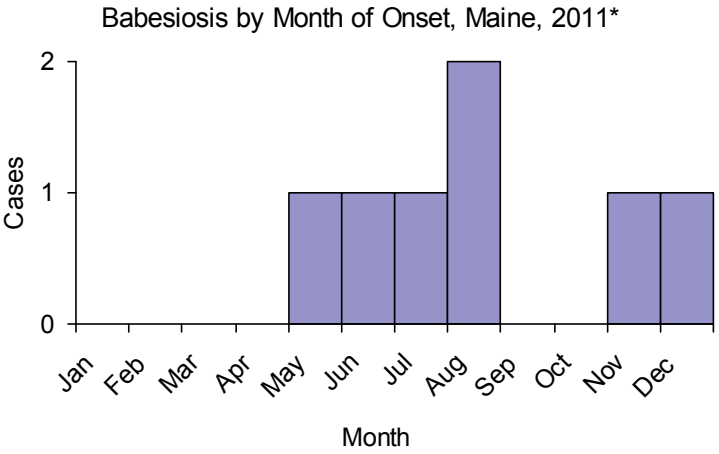
- Case total of 9 represents an increase from 5 cases in 2010
- The 2006-2010 median number of cases was 9
- Median age was 66 years
- Age range was 23 to 83 years
- Cases were 67% female and 33% male
- Greatest number of cases occurred during the summer months
- One death was reported

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 www.mmcri.org/lyme.







*onset date missing for two cases

Campylobacteriosis

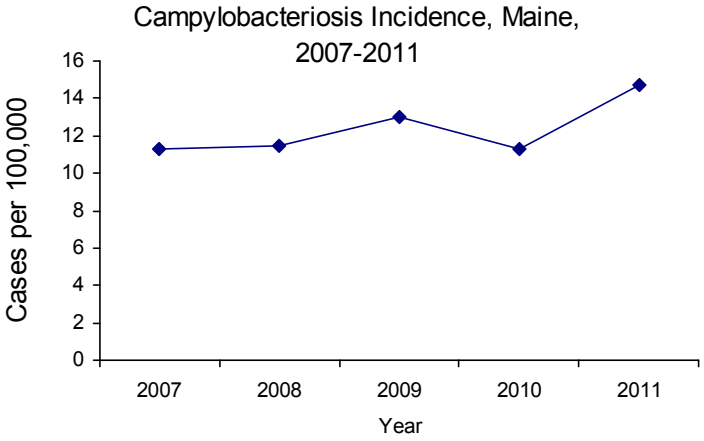
2011 Case Total	**195**
Maine Rate	**14.7 per 100,000**
U.S. rate (2010)	**Not reportable**

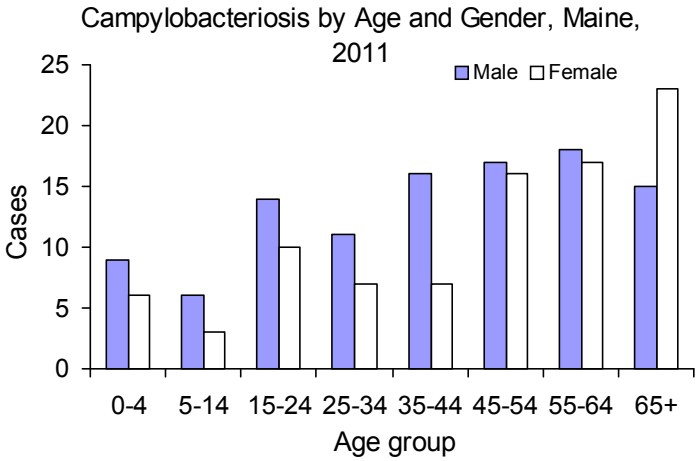
Campylobacteriosis is one of the most common infectious diseases causing diarrhea in the United States. Symptoms include diarrhea, cramping, abdominal pain and fever. Most people recover within 5 to 10 days.

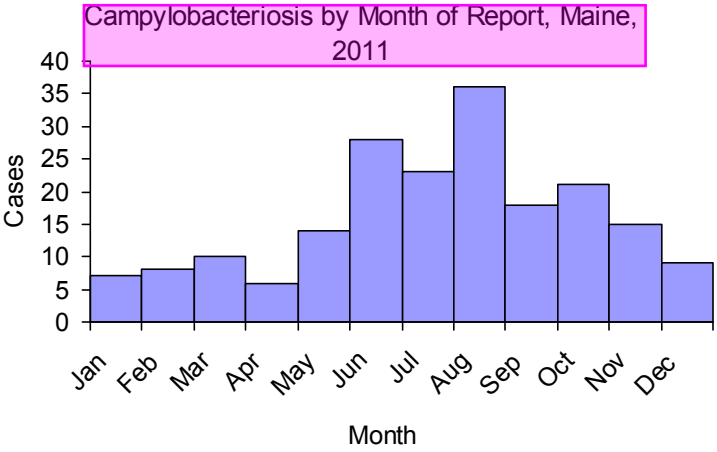
Campylobacteriosis is associated with handling raw poultry or eating undercooked poultry meat, consuming unpasteurized milk and other dairy products and from exposure to contaminated foods. Raw foods, such as vegetables or salad, can be contaminated if the same cutting board or utensils are used for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

- Case total of 195 represents an increase from 148 cases in 2010
- The 2006-2010 median number of cases was 149
- Median age was 48 years
- Age range was 2 months to 89 years
- Cases were 46% female and 54% male
- Highest rates in Somerset, Kennebec, Penobscot and York 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.







Chlamydia

2011 Case Total	**3,094**
Maine Rate	**233.0 per 100,000**
U.S. rate (2010)	**426.0 per 100,000**

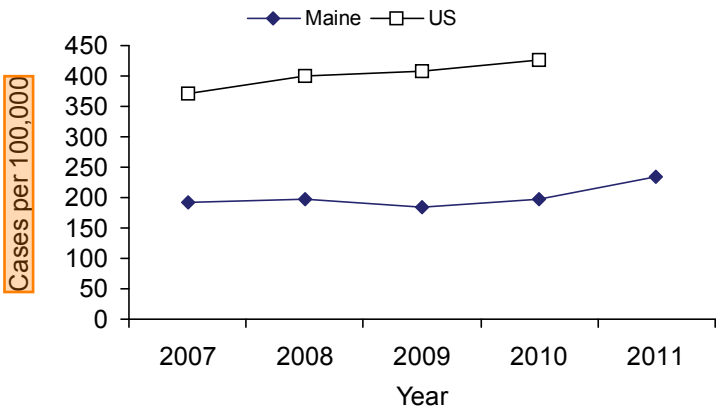
Chlamydia is a sexually transmitted disease (STD) caused by the bacterium *Chlamydia trachomatis*. Chlamydia is known as a "silent" disease, as three quarters (75%) of women and half (50%) of men infected with chlamydia will have no symptoms. Common symptoms for women include vaginal discharge or a burning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

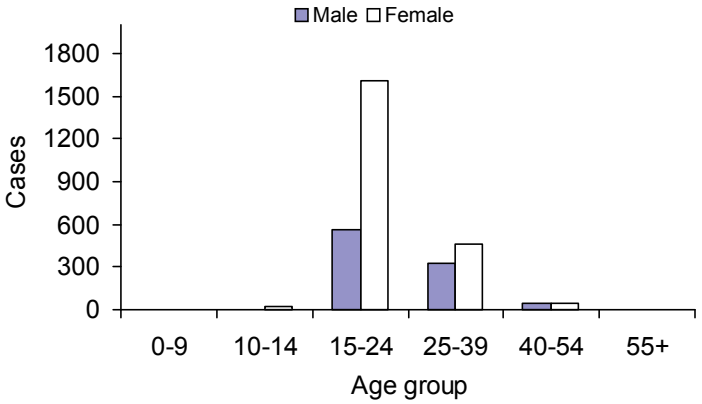
- Chlamydia is the most frequently reported STD in Maine
- In 2011 three women were diagnosed for every one man
- 70% of infections were in persons 15-24 years old
- Cases were 69% female and 31% male

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 the Infertility Prevention Project, a federal CDC sponsored initiative, that targets testing and treatment for females 15-24 years old and their partners. Currently free testing for females 15-24 is available at Family Planning and Planned Parenthood sites, and at the three STD clinics (Bangor, Portland and Lewiston).

Chlamydia Incidence, Maine and US, 2007-2011

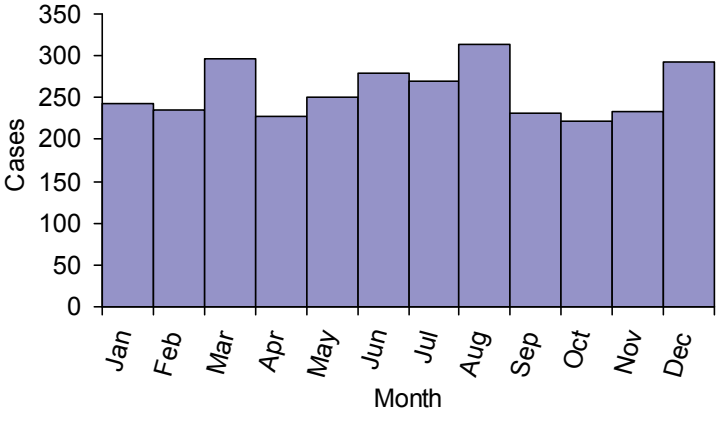


Chlamydia by Age* and Gender, Maine, 2011



*unknown age for 10 cases.

Chlamydia by Month, Maine, 2011



Cryptosporidiosis

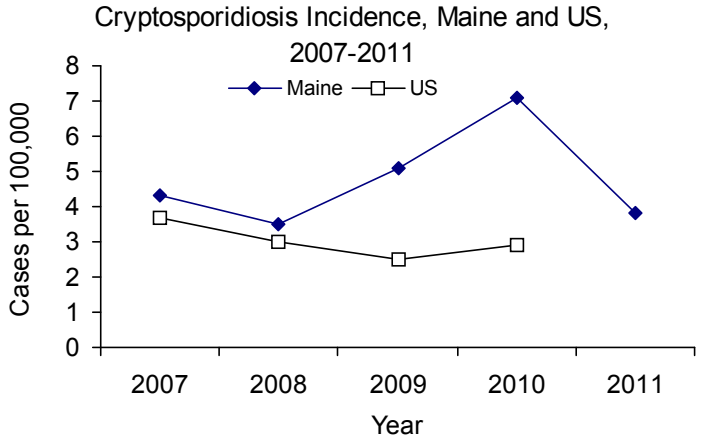
2011 Case Total	**51**
Maine Rate	**3.8 per 100,000**
U.S. rate (2010)	**2.9 per 100,000**

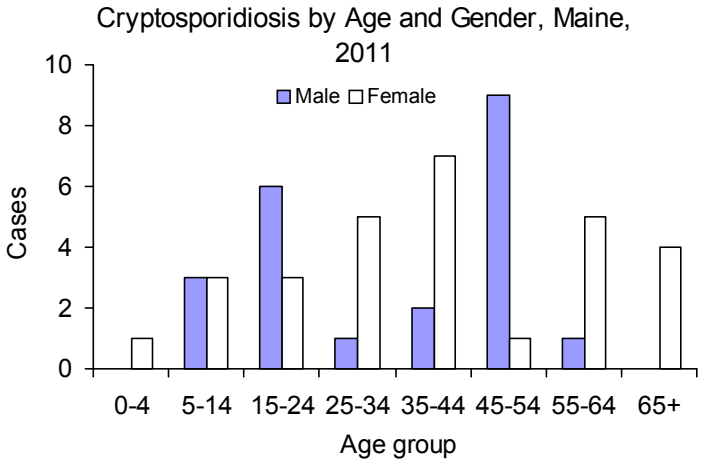
Cryptosporidiosis is an infection most frequently associated with contaminated water or contact with infected animals. The disease is caused by a parasite that lives in the intestines of animals and infected humans. Feces containing the parasite may contaminate the ground or water sources. The parasite 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.

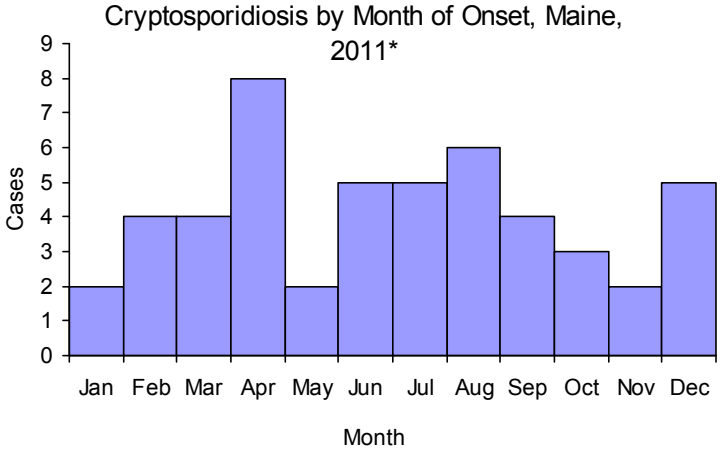
Symptoms include diarrhea, abdominal cramping, malaise and vomiting.

- Case total of 51 represents a decrease from 93 cases in 2010
- The 2006-2010 median number of cases per year was 56
- Median age was 39 years
- Age range was 2 years to 87 years
- Cases were 57% female and 43% male
- Highest incidence was in Waldo, Lincoln and Sagadahoc 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

Ehrlichiosis

2011 Case Total	**1**
Maine Rate	**0.1 per 100,000**
U.S. rate (2010)	**0.2 per 100,000**

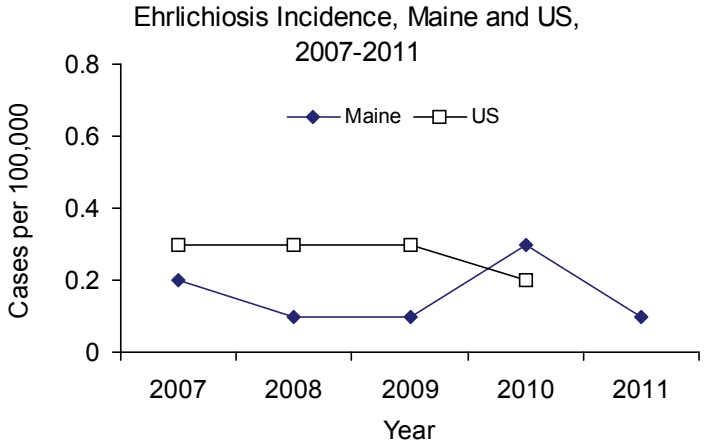
Ehrlichiosis is a disease caused by the bacterium *Ehrlichia chaffeensis* which infects white blood cells (monocytes). *Ehrlichia chaffeensis* was previously known as human monocytic ehrlichiosis (HME).

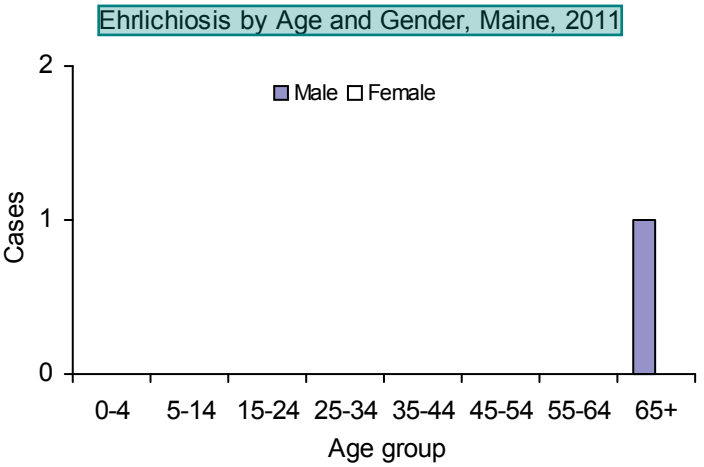
Signs and symptoms of ehrlichiosis include: fever, headache, nausea, and body aches. Ehrlichiosis is transmitted to a person through the bite of an infected lone star tick (*Amblyomma americanum*), an uncommon tick in Maine.

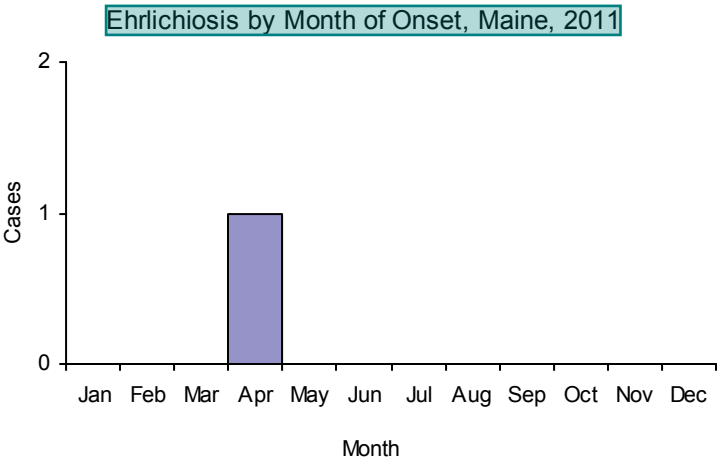
- Case total of 1 confirmed case represents a decrease from 4 probable cases in 2010
- The 2006-2010 median number of cases per year was 3

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 www.mmcri.org/lyme.







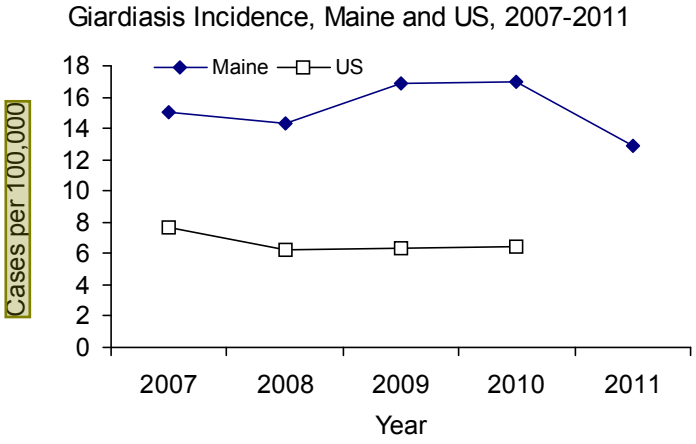
Giardiasis

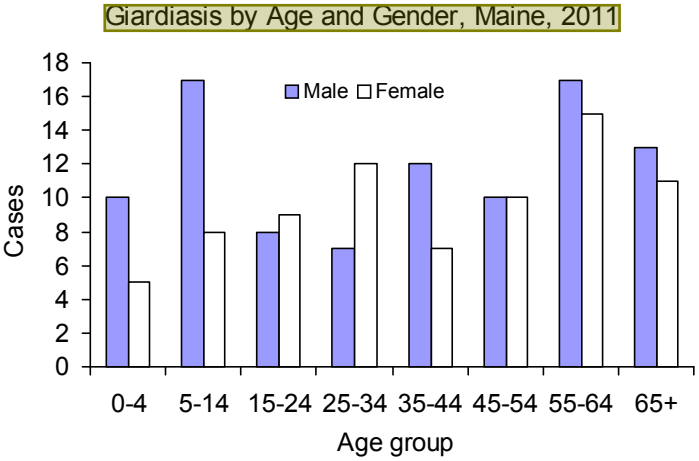
2011 Case Total	**171**
Maine Rate	**12.9 per 100,000**
U.S. rate (2010)	**6.4 per 100,000**

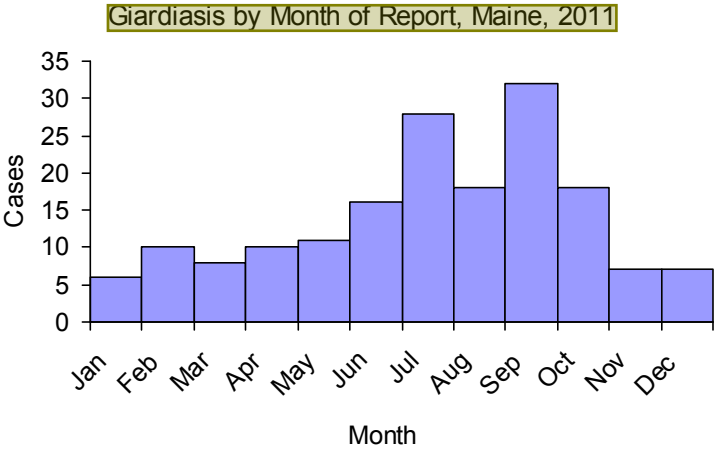
Giardiasis is sometimes known as "beaver fever" because beavers (as well as dogs, cats, horses and cows) are major reservoirs for the parasite (*Giardia lamblia*) that causes the infection. The parasite lives in the intestines of infected humans and animals and when expelled through the feces can contaminate water and surfaces. Animal feces can infect ponds and streams and if hikers or others drink water in the wild 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.

- Case total of 171 represents a decrease from 223 cases in 2010
- The 2006-2010 median number of cases per year was 197
- Median age was 40 years
- Age range was 1 year to 88 years
- Cases were 45% female and 55% male
- Highest incidence was in Somerset, Sagadahoc, Cumberland and Lincoln 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

2011 Case Total	**272**
Maine Rate	**20.5 per 100,000**
U.S. rate (2010)	**100.8 per 100,000**

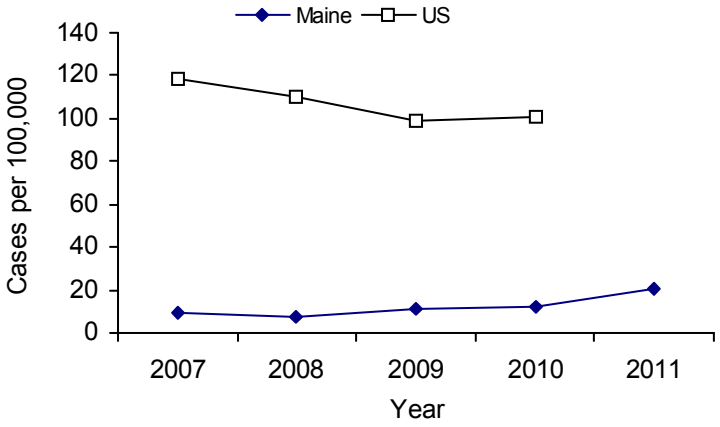
Gonorrhea is a sexually transmitted disease (STD) caused by the bacterium *Neisseria gonorrhoeae* that grows and multiplies in warm, moist areas (mucous membranes). Gonorrhea can be spread through contact with the vagina, penis, mouth or anus. Gonorrhea can also spread from a mother to her baby during 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, causing 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.

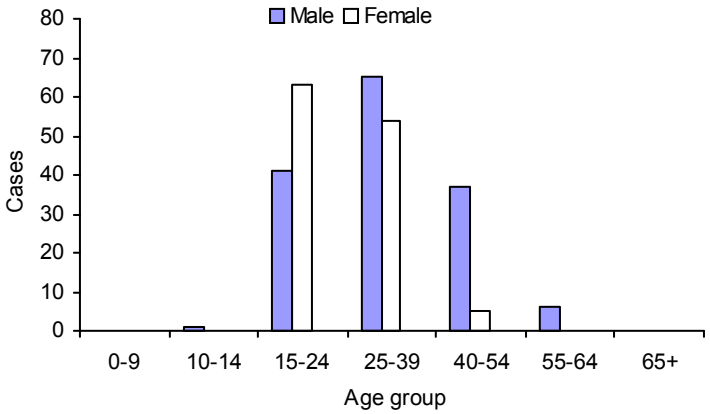
- Case total of 272 represents an increase from 162 cases in 2010
- Highest incidence was in the 15-24 year age group, with a total of 38% of cases
- Cases were 45% female and 55% male

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 sponsored testing through the Infertility Prevention Project uses a combination gonorrhea and chlamydia test targeting females 15-24 years old.

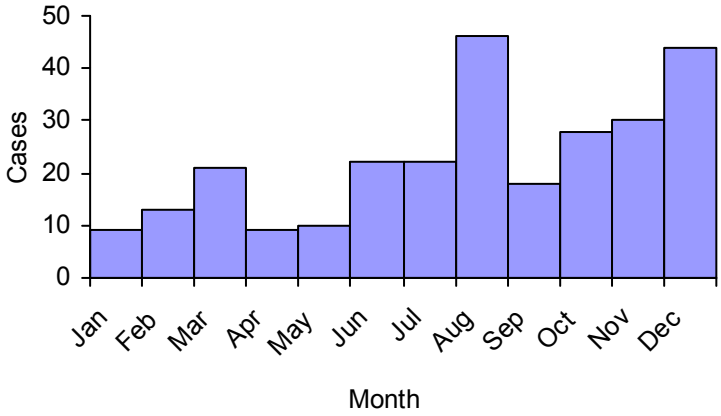
Gonorrhea Incidence, Maine and US, 2007-2011



Gonorrhea by Age and Gender, Maine, 2011



Gonorrhea by Month, Maine, 2011



Group A Streptococcal Disease

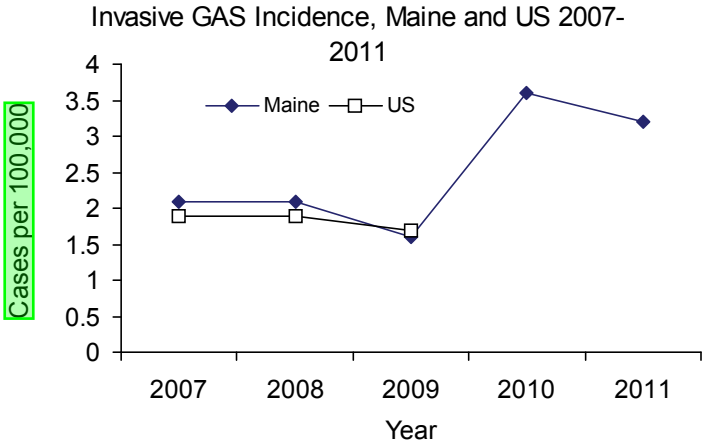
2011 Case Total	**43**
Maine Rate	**3.2 per 100,000**
U.S. rate (2010)	**Not reportable**

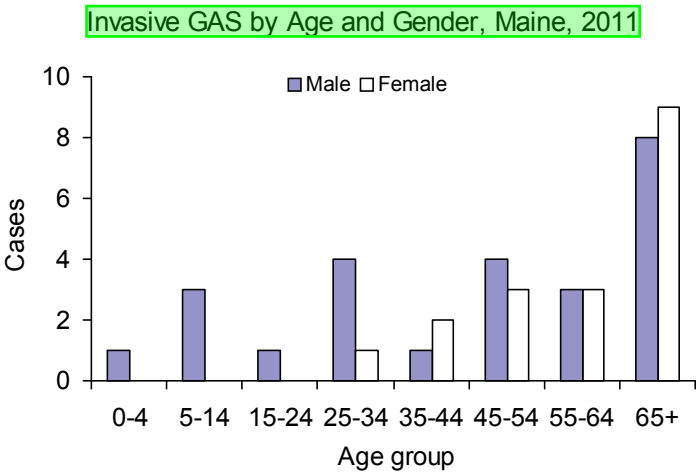
Group A *Streptococcus* (GAS) is a bacterium often found in the throat and on the skin that can cause either no symptoms (colonization) or mild symptoms such as pharyngitis (strep throat), cellulitis (soft tissue infection) or impetigo (skin dermatitis). When the bacteria enters deeper tissues and the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

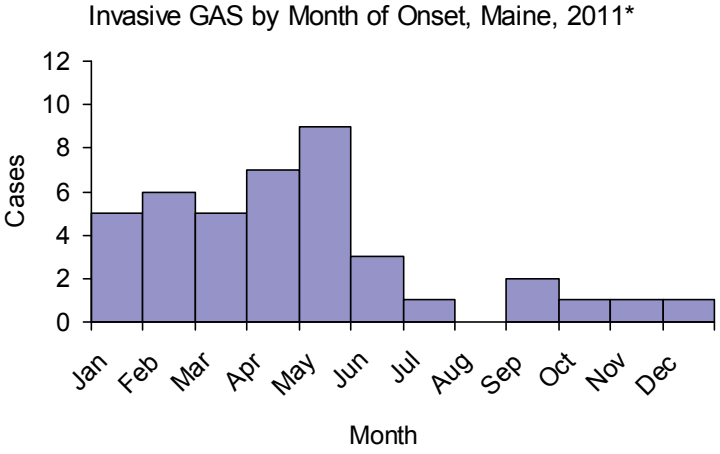
Necrotizing fasciitis, a condition that progressively destroys skin, fat and muscles, can be caused by GAS. Another example of an invasive GAS disease is Streptococcal Toxic Shock Syndrome (STSS), a rapid drop in blood pressure that causes organ failure.

- Case total of 43 represents a decrease from 47 cases in 2010
- The 2006-2010 median number of cases per year was 28
- Median age was 56 years
- Age range was 8 months to 96 years
- Cases were 42% female and 58% male
- 12 (28%) cases were also diagnosed with STSS; 4 of these 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).







*onset date missing for two cases

Haemophilus influenzae

2011 Case Total	**26**
Maine Rate	**2.0 per 100,000**
U.S. rate (2010)	**1.0 per 100,000**

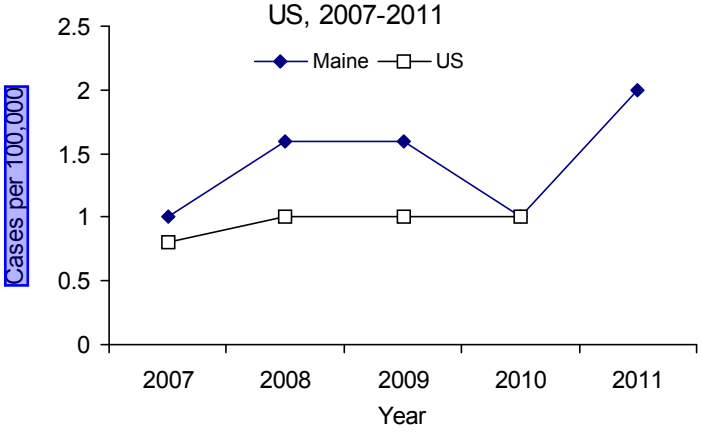
Haemophilus influenzae disease is caused by the *Haemophilus influenzae* bacterium. A specific type called *H. influenzae* serotype B (Hib), was once the most common cause of bacterial meningitis in children. Due to widespread use of Hib vaccine, few cases in children less than 5 years old are reported 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.

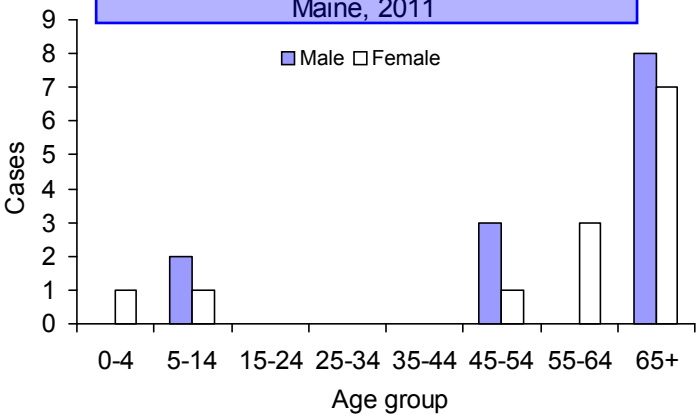
- Case total of 26 represents an increase from 13 cases in 2010
- The 2006-2010 median number of cases per year was 21
- Median age was 66 years
- Age range was 2 years to 97 years
- Cases were 50% female and 50% male
- No cases of Hib (type b) in children aged < 15 years were reported

Haemophilus influenzae serotype b (Hib) may be prevented in children through vaccination. Vaccination is recommended for all children at ages 2, 4 and 6 months or at 2 and 4 months depending on the type of vaccine available. An additional booster dose is given at 12-15 months of age with either type of vaccine.

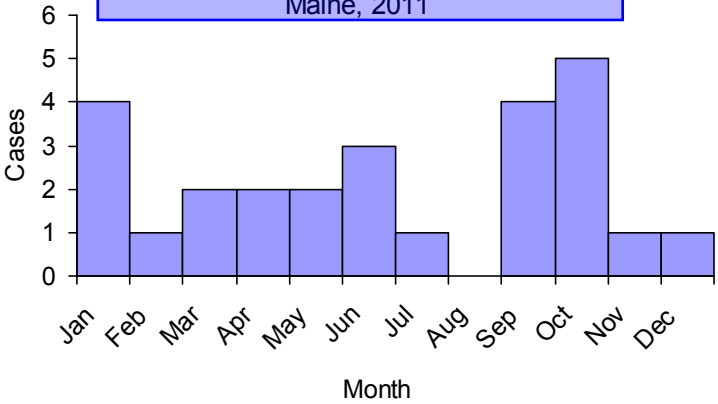
Haemophilus influenzae Incidence, Maine and US, 2007-2011



Haemophilus influenzae by Age and Gender, Maine, 2011



Haemophilus influenzae by Month of Onset, Maine, 2011



Hepatitis A

2011 Case Total	**6**
Maine Rate	**0.5 per 100,000**
U.S. rate (2010)	**0.5 per 100,000**

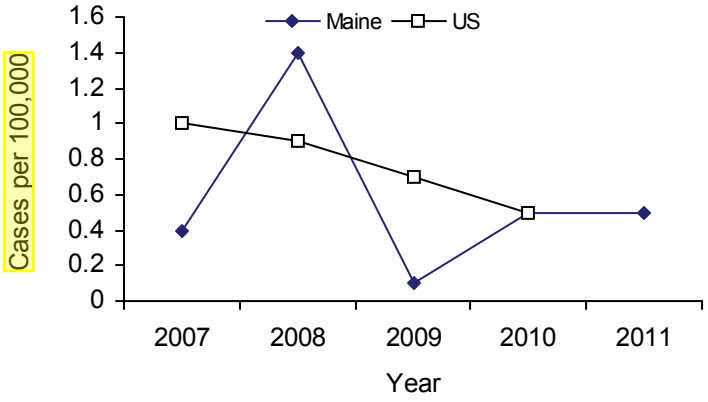
Hepatitis A is a liver disease caused by hepatitis A virus (HAV). The virus is spread from person to person by fecal-oral transmission that involves putting something in the mouth (such as food or water) that has been contaminated by a person infected with hepatitis A. Poor handwashing by persons with infection 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. Upon recovery, a person is immune to hepatitis A.

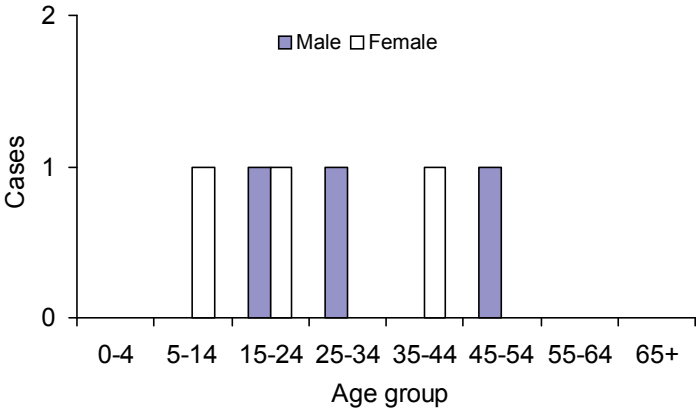
- Case total of 6 represents a decrease from 7 cases in 2010
- The 2006-2010 median number of cases per year was 7
- Median age was 29 years
- Age range was 8 to 51 years

Washing hands after using the bathroom, changing a diaper, or before preparing or eating food can help prevent infection. Hepatitis A can 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 get 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.

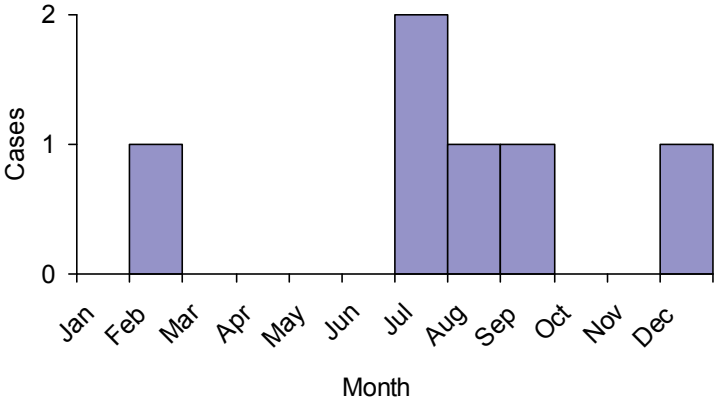
Hepatitis A Incidence, Maine and US, 2007-2011



Hepatitis A by Age and Gender, Maine, 2011



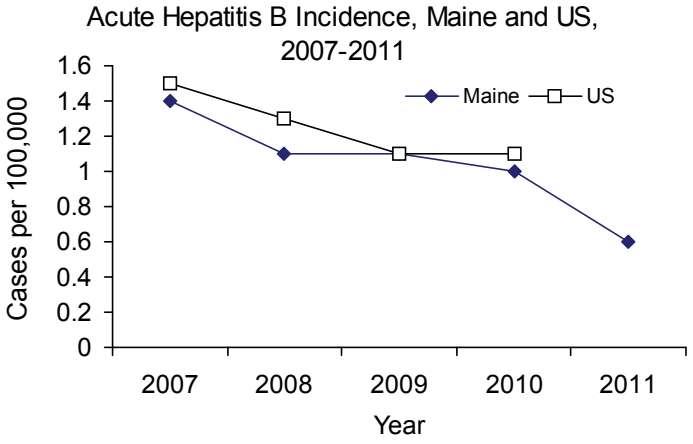
Hepatitis A by Month of Onset, Maine, 2011



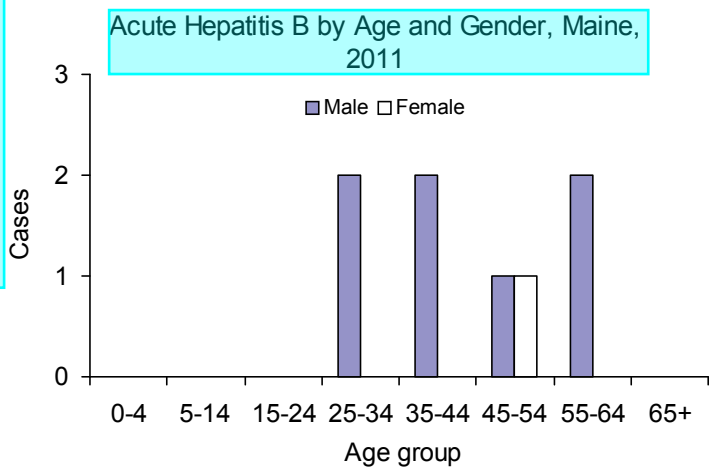
Hepatitis B, acute

2011 Case Total	**8**
Maine Rate	**0.6 per 100,000**
U.S. rate (2010)	**1.1 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.

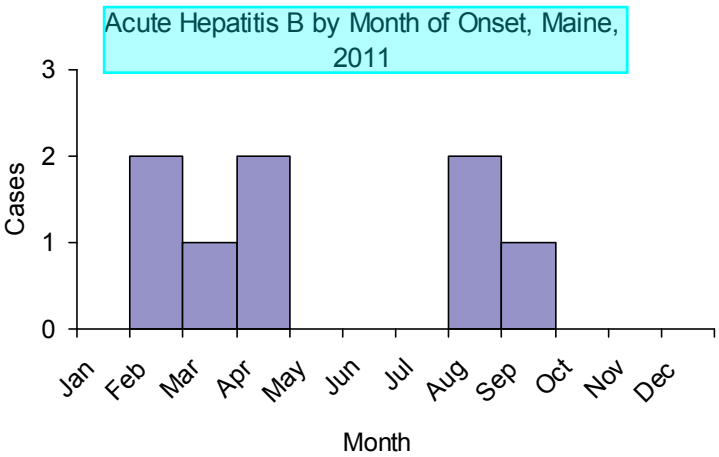


Hepatitis B virus can be transmitted through exposure to blood or body fluids from an infected person (needle sticks and other sharps exposures, sharing hypodermic syringes for drug injection), through sexual contact with an infected person, or from an infected mother to her child during childbirth.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

- Case total of 8 represents a decrease from 13 cases in 2010
- The 2006-2010 median number of cases per year was 15
- Median age was 46 years
- Age range was 29 to 57 years
- Cases were 13% female and 87% male



Hepatitis B can be prevented by vaccination as well as by not sharing needles and other drug injecting equipment, using sterile needles and syringes, and using condoms.

Hepatitis B, chronic

2011 Case Total	**105**
Maine Rate	**7.9 per 100,000**
U.S. rate (2010)	**Not available**

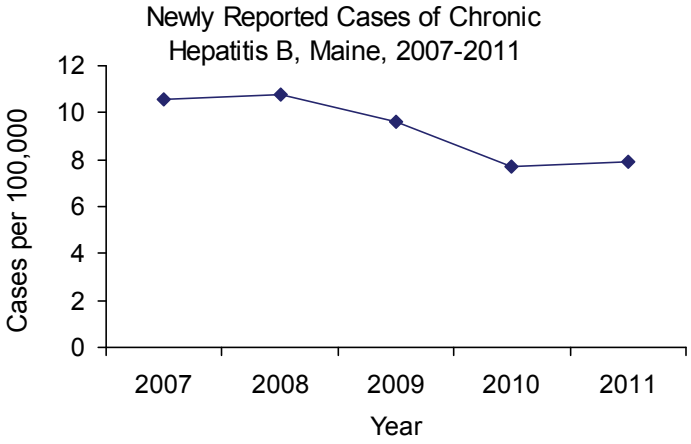
Hepatitis B is a liver disease caused by the hepatitis B virus. Chronic hepatitis B virus infection occurs when an infected person does not clear the virus within the first 6 months of infection.

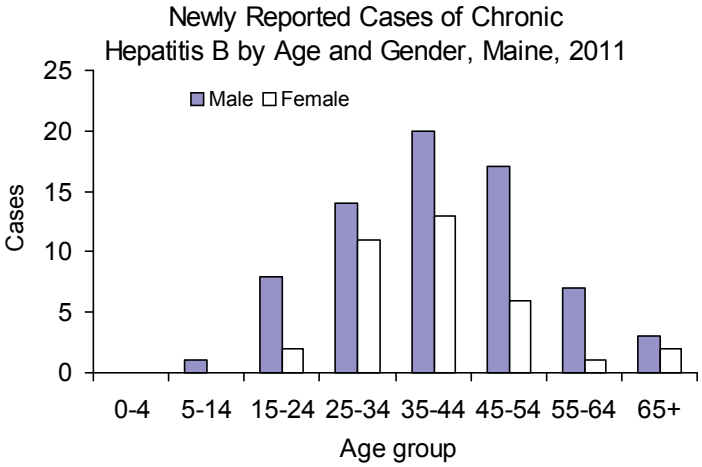
Chronic hepatitis B is a serious disease that can result in long-term health problems, such as cirrhosis (scarring) of the liver, liver cancer, liver failure, and even death. Many people do not have symptoms and may not know they are infected, but can still spread the disease to others.

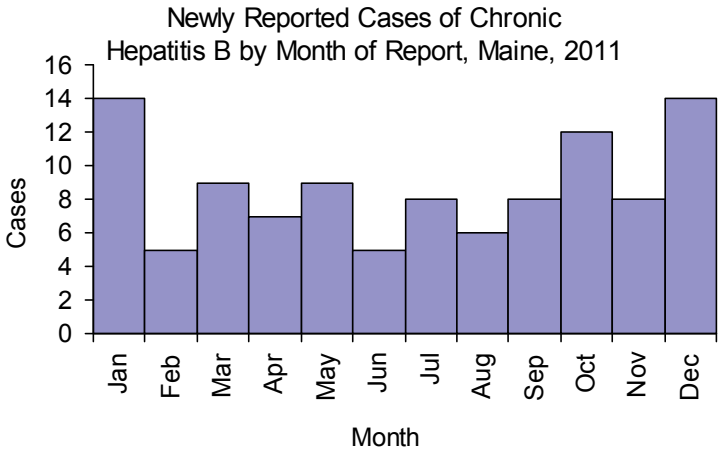
Hepatitis B virus can be transmitted through exposure to blood and or body fluids from an infected person (needle sticks and other sharps exposures, sharing hypodermic syringes for drug injection), through sexual contact with an infected person, or from an infected mother to her child during childbirth.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

- Case total of 105 represents a increase from 101 cases in 2010
- Median age was 39 years
- Age range was 10 to 76 years
- Cases were 33% female and 67% male

Transmission of hepatitis B virus can be prevented through testing and vaccination of susceptible household and sexual contacts of identified cases. Transmission can also be prevented by not sharing needles or other drug injecting equipment, using sterile needles and syringes, and using condoms.







Hepatitis C, acute

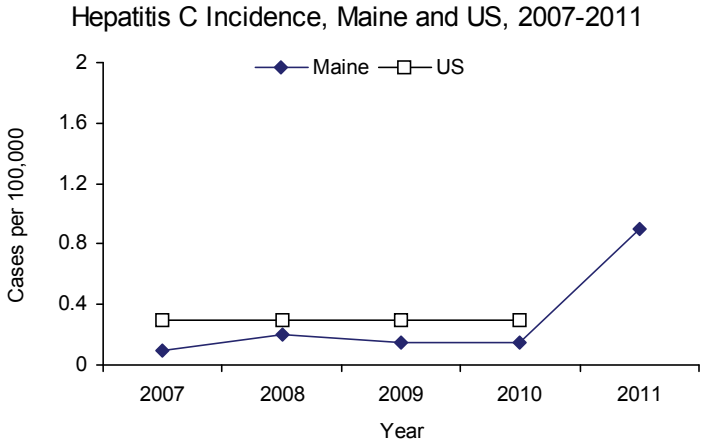
2011 Case Total	**12**
Maine Rate	**0.9 per 100,000**
U.S. rate (2010)	**0.3 per 100,000**

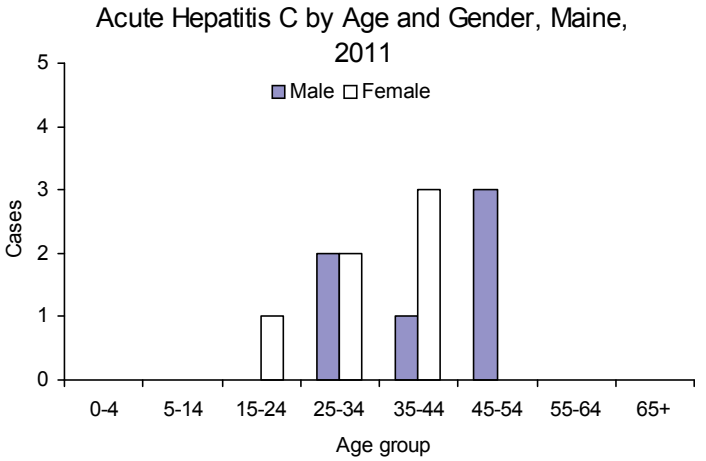
Hepatitis C is a liver disease caused by the hepatitis C virus (HCV). Acute hepatitis C is a short term illness that occurs within the first 6 months after someone is exposed. HCV is spread when blood from a person infected with HCV enters the body of someone who is not infected. Many people become infected with HCV by sharing needles or other injection drug equipment.

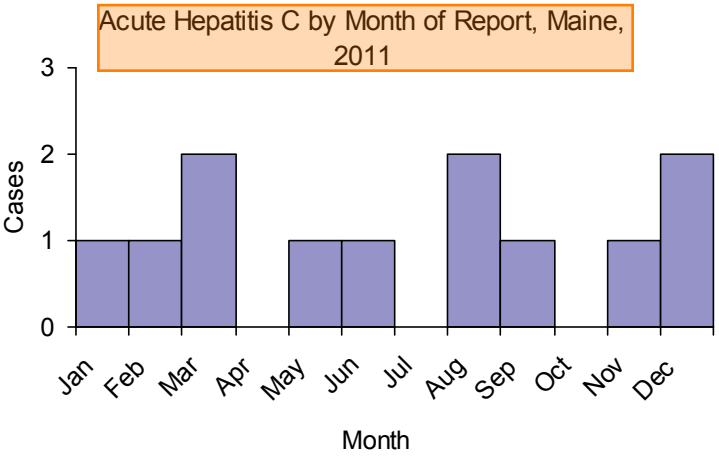
Persons with acute or newly acquired HCV infection are usually asymptomatic or have mild symptoms. Approximately 20%–30% of persons with acute infection experience fatigue, abdominal pain, poor appetite, and/or jaundice. The average time period from exposure to symptom onset is 4–12 wks (range: 2–24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

- Case total of 12 represents an increase from 2 cases in 2010, which may be related to a change in case definition
- The 2006-2010 median number of cases per year was 2
- Median age was 38 years
- Age range was 21 to 52 years
- Cases were 50% female and 50% male.

To prevent acute HCV infection, do not share needles or equipment used to inject drugs. Do not share personal hygiene items. Use licensed tattooists and body piercers. Use condoms to reduce the already low risk of sexual transmission.







Hepatitis C, past or present infection

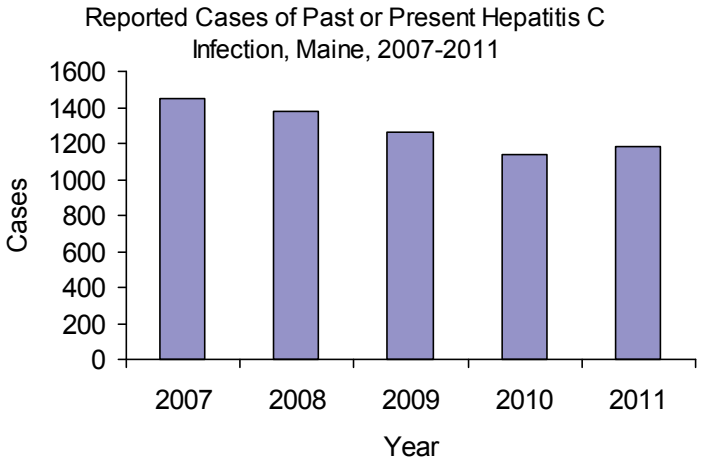
2011 Case Total	**1184**
Maine Rate	**89.1 per 100,000**
U.S. rate (2010)	**N/A**

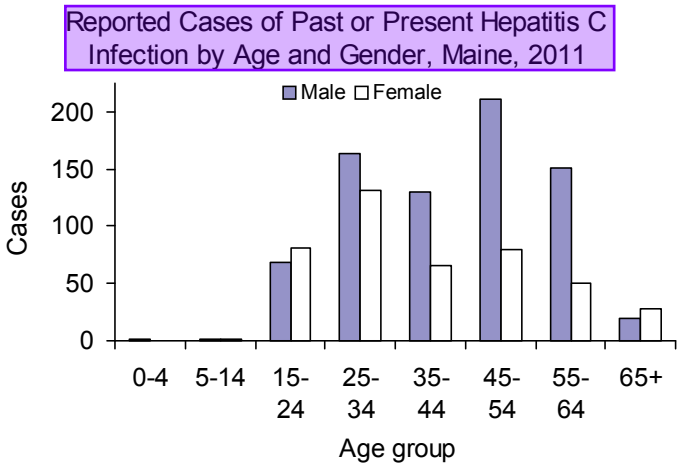
Hepatitis C is a liver disease caused by the hepatitis C virus (HCV). Chronic hepatitis C is a long-term illness that occurs when hepatitis C virus remains in a person's body. Over time it ca lead to serious liver disease. HCV is spread when blood from a person infected with HCV enters the body of someone who is not infected. Many people become infected with HCV by sharing needles or other injection drug equipment.

Most people with chronic HCV do not have any symptoms. In many cases, symptoms only appear when liver problems develop. HCV is often detected during routine blood tests to measure liver function and liver enzyme levels. A hepatitis C positive report is defined as the presence of any positive serologic marker for hepatitis C infection.

- Case total of 1184 represents an increase from 1142 cases in 2010
- Age range was 3 to 96 years
- Highest number of cases reported was among people 25-34 years (296), slightly higher than the number of cases reported among people 45-54 (290)
- Overall, cases were 63% male and 37% female. However, females exceeded males in the 15-24 and 65 and older age groups.

People with chronic HCV 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*

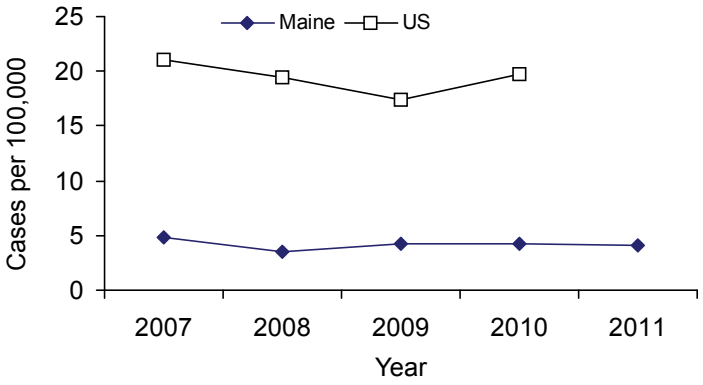
2011 Case Total	**54**
Maine Rate	**4.1 per 100,000**
U.S. rate (2010)	**19.7 per 100,000**

Human immunodeficiency virus (HIV) is a virus that is responsible for HIV disease and acquired immuno-deficiency 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 breast-feeding; and transfusion of infected blood or its components. In Maine, the most common mode of HIV transmission is through unprotected penile-anal intercourse among men.

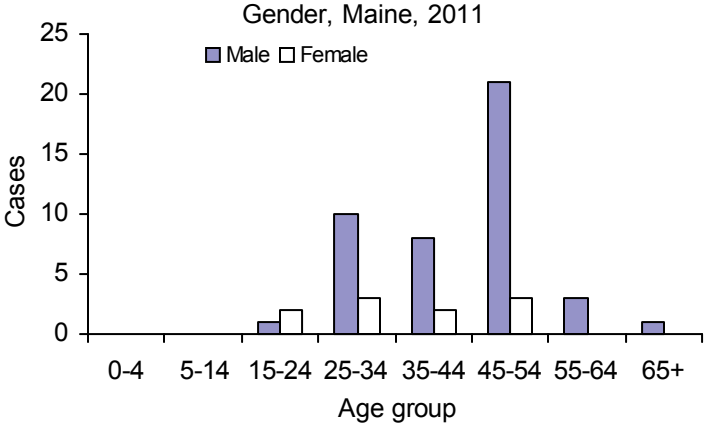
- Case total of 54 represents a decrease from 59 cases in 2010
- The 2006-2010 median number of cases per year was 52
- Age range was 22 years to 66 years
- Majority of cases were male (80%)
- 52% of cases reported risk factor of males who have sex with other males

HIV transmission can be prevented by the use of latex or polyurethane condoms and dental dams during anal, vaginal, and oral 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, 2007-2011



Newly Identified HIV Diagnoses by Age and Gender, Maine, 2011



Reported Transmission Risk Factors Among Persons Diagnosed with HIV, 2011

Mode of Transmission	New Diagnoses
Men who have sex with men (MSM)	29
Injection drug users (IDU)	1
MSM and IDU	0
Heterosexual contact with at-risk partners	4
Heterosexual, no at-risk partners disclosed	12
Undetermined	8
Received contaminated blood products	0
Child born to mother with HIV	0

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

Legionellosis

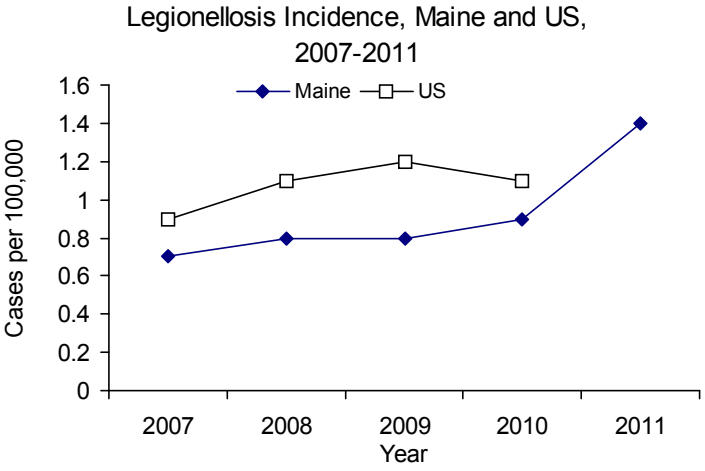
2011 Case Total	**18**
Maine Rate	**1.4 per 100,000**
U.S. rate (2010)	**1.1 per 100,000**

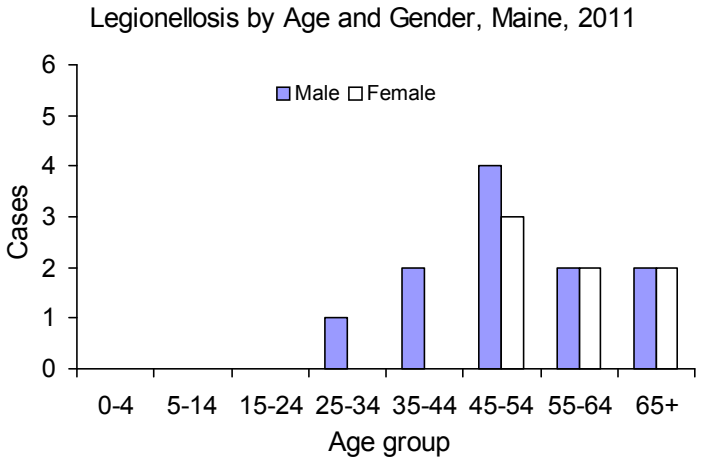
Legionellosis (or Legionnaire's disease) is a serious and sometimes fatal form of pneumonia. *Legionella* bacteria are widespread in natural, industrial and recreational water sources. The bacteria grow best in warm, stagnant water. They can be found in creeks and ponds, hot and cold water taps, hot 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.

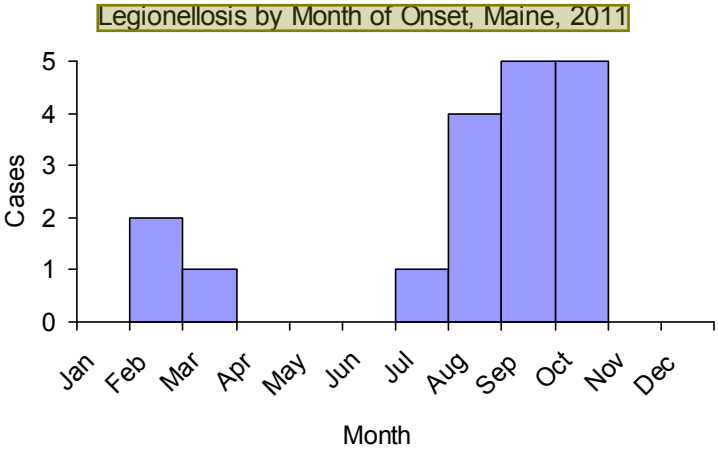
Symptoms include high fever, chills, muscle aches, headaches, cough and pneumonia. Legionellosis is treatable with antibiotics.

- Case total of 18 represents an increase from 12 cases in 2010
- The 2006-2010 median number of cases per year was 11
- Median age was 54 years
- Age range was 26 to 89 years
- Cases were 39% female and 61% 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

2011 Case Total	**4**
Maine Rate	**0.3 per 100,000**
U.S. rate (2010)	**0.3 per 100,000**

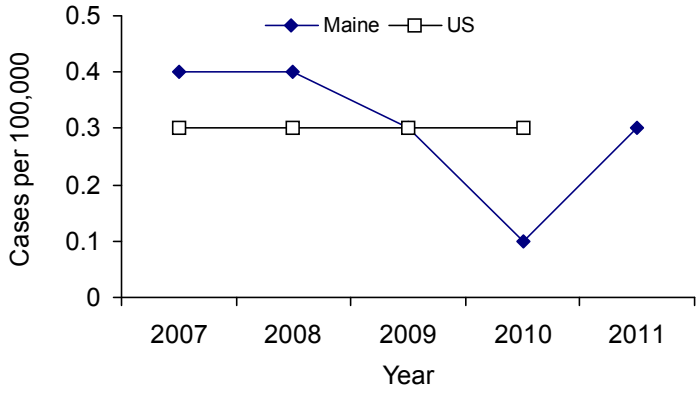
Listeriosis is a bacterial illness, caused by *Listeria monocytogenes*. Infection may cause sepsis and meningitis. Listeriosis is frequently linked to ready-to-eat meats (such as paté and refrigerated smoked seafood), deli meats, soft cheeses and raw milk. Pregnant women are at highest risk for severe 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.

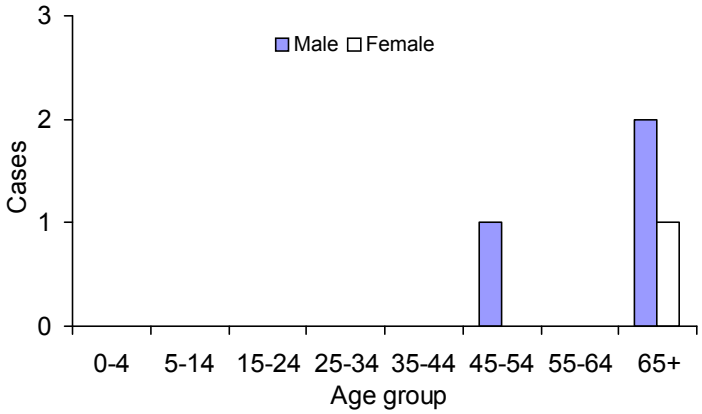
- Case total of 4 represents an increase from one case in 2010
- The 2006-2010 median number of cases per year was 4
- Median age was 78 years
- Age range was 49 to 89 years
- All 4 cases were hospitalized

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.

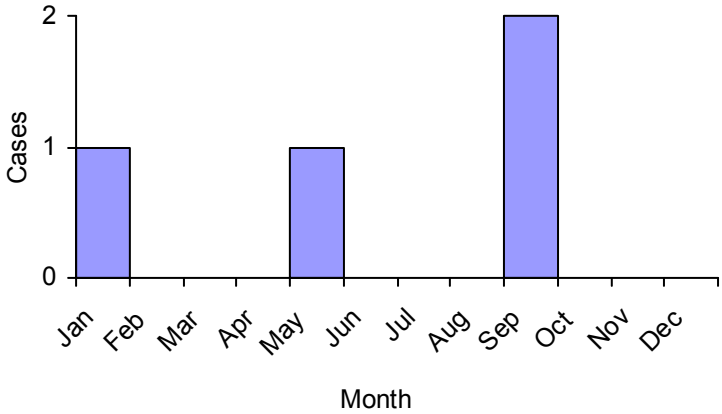
Listeriosis Incidence, Maine and US, 2007-2011



Listeriosis by Age and Gender, Maine, 2011



Listeriosis by Month of Onset, Maine, 2011



Lyme Disease

2011 Case Total	**1,006**
Maine Rate	**75.7 per 100,000**
U.S. Rate (2010)	**9.8 per 100,000**

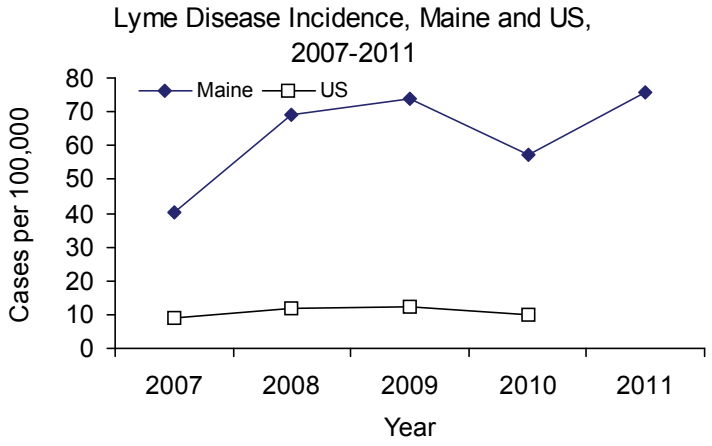
Lyme disease, Maine's most common vectorborne disease in humans, is caused by the bacterium *Borrelia burgdorferi*. The disease is transmitted via the bite of an infected deer tick (*Ixodes scapularis)* and symptoms are generally visible between 3 and 30 days after the initial bite. Early symptoms include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

The case definition for classifying cases changed effective January 1, 2008, and included a probable case definition which led to a higher case count than previous years.

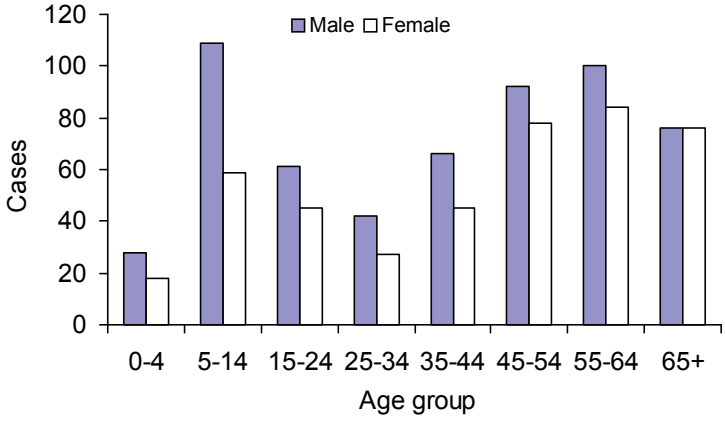
- Case total of 1,006 represents an increase from 751 cases in 2010
- The 2006-2010 median number of cases per year was 751
- Median age was 45 years
- Age range was 11 months to 93 years
- Cases were 43% female and 57% male
- Cases were greatest in York (19.7%) and Cumberland (27.3%) counties

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.

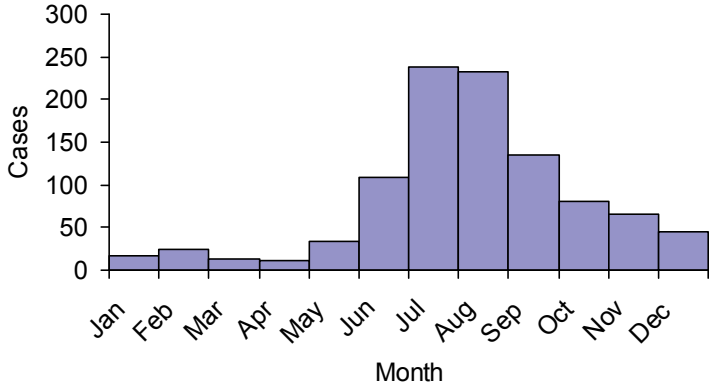
For more information about submitting a tick for identification (not testing for Lyme disease) visit www.mmcri.org/lyme.



Lyme Disease by Age and Gender, Maine, 2011



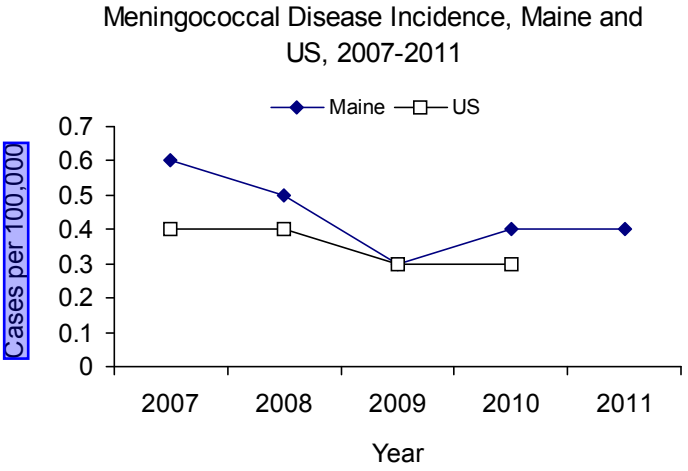
Lyme Disease by Month of Report, Maine, 2011



Meningococcal Disease

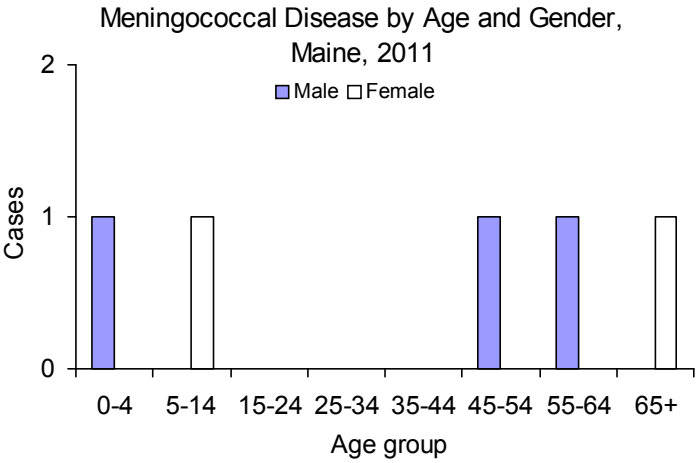
2011 Case Total	**5**
Maine Rate	**0.4 per 100,000**
U.S. rate (2010)	**0.3 per 100,000**

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 most often occurs through direct contact with respiratory secretions from the nose or throat of a person with the infection.

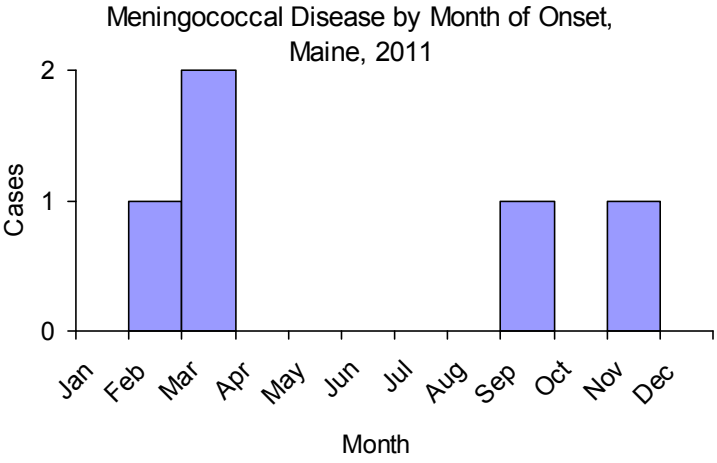


Symptoms include fever, headache, and stiff neck for meningitis and rash and sepsis for meningococcemia. The symptoms are indistinguishable from other pathogens causing meningitis.

- Case total of 5 represents the same number of cases as 2010
- The 2006-2010 median number of cases per year was 6
- Median age was 47 years
- Age range was 3 to 103 years
- Cases were 40% female and 60% male
- Serogroups identified include: A (1), B (2), W-135 (1), Y (1)



There are at least thirteen known *Neisseria meningitidis* serogroups, and there is currently a vaccine available for the four serogroups that cause the majority of infections (serogroups A, C, Y, and W-135). The vaccine is recommended for all adolescents, college students, military recruits, overseas travelers, and any other persons at increased risk of infection. To prevent the spread of disease, chemoprophylaxis is available for persons who have close and direct with a person with the infection.



MRSA, invasive

2011 Case Total	**121**
Maine Rate	**9.1 per 100,000**
U.S. rate (2010)	**Not reportable**

Since 2008, all cases of invasive methicillin-resistant *Staphylococcus aureus* (MRSA) are reportable, regardless of whether community-acquired or healthcare associated.

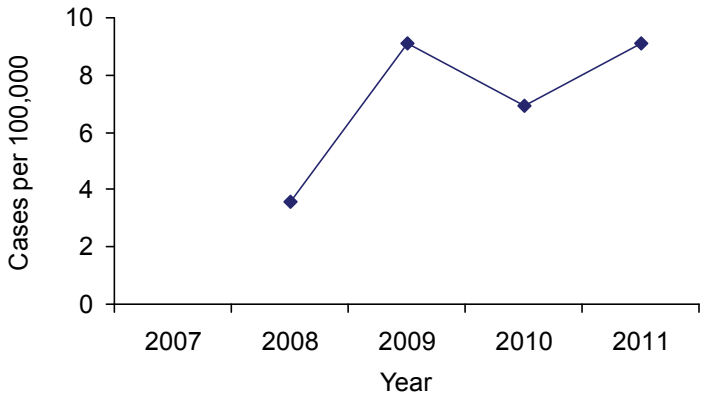
MRSA is caused by a strain of bacteria which is resistant to the antibiotic methicillin and many of the antibiotics commonly used to treat staphylococcal infections. MRSA is becoming more common in the community, usually presenting as a skin or soft tissue infection, considered a non-invasive infection. 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.

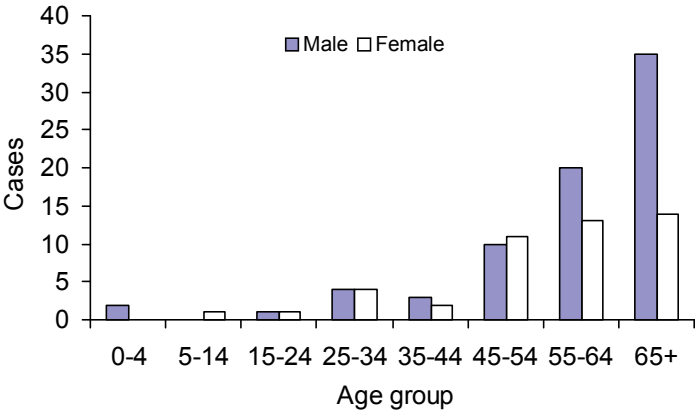
- Case total of 121 represents an increase from 90 cases in 2010
- Median age was 61 years
- Age range was 2 months to 95 years
- Cases were 38% female and 62% male

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.

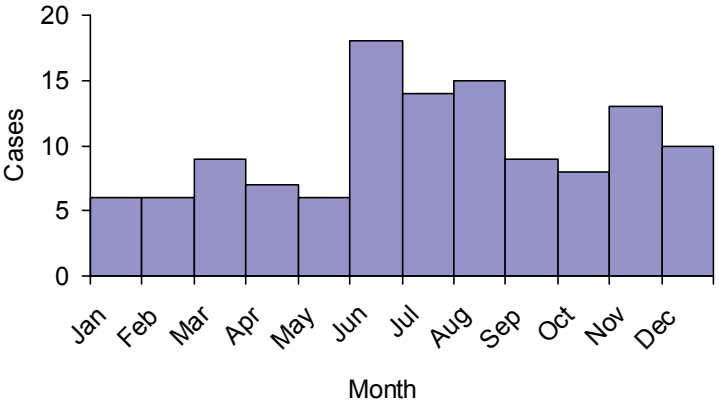
Invasive MRSA Incidence, Maine, 2007-2011



Invasive MRSA by Age and Gender, Maine, 2011



Invasive MRSA by Month of Report, Maine, 2011



Mosquito Borne Infections

Mosquitoes are found around the world. Female mosquitoes suck blood, making them an important disease vector. There are 45 species of mosquitoes in Maine, some of which are capable of carrying diseases including EEE and WNV.

Eastern Equine Encephalitis (EEE)

EEE is a mosquito-borne viral disease that occurs in the eastern half of the United States where it can cause disease in humans, horses, and some birds. Most persons infected with EEE will have no obvious symptoms. In those persons who do develop illness, symptoms of EEE range from mild-flu like illness to inflammation of the brain, coma, and death. EEE is one of the most serious mosquito-borne diseases in the United States because of its high mortality rate.

In 2011, 10 turkeys tested positive for EEE by serology in Maine. There were no human cases and no mosquito pools tested positive for EEE.

West Nile Virus (WNV)

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 those persons who do develop illness, symptoms of WNV include: headache, high fever, altered mental state, tremors, convulsions, and rarely paralysis. WNV can also cause meningitis and/or encephalitis and can be fatal.

In 2011, no mosquito pools, birds, humans or other mammals tested positive for WNV in Maine.

Malaria

Malaria is a serious and sometime fatal disease caused by a parasite that commonly infects a certain type of mosquito. Symptoms may include high fevers, shaking chills, flu-like illness, headache, muscle aches, tiredness, nausea, vomiting and diarrhea. Malaria is uncommon in the United States.

In 2011, there were six cases of malaria reported in Maine individuals who had a history of travel outside the US (Afghanistan, Iraq, Uganda, and India).

Dengue Fever

Dengue is a disease caused by a virus transmitted by the bite of an infected mosquito. Symptoms of dengue fever include high fever, severe headache, backache, joint pain, nausea and vomiting, eye pain and rash.

In 2011, there were no cases of Dengue fever reported to the state. Dengue virus is not common in the United States, but has been locally acquired in Florida, Texas and Hawaii.

Prevention

To decrease risk of contracting a mosquito-borne disease, measures should be taken to prevent mosquito bites:

- Use an EPA approved repellent. Products containing DEET, IR3535, picaridin or oil of lemon eucalyptus can be applied to exposed skin, and permethrin containing products can be applied to clothing. Make sure to follow the instructions on the product's label when using repellents or other pesticides
- Wear long sleeve shirts and long pants when possible or when mosquitoes are abundant
- Protect babies with mosquito netting
- When mosquitoes are especially abundant, stay indoors
- Mosquito proof your house by fixing or installing window screens and screen doors
- Control mosquito populations around your home by cleaning gutters and removing or emptying objects that contain still water where mosquitoes can lay eggs such as old tires, old cans, and plastic tarps
- Empty water from flower pots, pet dishes, birdbaths, rain barrels, and buckets at least once a week

Pertussis

2011 Case Total	**205**
Maine Rate	**15.4 per 100,000**
U.S. rate (2010)	**8.9 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. High pertussis vaccination rates are associated with lower numbers of pertussis cases.

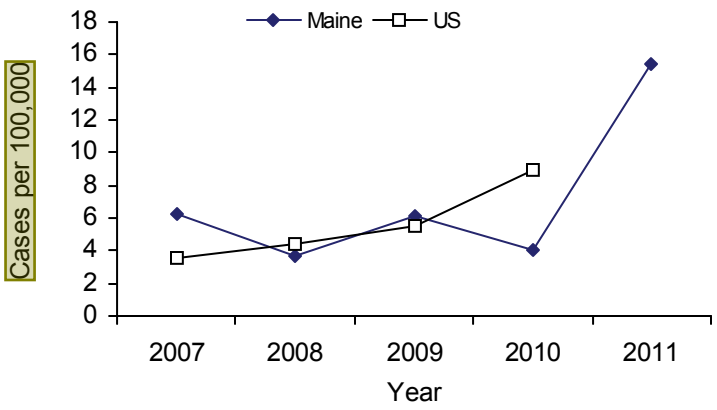
Symptoms include an irritating cough lasting at least 2 weeks with paroxysm, whoop, and post-tussive vomiting.

- Case total of 205 represents an increase from 53 cases in 2010
- The 2006-2010 median number of cases per year was 80
- Median age was 10 years
- Age range was 1 month to 79 years
- Cases were 54% female and 46% male
- Piscataquis and Penobscot counties had the highest incidence

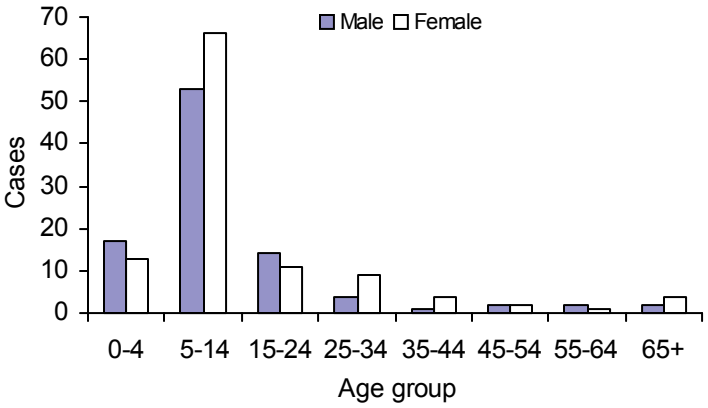
In 2011, clusters of illness occurred in schools, camps, sport teams and workplaces, mostly in Penobscot County (67% of all cases). Federal CDC collaborated with Maine to assess vaccine effectiveness and acceptability in Penobscot County.

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.

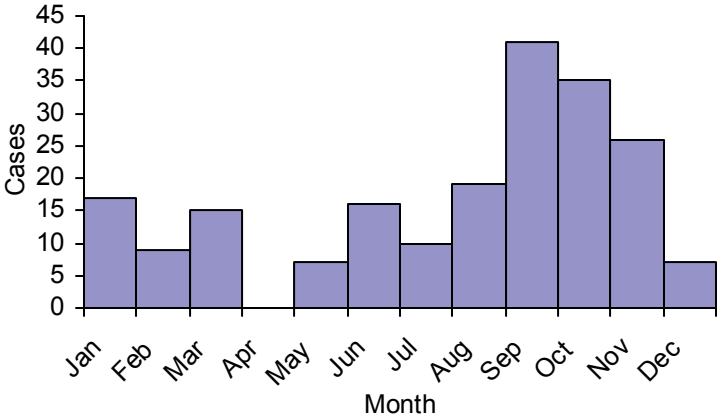
Pertussis Incidence, Maine and US, 2007-2011



Pertussis by Age and Gender, Maine, 2011



Pertussis by Month of Onset*, Maine, 2011



*Onset date missing for 3 cases

Rabies, Animal

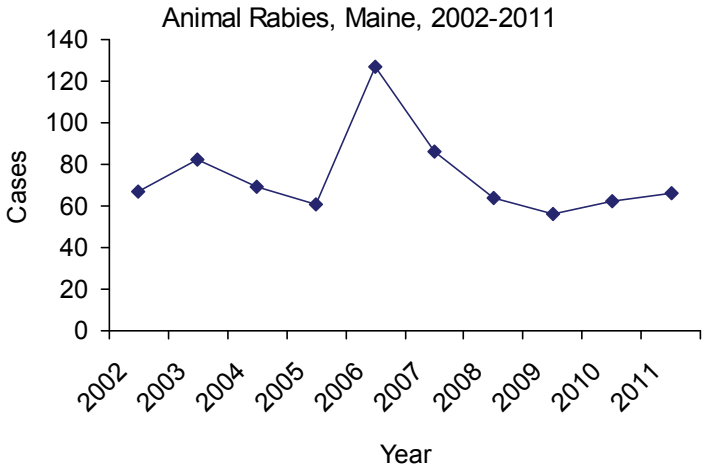
2011 Case Total	**66**
Maine Rate	**N/A**
U.S. Count (2010)	**6,155**

Rabies is a zoonotic disease caused by a virus that affects the nervous system (brain and spinal cord). Rabies in humans is rare in the United States. The vast majority of rabies infections are found in wild animals, including raccoons, skunks, bats, and foxes. Humans usually get rabies from the bite of a rabid animal. It is also possible, but quite rare, for people to get rabies if infectious material from a rabid animal, such as saliva or neural tissue, gets directly into their eyes, nose, mouth or a wound. Because rabies has occurred in people who have very close contact with bats without an apparent bite, this type of contact is also considered a risk and should be evaluated by a healthcare provider.

When a human is infected with rabies the virus infects the central nervous system. The earliest symptoms include fever and general discomfort. As the disease progresses symptoms may include difficulty sleeping, anxiety, confusion, hallucinations, excessive drooling, difficulty swallowing, and fear of water. Death generally follows a few days after the onset of symptoms.

- Case total of 66 animal rabies cases represents an increase from 62 cases in 2010
- The 2006-2010 median number of cases per year was 64 cases
- The last reported case of human rabies in Maine was in 1937
- 34 persons recommended to receive PEP after exposure to a rabid animal
- 110 persons reported for receiving PEP after exposure to a suspect rabid animal that was not available for testing

Testing an animal for rabies requires central nervous system or brain tissue, which must be obtained from the animal after it is deceased. Using direct fluorescent antibody testing, the state's public health laboratory can determine whether wild or domestic animals that exposed a human or domestic animal are infected with the virus. In 2011, an unvaccinated domestic horse tested positive for rabies after exposure to a raccoon.



Positive Rabies Results by Species, Maine, 2011

Animal	Number Positive
Raccoon	32
Skunk	12
Fox	11
Bat	5
Cat (feral)	2
Sheep	2
Horse	1
Bobcat	1

If it is determined that a human was exposed to an infected animal, a course of post-exposure prophylaxis (PEP) is recommended. Generally, rabies PEP consists of a course of immune globulin and vaccine over a 14 day period.

Human rabies cases in the United States are rare. Increased public awareness of rabies may reduce the number of exposures. Though rabies is generally found in wild animals, it is important to keep domestic animals up to date on rabies vaccination. The use of human rabies PEP after an exposure is effective in preventing disease.

Salmonellosis

2011 Case Total	**134**
Maine Rate	**10.1 per 100,000**
U.S. rate (2010)	**17.6 per 100,000**

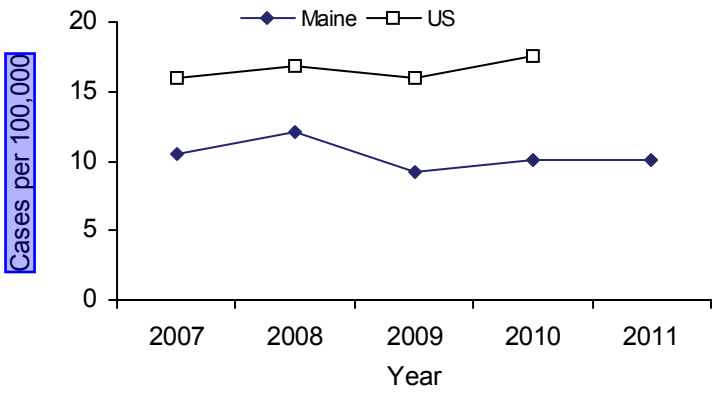
Salmonellosis is a gastrointestinal illness of varying severity caused by *Salmonella* bacteria. Severity of symptoms depends on the age and overall health of the person infected, serotype of *Salmonella* and the site of infection. *Salmonella* is transmitted through the ingestion of contaminated meat, 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.

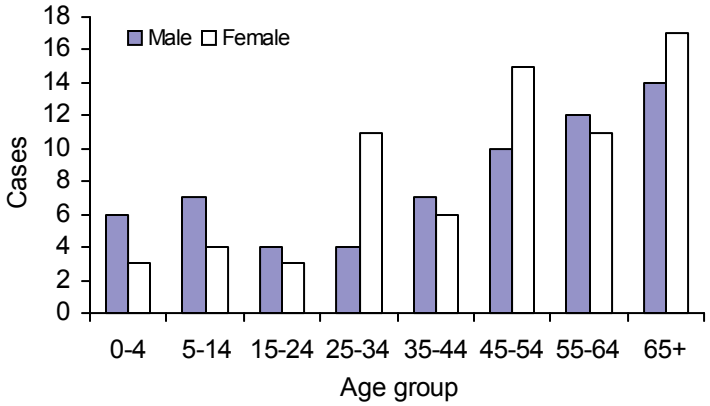
- Case total of 134 represents an increase from 133 cases in 2010
- The 2006-2010 median number of cases per year was 138
- Median age was 47 years
- Age range was 4 months to 94 years
- Cases were 52% female and 48% male
- 125 of 134 (93%) cases were laboratory confirmed
- The most commonly seen types of *Salmonella* were Enteritidis and Typhimurium

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

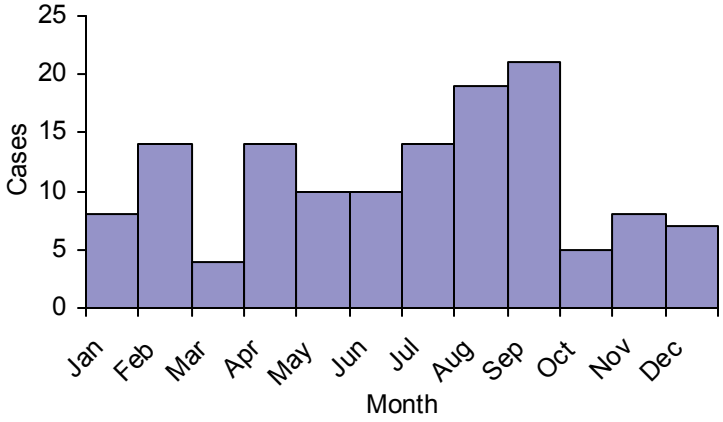
Salmonellosis Incidence, Maine and US, 2007-2011



Salmonellosis by Age and Gender, Maine, 2011



Salmonellosis by Month of Report, Maine, 2011



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

2011 Case Total	**28**
Maine Rate	**2.1 per 100,000**
U.S. rate (2010)	**1.8 per 100,000**

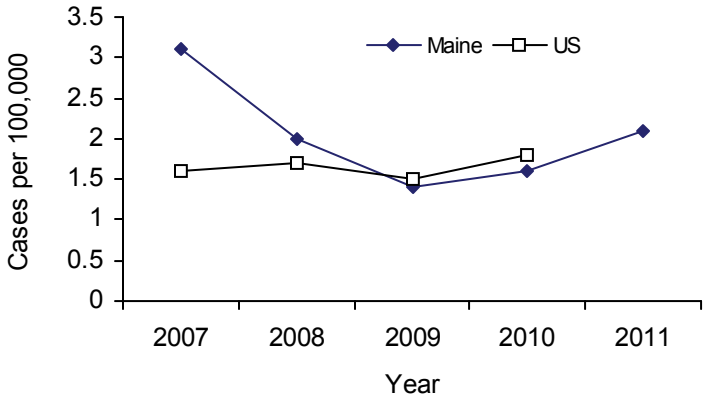
Escherichia coli (E. coli) are common bacteria that live in the digestive tract, some cause serious infection and some do not. Transmission of Shiga toxin-producing *E. coli* (STEC) is through consumption of food or water contaminated with fecal matter or through contact with farm animals. Commonly implicated 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.

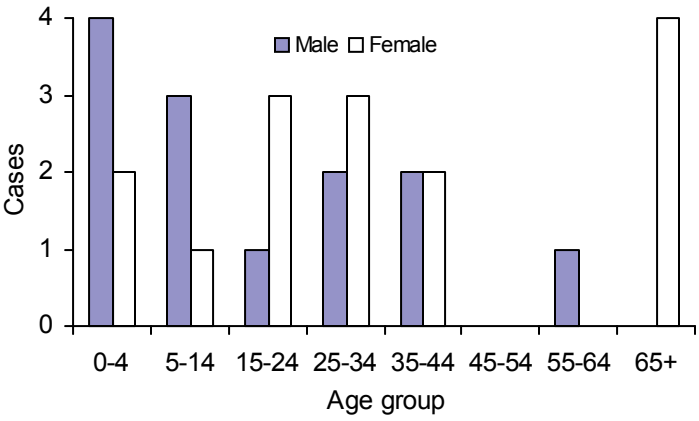
- Case total of 28 represents an increase from 21 cases in 2010
- The 2006-2010 median number of cases per year was 26
- Median age was 23 years
- Age range was 1 to 87 years
- Cases were 54% female and 46% male
- 24 of 28 (86%) cases were laboratory confirmed
- 21% of laboratory confirmed cases were O157:H7
- Two cases of hemolytic uremic syndrome (HUS) with symptoms of diarrhea were reported, no *E. coli* isolated from specimens

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

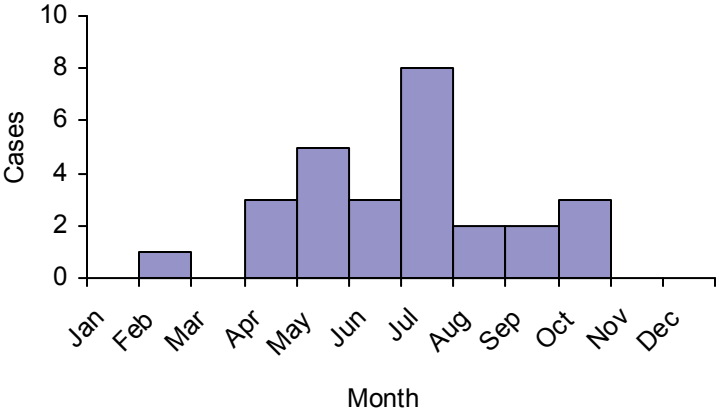
STEC Incidence, Maine and US, 2007-2011



STEC by Age and Gender, Maine, 2011



STEC by Month of Onset*, Maine, 2011



*Onset date missing for one case

Shigellosis

2011 Case Total	**32**
Maine Rate	**2.4 per 100,000**
U.S. rate (2010)	**4.8 per 100,000**

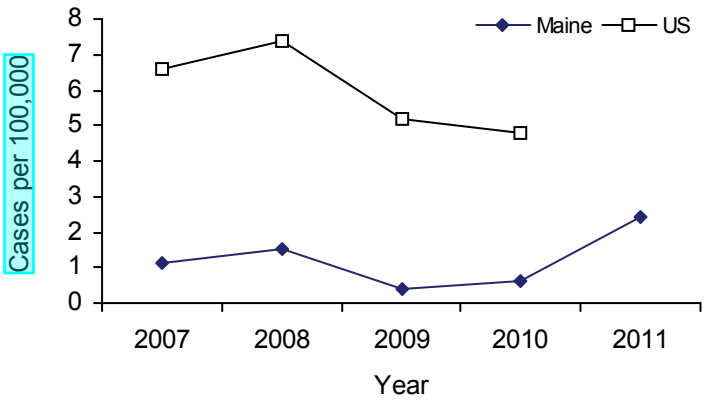
Shigellosis is a gastrointestinal illness caused by *Shigella* bacteria. *Shigella* is highly infectious and can easily be passed from one person to another through the fecal-oral route. Shigellosis can be transmitted by eating contaminated food, and drinking, swimming in or playing with contaminated 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. Children, especially toddlers aged 2 to 4 years, are most likely to get shigellosis.

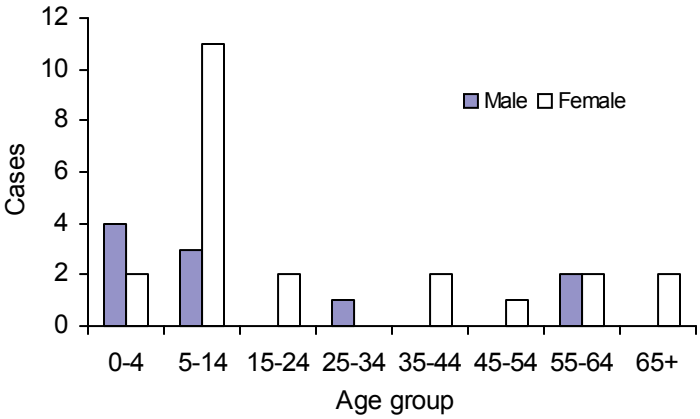
- Case total of 32 represents an increase from 8 cases in 2010
- The 2006-2010 median number of cases per year was 8
- Median age was 11 years
- Age range was 1 to 71 years
- Cases were 69% female and 31% male
- 20 of 32 (63%) cases were laboratory confirmed
- *Shigella sonnei* and *flexneri* were identified
- 6/8 (75%) of non-outbreak related cases had travel to a foreign country during exposure period
- 24/32 (75%) cases were associated with a community wide outbreak with matching *Shigella* organisms

To prevent shigellosis, practice good hand hygiene, avoid consuming unpasteurized milk products, use filtered, clean water, and store foods properly. 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.

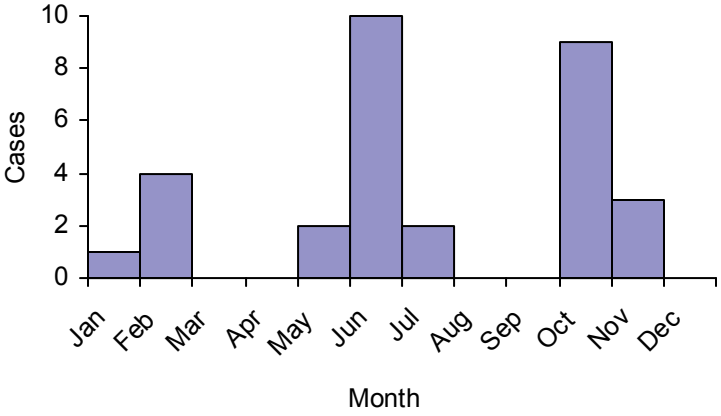
Shigellosis Incidence, Maine and US, 2007-2011



Shigellosis by Age and Gender, Maine, 2011



Shigellosis by Month of Onset*, Maine, 2011



*Onset date missing for one case

Streptococcus pneumoniae, invasive

2011 Case Total	**136**
Maine Rate	**10.2 per 100,000**
U.S. rate (2010)	**5.4 per 100,000**

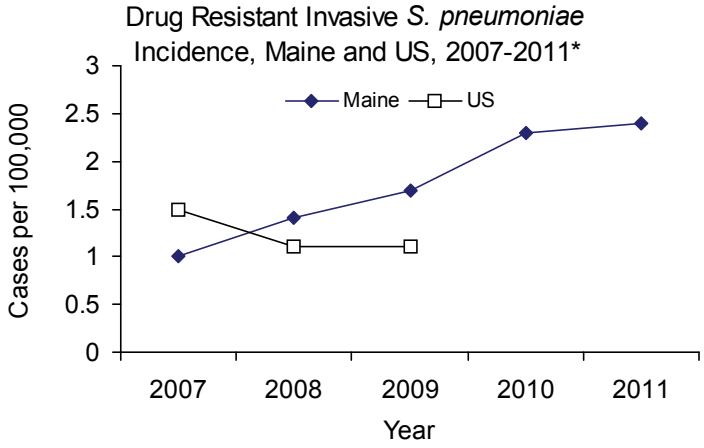
Starting in 2010, all cases of invasive disease were investigated and reported. *Prior to 2010 only drug resistant cases and illness in children under 5 years were reported to federal CDC.

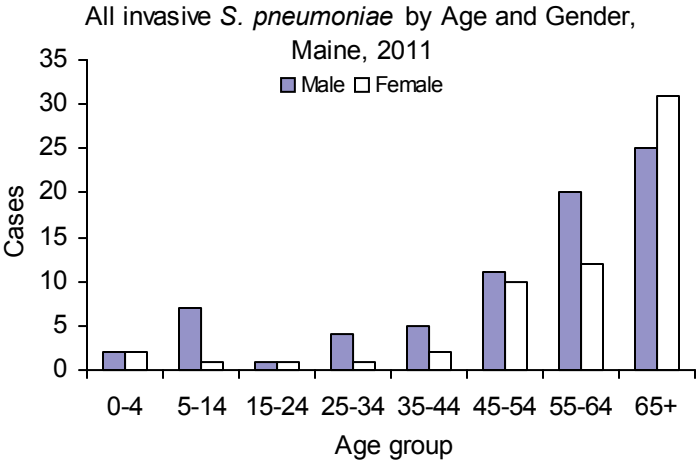
Invasive pneumococcal disease occurs when the *Streptococcus pneumoniae* bacterium infects the blood, lungs, or brain. Disease is transmitted from person to person through droplets when an infected person coughs or sneezes. Types of illness include bacteremia, meningitis, and pneumonia. There are over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

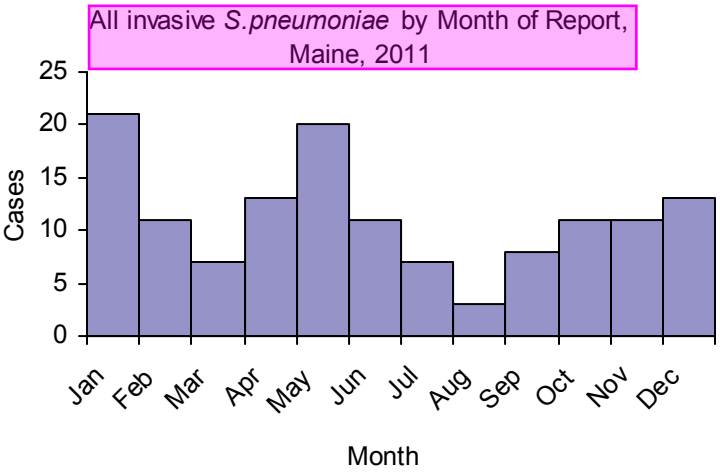
Persons at risk of pneumococcal disease include young children, adults 65 years of age or older, persons with certain underlying medical conditions, persons with weakened immune systems, and those in congregate settings such as daycare and long-term care facilities.

- Case total of 136 represents an increase from 130 in 2010
- 32 cases were drug resistant (resistant to at least one tested antibiotic)
- Median age for invasive cases was 60 years
- Age range for invasive cases was 1 to 105 years
- Cases were 45% female and 55% male
- 4 cases were in children under the age of five (none were drug resistant)

Pneumococcal disease can be prevented through routine vaccination of infants and children under five years with the pneumococcal conjugate vaccine (PCV13) and vaccination of adults and children over the age of two who are at high risk of infection with the pneumococcal polysaccharide vaccine (PPV23).







Early Syphilis

2011 Case Total	**20**
Maine Rate	**1.5 per 100,000**
U.S. rate (2010)	**8.9 per 100,000**

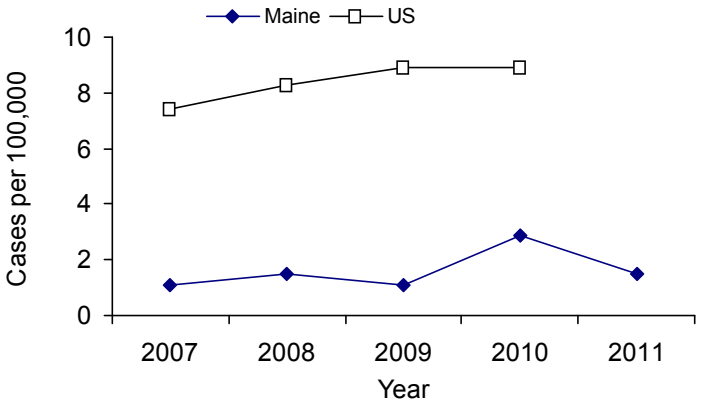
Syphilis is a sexually transmitted disease (STD) caused by the bacterium *Treponema pallidum*. It has often been called "the great imitator" because so many of the signs and symptoms of syphilis are like those of other diseases.

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.

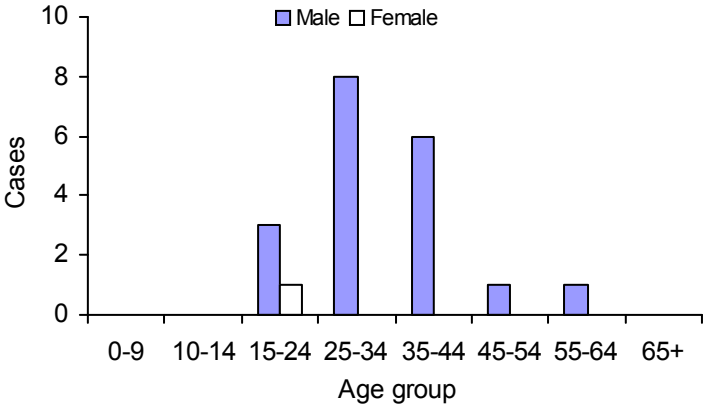
Syphilis is primarily spread through direct contact with a primary syphilis lesion. Lesions typically occur on the external genitals, vagina, and around the anus, but are also seen on the lips and in the mouth. Transmission primarily occurs during vaginal, anal, or oral sex. Disease transmission can 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.

- Case total of 20 represents a decrease from 39 cases in 2010
- The 2006-2010 median number of cases per year was 16
- 19 (95%) of cases were male, with only one female case (5%) reported

Early Syphilis Incidence, Maine and US, 2007-2011



Early Syphilis by Age and Gender, Maine, 2011



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 ensuring adequate treatment, notifying partners of potential exposure, and identification of public sex environments that outreach educators can target in their work.

Tuberculosis

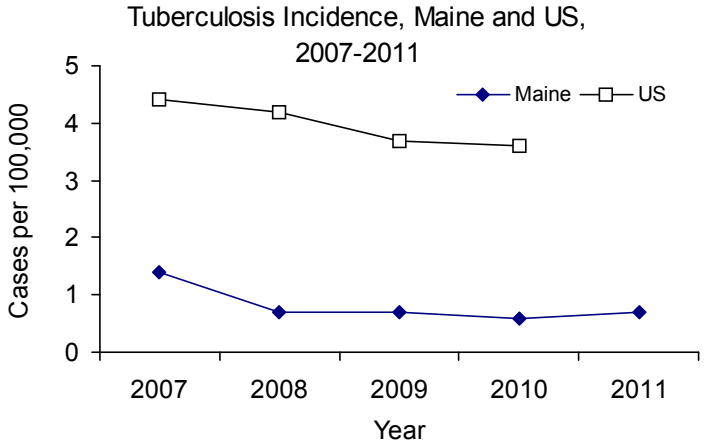
2011 Case Total	**9**
Maine Rate	**0.7 per 100,000**
U.S. rate (2010)	**3.6 per 100,000**

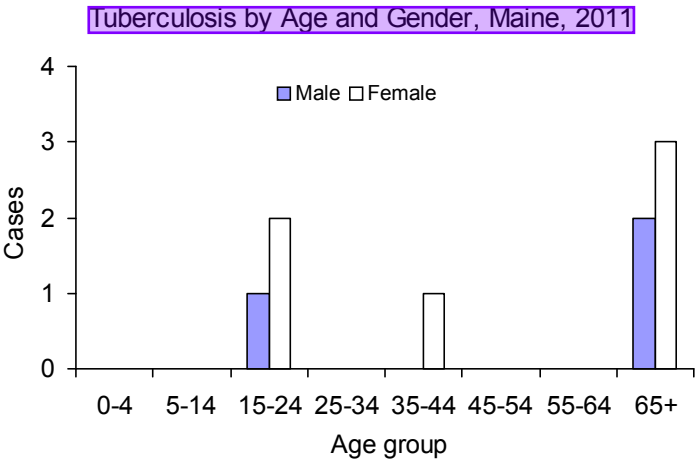
Tuberculosis (TB) is a communicable disease caused by the bacterium, *Mycobacterium tuberculosis*. It is spread through the air by airborne particles called droplet nuclei that are expelled from the lungs when a person who has infectious TB coughs, sings or sneezes. TB infection begins when the mycobacterium is inhaled into the lung and begins to multiply. Usually, the body is able to contain the infection so that disease does not develop. This is known as latent TB infection (LTBI) and is not infectious to others.

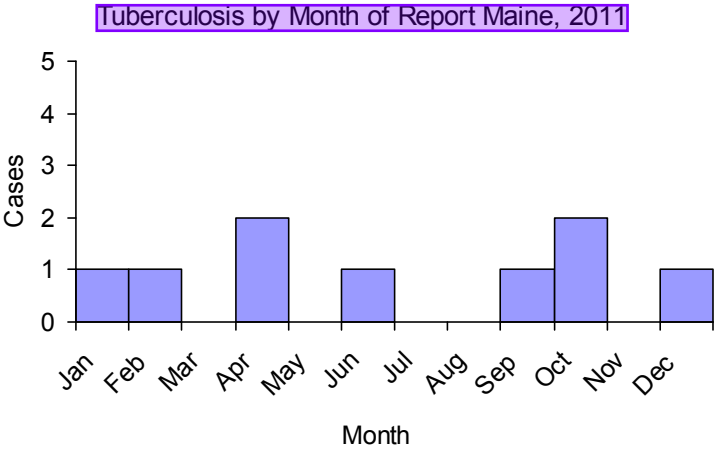
TB can cause infection in the lung (pulmonary), which is considered infectious to others. TB also causes infection outside of the lung (extrapulmonary), which is not infectious.

- Case total of 9 represents an increase from 8 cases in 2010
- Lowest case rate in the country in 2011
- The 2006-2010 median number of cases per year was 9
- Median age was 70 years
- Age range was 19 to 90 years
- Cases were 67% female and 33% male
- 5 of 9 cases (56%) were foreign born
- In 5 contact investigations, 78% of identified contacts were evaluated; range of 55% - 100% for individual cases
- Of 432 LTBI reports, 81% were foreign born

All cases are evaluated by a TB consultant physician and are placed on directly observed therapy (DOT) administered by Public Health Nurses.



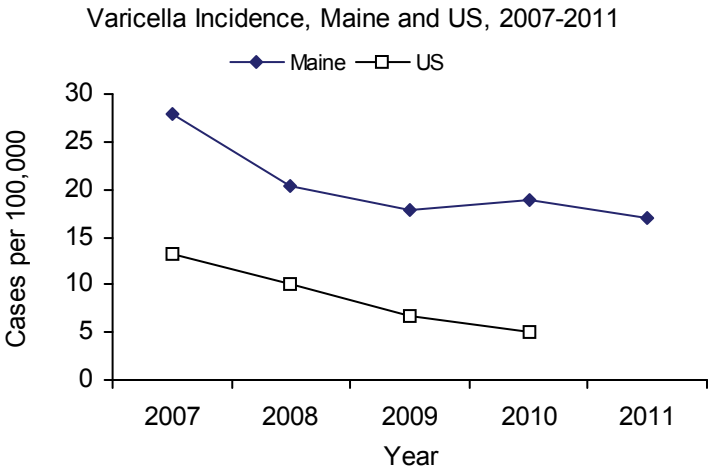




Varicella

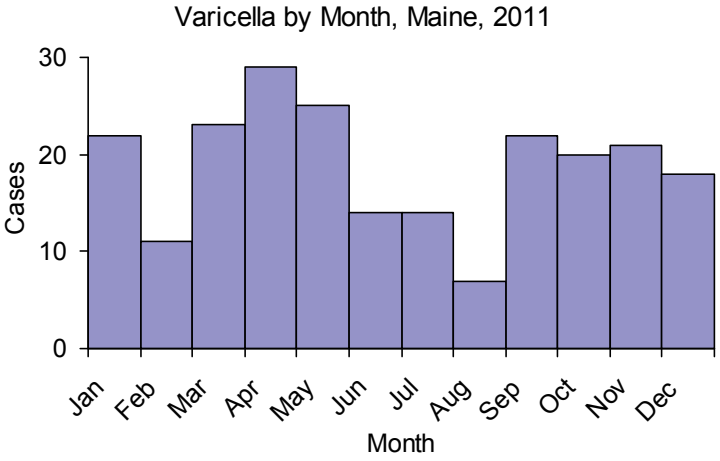
2011 Case Total	**226**
Maine Rate	**17.0 per 100,000**
U.S. rate (2010)	**5.0 per 100,000**

Varicella (chickenpox) is a highly contagious viral disease of which humans are the only source of infection. In 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 and is transmitted occasionally via the airborne route. Adolescents and adults are at higher risk for severe disease which could include pneumonia, bacterial infection of the skin and swelling of the brain.

- Case total of 226 represents a decrease from 247 cases in 2010
- Overall the greatest incidence was during the fall and spring months while school was in session
- 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 now a requirement for school admission.

Vibriosis

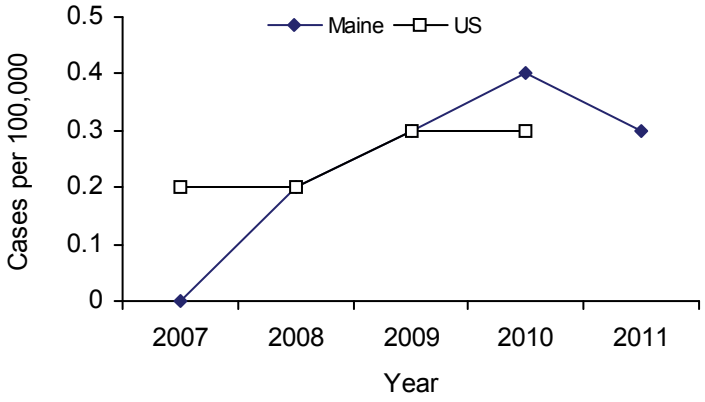
2011 Case Total	**4**
Maine Rate	**0.3 per 100,000**
U.S. rate (2010)	**0.3 per 100,000**

Vibriosis is an infection of variable severity characterized by diarrhea and 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.

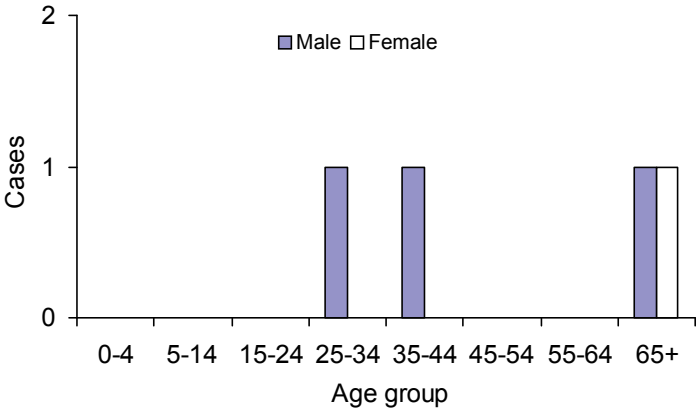
- Case total of 4 represents a decrease from 5 cases in 2010
- The 2006-2010 median number of cases was 4
- Median age was 55 years
- Age range was 32 to 90 years
- Cases were 25% female and 75% male
- *Vibrio alginolyticus*, *parahaemolyticus*, and *fluvialis* were isolated.

Vibrio infections caused by *V. parahaemolyticus* 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.

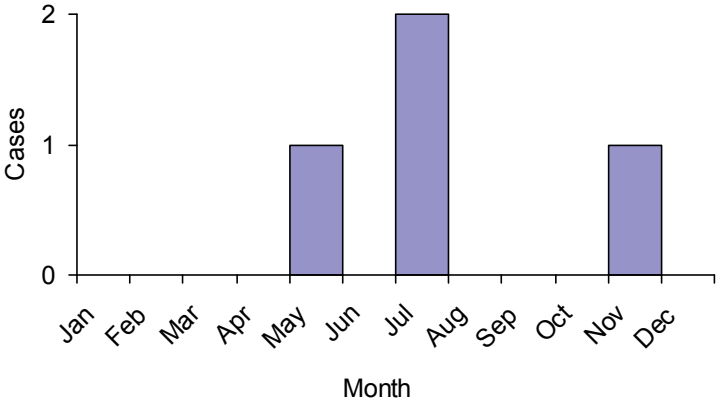
Vibriosis Incidence, Maine and US, 2007-2011



Vibriosis by Age and Gender, Maine, 2011



Vibriosis by Month of Onset, Maine, 2011



Influenza Season 2011—2012

Influenza

Influenza is a viral illness that typically occurs during the winter months. It is characterized by the abrupt onset of constitutional and respiratory signs and symptoms such as fever, headache, non-productive cough, sore throat, and runny nose. Influenza is spread from person to person primarily through coughing and sneezing of infected persons. Influenza can be diagnosed through laboratory testing. Influenza-like illness (ILI) is defined as fever greater than or equal to 100°F (37.8°C) AND cough and/or sore throat in the absence of a known cause.

The purpose of influenza surveillance is to inform influenza prevention and control policy. Maine CDC conducted influenza surveillance in collaboration with thirty health care providers, four hospitals, three laboratories, one city vital records office, and twenty four hospital emergency departments during the reporting period from October 2, 2011 to May 19, 2012. This report summarizes 2011-12 influenza surveillance by key indicators.

Influenza Surveillance in Maine

Outbreaks

Outbreaks of influenza or influenza-like illness are reportable by law in Maine. The definition used to recognize outbreaks of influenza-like illness varies by setting. During the 2011-12 season, a total of ten outbreaks of influenza were reported in Maine. This is a decrease from the 2010-11 season when 61 outbreaks were reported. Of the 10 outbreaks, 8 were in long-term care facilities, 1 in K-12 schools, and 1 in a university setting. Outbreaks occurred in four of the eight districts in the state (Cumberland, Penquis, Western and York).

Death Certificates

The vital records office of Bangor reported the number of death certificates in which pneumonia and/or influenza were mentioned as the primary or secondary cause of death. Data reported represent deaths that occurred in the reporting area, not the residence of the deceased. During the 2011-12 season, a total of 751 deaths were reported by this vital records office. Of these 110 (14.6%) were attributed to pneumonia or influenza.

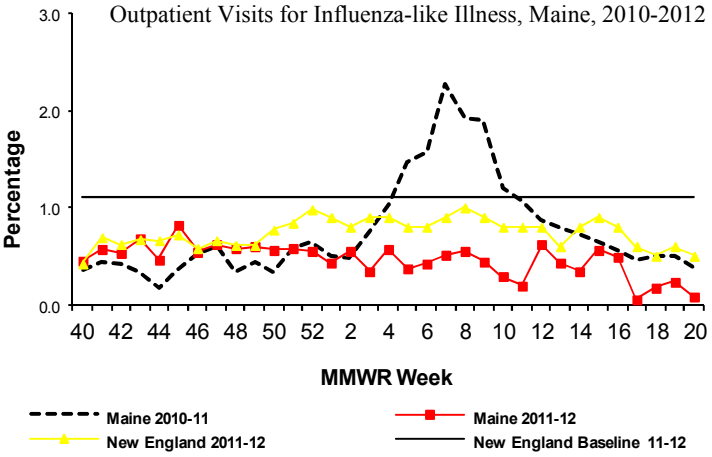
Pediatric Fatalities

Health care providers and the Office of the Medical Examiner report deaths in persons aged 18 years or younger associated with laboratory-confirmed influenza to Maine CDC. No influenza-associated pediatric deaths were reported during the 2011-12 influenza season.

Influenza Season 2011—2012

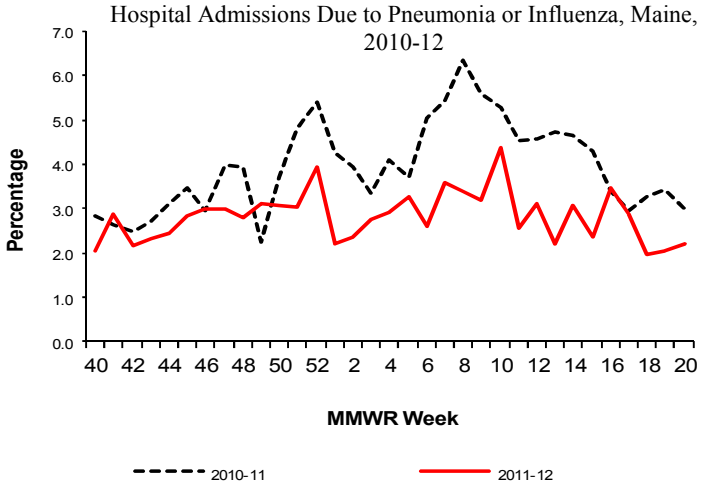
Outpatient influenza-like illness (ILI)

Data on outpatient visits for ILI was collected through the U.S. Outpatient Influenza-like Illness Surveillance Network (ILINet), a collaborative effort between federal CDC, Maine CDC, and local health care providers. During the 2011-12 season, 30 health care providers reported the total number of patients seen in their practices and the number of those patients seen for ILI by age group on a weekly basis. Outpatient ILI visits in Maine peaked in November (MMWR week 45) and again in April (MMWR weeks 12-16). The New England region peaked in December and again in February.



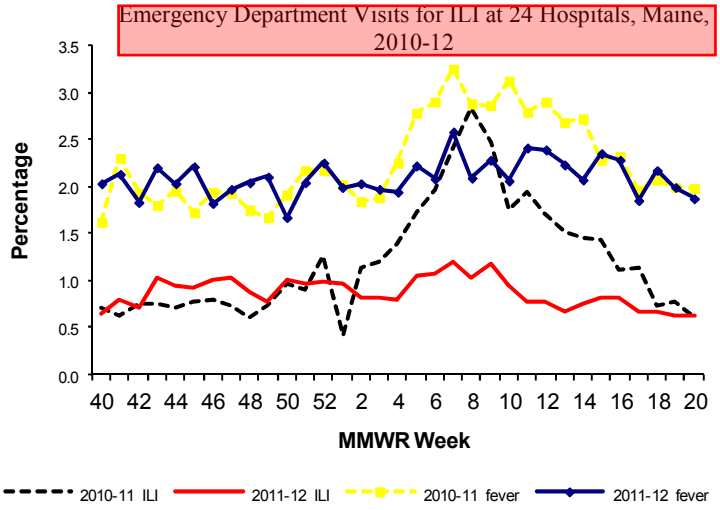
Hospital Inpatients

Inpatient surveillance for respiratory illness admissions in Maine was conducted in collaboration with four hospitals. During the 2011-12 season, four hospitals reported the number of patients admitted to the hospital and the number of those patients admitted for influenza or pneumonia using admitting diagnoses. Hospital admissions for influenza, pneumonia, or respiratory illness were highest in the first week of March (MMWR week 10).



Emergency Room Visits

Syndromic surveillance was conducted in the Emergency Departments of 24 hospitals and analyzed using the Early Aberration Reporting System (EARS). These visits are grouped by chief complaint. The percentage of ED visits that had a chief complaint consistent with ILI peaked in the end of February, beginning of March (MMWR week 9)

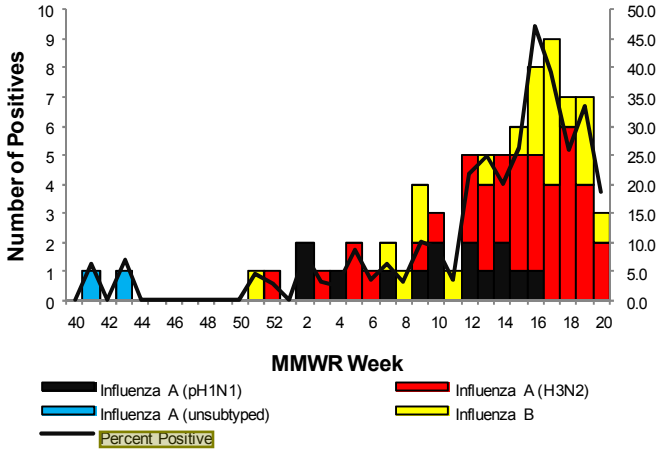


Influenza Season 2011—2012

HETL

Maine CDC's Health and Environmental Testing Laboratory (HETL) worked collaboratively with hospitals and private laboratories to collect specimens for respiratory virus testing and influenza positive isolate subtyping. HETL reported the number of specimens received for respiratory virus testing and the number positive for influenza A(pH1N1), A(H3), A (unable to subtype), and influenza B by specimen collection date. During the 2011-12 season, 840 respiratory specimens were tested by HETL for influenza. Of those 77 (9.2%) were positive for influenza (14 for influenza A/pH1N1, 40 for influenza A/H3, 2 for influenza A unable to subtype, and 21 for influenza B).

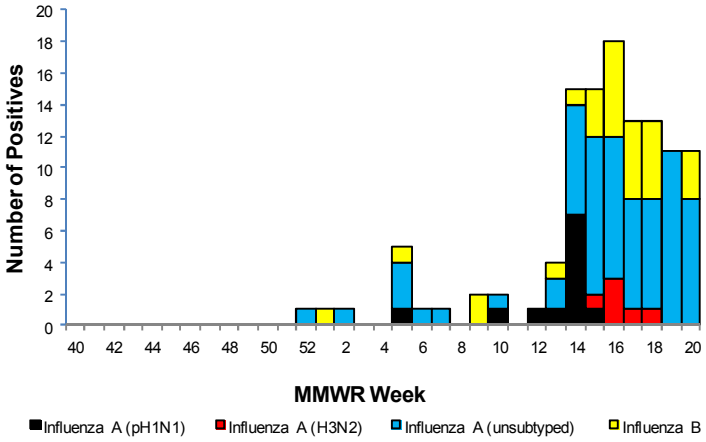
Positive PCR Samples for Influenza, HETL—Maine, 2011-12



Reference Labs

Two Maine reference laboratories, and many national reference laboratories submitted reports of laboratory-confirmed influenza by culture or reverse-transcriptase polymerase chain reaction (RT-PCR). During the 2011-12 season, 115 specimens were positive for influenza (12 for influenza A/pH1N1, 6 for influenza A/H3, 69 for influenza A without subtype, and 28 for influenza B).

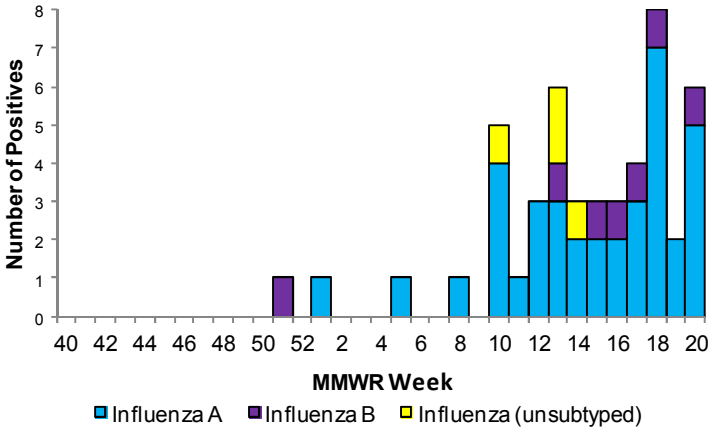
Positive PCR Samples for Influenza, Maine and National Reference Labs—Maine, 2011-12



Rapid testing

Many hospitals, labs, and physician offices voluntarily report positive rapid antigen tests to the state. During the 2011-12 season 48 positive tests were reported, 37 for influenza A, 7 for influenza B, and 4 for influenza, unsubtyped.

Rapid Positive Influenza Tests—Maine, 2011-12



Hantavirus Pulmonary Syndrome – First Case in Maine, 2011

Hantavirus pulmonary syndrome (HPS) is a life-threatening illness first identified in 1993 following an outbreak of unexplained, severe pulmonary illness in the southwestern United States. HPS is caused by hantavirus and is transmitted to humans by exposure to excreta of infected rodents. In the Northeast the most common carrier of hantavirus is the white-footed mouse. Humans contract the illness when they breathe aerosolized urine, droppings, or saliva of the infected rodent. As of December 15, 2010, a total of 560 HPS cases from 32 states had been reported to CDC, but none were diagnosed, or had exposures, in Maine.

On April 25, 2011, the Maine CDC was notified of a suspected case of HPS in a Maine resident aged 70 years with no recent out-of-state travel. The patient presented to a community hospital in early April with a 5-day history of fatigue, decreased appetite, weakness, chills, muscle aches, and progressive shortness of breath. After intensive care in a tertiary hospital the patient was discharged to a skilled nursing facility one month after presentation and recovered with extensive rehabilitation.

An investigation revealed that the patient had potential exposure to rodent excreta in several areas of a farm. The patient reportedly had climbed a ladder to place rodenticide in the upper level of a shed, which was noted to have rodent droppings scattered on insulation. No one else in the home or employed on the farm became ill.

This case highlights the importance of provider and public awareness of HPS and risk factors for hantavirus infection, even in regions of the United States that have not previously had documented cases. Early recognition of HPS can reduce mortality.

It is important to avoid exposure to hantavirus. Prevention of HPS includes the following:

Seal Up – seal up rodent entry holes or gaps in living areas

Trap Up – trap rodents with an appropriate snap trap

Clean Up – clean rodent food sources and nesting sites. It is important to take appropriate precautions when cleaning rodent infested areas. These steps include applying gloves and thoroughly wetting the affected area with a bleach solution before wiping up contamination with a damp cloth.

Community Outbreak of Shigellosis — Maine, 2011

Shigellosis is an acute bacterial infection characterized by diarrhea, vomiting, nausea, and fever. Symptoms usually begin 24 to 48 hours after ingestion of the bacteria and typically last 5 to 7 days. Shigellosis is highly infectious; as few as 10 organisms can cause illness. Shigellosis can easily be passed from one person to another through the fecal-oral route. *Shigella* can be transmitted by eating contaminated food, contact with contaminated fomites, and drinking, swimming in or playing with contaminated water.

Between 2006 and 2010 the median number of *Shigella* cases per year in Maine was 8. The 24 cases involved in this outbreak was higher than what is usually seen in the state in an entire year.

In May 2011, Maine CDC received a report of a laboratory confirmed case of *Shigella* in an adult male from Androscoggin county. Additional testing at the Health and Environmental Testing Laboratory (HETL) confirmed the specimen as *Shigella sonnei*. A case investigation was conducted by Maine CDC to identify possible sources of exposure, search for additional cases and implement control measures to prevent further transmission. An interview with the patient revealed no ill contacts and no recent travel. Over the next six months, an additional 14 confirmed cases of shigellosis were reported in residents of Androscoggin county. There were nine probable cases identified in family and household contacts of confirmed cases. Of the 24 cases reported, 19 occurred in residents of an ethnic community in Androscoggin county. Twenty (83%) of the 24 cases were less than 18 years old.

The investigation focused on finding similarities among exposures reported by infected persons. Exposures such as swimming at a local recreation site, shopping at local markets, and association with a particular housing complex, including an onsite child care center, were explored. As the outbreak continued, however, it became evident that there was ongoing person to person transmission or a recurring exposure. The focus shifted to promoting prevention messages in the community. Cases were linked by DNA “fingerprinting” through specific diagnostic testing, pulsed-field gel electrophoresis (PFGE). The source of infection could not be determined.

The most important way to prevent the spread of *Shigella* is through routine and thorough hand washing, especially after using the toilet, changing a diaper, and before preparing food or beverages. Other prevention recommendations include:

- Supervise children washing hands to ensure washing hands properly
- Properly dispose of soiled diapers
- Clean diaper changing areas with a disinfectant such as household bleach after use
- Exclude individuals who work in daycare, healthcare with direct patient contact or food handlers from the work place
- Exclude symptomatic children from daycare or other child group activity settings
- People with diarrhea should not prepare or serve food or beverages for others

Outbreak of *Salmonella* Typhimurium - 2011

On December 8, 2011 the federal CDC informed the Maine CDC of 3 cases of *Salmonella* Typhimurium that matched a national cluster centered in the northeastern states. In the following week a fourth case was identified in Maine with a DNA fingerprint matching to a national cluster. The common exposure reported by cases was consumption of ground beef purchased at a common supermarket chain.

Interviews were conducted with each of the 4 individuals in Maine. The initial interview identified ground beef as a common food consumed. The second targeted questionnaire revealed types of ground beef and place of purchase. Individuals were instructed to call Store A's hotline to receive receipts of purchase if they no longer had them to verify the date and time of purchase. The Maine cases resided in four different counties and were unrelated to each other. Two of the individuals were hospitalized. All four recovered from their illness. The *Salmonella* strain that was identified as Typhimurium was found to be resistant to several commonly used antibiotics. A sample of ground beef from the freezer of one of the Maine cases was analyzed and found to match the genetic strain of the outbreak. Table 1 compares the characteristics of the Maine cases to those in other states.

The investigation resulted in a large ground beef recall by Store A. A full investigation was performed by the USDA to determine where the ground beef might have originated. Due to common Store A practices in mixing and grinding ground beef from multiple sources, considered legal by the USDA, no further trace back could be performed. This outbreak highlighted limitations in conducting trace backs. Congress and regulatory agencies are considering evaluating grinding practices to ensure that a comprehensive trace back will reveal the source of the contamination.

Table 1. Characteristics of *Salmonella* Typhimurium cases, Maine and U.S.

	Maine	US
Cases	4	19
Gender— male/female	2/2	10/9
Age	31-79 yrs., median 46 yrs.	1-79 yrs., median 44 yrs.
Counties/States	York (1), Cumberland (1), Waldo (1), Androscoggin (1)	HI(1), KY(1), MA(1), ME (4),NH(6), NY(5), VT(1)
Common Exposure	Ground beef (4): Store A (3), other store (1)	Ground beef (14): Store A (12), other store (2)
Hospitalizations	2	9

Influenza A/H3N2v—Maine, 2011

Influenza viruses are known to circulate in non-human animals, including birds and swine. Swine flu viruses do not normally infect humans, however sporadic human infections do occur. Most commonly, human infections with variant swine viruses occur in persons with exposure to infected pigs. From August 2011 through December 2011, 12 humans in the U.S. became infected with influenza A swine flu viruses, also known as H3N2v. Two of these infections occurred in children in Maine.

On October 14, 2011 Maine's Health and Environmental Testing Laboratory (HETL) notified the Division of Infectious Disease (DID) of an influenza A sample that was positive for H3 and the swine component of H1N1. This sample was forwarded to federal CDC where it was confirmed as swine-origin triple reassortant influenza A/H3N2. The patient was a 7 year old male with onset of fever, cough, headache, sore throat and myalgia on October 7, 2011. The patient had a history of asthma and had received the 2010-2011 influenza vaccine. The patient visited an agricultural fair on multiple days and spent time in the swine barn. The patient was treated with oseltamivir and recovered.

On October 28, 2011 HETL notified DID of an influenza A sample that was weakly positive for H3, with swine exposure noted on the submission form. The sample was forwarded to federal CDC where it was confirmed as swine-origin triple reassortant influenza A/H3N2. The patient was an 8 year old male with onset of fever, myalgia, and runny nose on October 22, 2011. The patient visited the same agriculture fair over multiple days and participated in a pig scramble. The patient also helped take care of pigs at family friend's farm. The patient had received the 2010-2011 influenza vaccine, was not treated with antivirals, and recovered.

Both cases were interviewed and enhanced surveillance was recommended among their families and at their schools. Although other cases of illness were reported, no other persons tested positive for influenza. Maine CDC was not able to identify any human to human transmission from either case.

The agricultural response included contacting all the swine exhibitors from the agricultural fair. All farms were visited by a veterinarian, and any ill pigs were swabbed for influenza. No swine tested positive, however there was a time lapse between the fair and testing. The residents and employees of the farms were interviewed about influenza like illness symptoms. Although ill individuals were identified, no other persons tested positive for influenza.

There are many ways to reduce the risk of influenza, including H3N2v influenza:

- Wash your hands, including after contact with pigs or other animals
- Cover your cough to help protect other humans AND pigs
- Stay home if you are ill, and do not come into contact with pigs if you are ill. They can get the virus from you, and pass it along to another pig, or another person
- Get vaccinated. The vaccine will not prevent infection with new, variant viruses, but it can help reduce the severity of illness, and will help protect both humans and animals from the commonly circulating strains of influenza.

Appendix F

Clostridium difficile Outbreaks – Maine, 2011

Clostridium difficile (*C. difficile*) is a spore-forming, Gram-positive anaerobic bacillus that produces two exotoxins: toxin A and toxin B. It is transmitted through the fecal-oral route and direct contact with contaminated surfaces. More than 90% of healthcare associated *C. difficile* infection occur after or during antibiotic therapy. Patients are at greater risk for *C. difficile* infection when they are older, take antibiotics, proton pump inhibitors or H2 blockers, have gastrointestinal surgery, have underlying conditions including immune system suppression, and stay in healthcare settings for long periods of time.

Among patients who are hospitalized for 1-2 weeks, 13% develop *C. difficile* illness; for patients hospitalized for more than 4 weeks, up to 50% may develop *C. difficile* illness. A person can be colonized with *C. difficile*; that is, the patient has no clinical symptoms but tests positive for *C. difficile* and/or its toxin. One study estimated 15% of healthcare workers are colonized with *C. difficile,* although other studies have shown lower rates. *C. difficile* infection is diagnosed with a positive test for *C. difficile* and/or its toxin and clinical symptoms. The national rate of *C. difficile* infections acquired in hospitals is 2.8 per 10,000 patient days, but this is considered an underestimate as it does not include cases diagnosed after patients leave the hospital.

Maine CDC supported the development of a new laboratory test to be used in outbreaks. Pulsed field gel electrophoresis (PFGE) for *C. difficile* testing is now available at the Maine Health and Environmental Testing Laboratory (HETL) for outbreak investigations. In 2011, four outbreaks of *C. difficile* were reported to Maine CDC; three in nursing facilities and one in a hospital setting.

- One nursing facility in central Maine reported 7 laboratory confirmed and one probable case among residents over a 12 month period. Among specimens collected from 12 residents, 6 were positive by PCR and 4 had PFGE testing completed. Three of the specimens matched by PFGE, and all three were epi-linked, either through eating meals together or were roommates at the facility. Two of the cases were roommates, however, illness onset was ten months later.
- A second central Maine nursing home reported 8 confirmed cases and 1 probable case. None of the cases matched by PFGE, thus no evidence of cross contamination was found.
- A nursing home in Western Maine had 2 cases with a possible epidemiological linkage. The two cases were found to have matching PFGE patterns. Enhanced environmental cleaning was performed and no new cases have occurred as of May 2012.
- In a hospital outbreak, *C. difficile* spread throughout floor A of the facility over three months. After a patient from floor A was transferred to floor B, the outbreak spread and patients in six rooms on the first floor were diagnosed with *C. difficile* in less than five weeks. Nine laboratory confirmed cases were identified in patients in ten different rooms on two floors. A total of four specimens from both floor A and B were found to be a related strain by PFGE testing.

In all the outbreaks investigated, all related *C. difficile* strains were the NAP1 variety. This variety is associated with increased incidence and severity of disease. Of note, PFGE testing has demonstrated 28 patterns throughout Maine. Aroostook county, southern Maine, central Maine, and Bangor have been found to have unique *C. difficile* patterns.

Healthcare Associated Infections

Healthcare Associated Infections (HAIs) are among the top ten causes of death in the U.S. It is estimated that 1.7 million HAIs occur per year in the U.S., and result in 99,000 deaths, at a cost of $33 billion. Because HAIs have a substantial impact on health and heathcare costs, there is a growing focus on the need to monitor and prevent HAIs. In 2009, the Maine CDC received federal funds to develop an HAI prevention program. The Maine CDC works closely with an advisory group which has representatives from all Maine hospitals. Additionally, Maine CDC coordinates with other state and federal agencies, healthcare providers, and professional groups to prevent HAIs. The focus of the program is for hospitals to report HAIs using uniform nationally recognized definitions. In particular, the focus is to reduce:

1. Central line associated bloodstream infections (CLABSI)
2. Methicillin resistant *Staphylococcus aureus* (MRSA) infections
3. *Clostridium difficile* infections,
4. Catheter associated urinary tract infections, and
5. Surgical site infections.

Accomplishments of the HAI program to date:

- Creation of a new infrastructure within Maine CDC for the HAI program.
- Working closely with the Maine Health Data Organization and the Maine Quality Forum to streamline HAI reporting by hospitals.
- Providing data management support and epidemiology training for Infection Preventionists.
- Educating and supporting efforts for hospitals to develop antibiotic stewardship programs.
- Providing training on hospital outbreak investigations and improving healthcare facility outbreak reporting to Maine CDC.
- Creating an HAI website for the general public.
- Increasing state public health lab capacity to identify organisms likely to cause HAI outbreaks.

HAI program future projects include:

- Analysis and validation of MRSA-HAI, *Clostridium difficile*-HAI, and central line infections.
- Continue to supply assistance for outbreaks occurring in hospitals and Long Term Care Facilities.
- Provide training and resource materials for infection prevention to Long Term Care Facilities throughout the state.
- Educate hospitals and physicians regarding antibiotic stewardship in an effort to reduce multiple drug resistant organisms.

HAI reduction in Maine

Through the efforts of multiple state agencies and professional organizations, Maine has reduced central line associated bloodstream infections by 44%, from July 1, 2007– June 30, 2008 to July 1, 2010 – June 30, 2011. The use of "bundles" to prevent central line infections improved from 78% to 96% for surgical areas and 71% to 92% in intensive care units during that same time period. Now that hospitals are reporting standardized data in the National Healthcare Safety Network (NHSN), Maine CDC will be able to analyze the data for reductions in MRSA-HAIs and C. difficile-HAIs over time.

2011 Tick Data Collected by the Maine Medical Center Research Institute Vector-Borne Disease Laboratory

The Maine Medical Center Research Institute (MMCRI) Vector-Borne Disease Laboratory operates a free tick identification service as part of a program to establish the distribution of deer ticks (*Ixodes scapularis*) in the state. Ticks found on people and pets are submitted with information on where the tick(s) may have been acquired. Ticks are not tested for the presence of Lyme bacteria and MMCRI only accepts ticks from the state of Maine.

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 or not a particular area is already widely known to have a deer tick presence).

Number of Ticks Identified by County and Type, Maine, 2011

County	*Ixodes scapularis* **(Deer Tick)**	*Dermacentor variabilis* **(American Dog Tick)**	*Ixodes cookei* **(Woodchuck Tick)**	*A. americanum* **(Lonestar Tick)**
Androscoggin	33	3	0	1
Aroostook	12	1	2	1
Cumberland	219	36	2	0
Franklin	17	3	2	0
Hancock	183	16	2	2
Kennebec	56	8	1	1
Knox	51	13	0	0
Lincoln	21	2	0	0
Oxford	44	2	3	0
Penobscot	120	9	4	1
Piscataquis	23	1	2	0
Sagadahoc	27	5	0	0
Somerset	39	7	3	0
Waldo	82	4	3	0
Washington	14	0	0	0
York	74	21	0	0
Unspecified	17	1	1	0
Totals	1032	132	25	6

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.

How are ticks submitted?

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.

Ticks should be sealed in a small, crushproof vial of 70% alcohol. The vial should be padded with absorbent paper towel and sealed in a plastic bag, and mailed along with a completed submission form to:

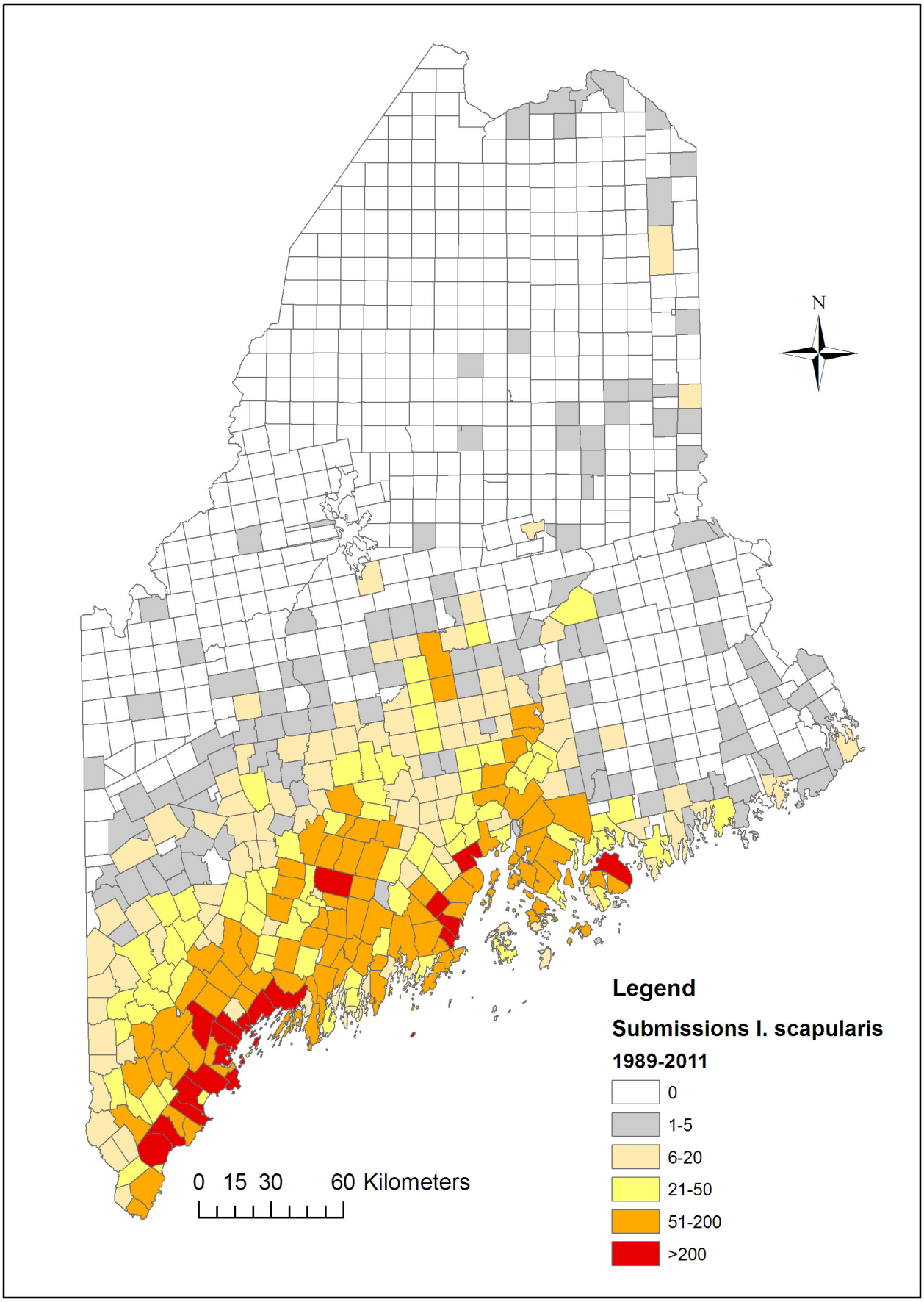
Vector-borne Disease Laboratory
Maine Medical Center Research Institute
75 John Roberts Rd., Suite 9B
South Portland, ME 04106

Print out the submission form from http://www.mmcri.org/lyme/lymeform.html, complete it, and mail it in with the specimen. A report of the tick's identification will be sent to the submitter as soon as possible, usually within five days. A map may also be sent to assist in the identification of the site where tick exposure occurred. The public may address questions to the laboratory's email address: ticklab@mmc.org.

Map Caption

A map summarizing the number of *Ixodes scapularis* (deer tick) submitted per Minor Civil Division, 1989 through 2011.

Submissions of *Ixodes scapularis* to MMCRI, 1989-2011



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

NOTIFIABLE CONDITIONS LIST

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

Conditions in **BOLD** must be reported *immediately* All others must be reported in 48 hours

Reportable Disease or Condition		Laboratory Specimen Submission
Acquired Immunodeficiency Syndrome (AIDS)	Malaria	Directors of laboratories are to submit cultures or clinical specimens for the following to the *Maine Health and Environmental Testing Laboratory* for confirmation, typing and/or antibiotic sensitivity:
Anthrax	**Measles**	Acid-Fast Bacillus
Arboviral Infection	Meningitis (bacterial)	***Bacillus anthracis***
Babesiosis	**Meningococcal Invasive Disease**	***Bordetella pertussis***
Botulism	**Mumps**	***Brucella* species**
Brucellosis	Paralytic Shellfish Poisoning	***Clostridium tetani***
Campylobacteriosis	**Pertussis**	***Clostridium botulinum***
Carbon Monoxide Poisoning, including	**Plague**	***Corynebacterium diphtheriae***
- Clinical signs, symptoms or known exposure consistent with diagnosis of carbon monoxide poisoning and/or: a carboxyhemoglobin (COHb) level ≥5%	**Poliomyelitis**	***Coxiella burnetii***
	Psittacosis	*Escherichia coli, Shiga toxin-producing*
Chancroid	**Q Fever**	*Haemophilus influenzae*
Chlamydia	**Rabies (human and animal)**	*Human Immunodeficiency* Virus
Chickenpox (Varicella)	Rabies Post-Exposure Prophylaxis	***Influenza* virus, Novel**
Creutzfeldt-Jakob disease, <55 years of age	**Ricin Poisoning**	*Listeria monocytogenes*
Cryptosporidiosis	Rocky Mountain Spotted Fever	***Mumps* virus**
Dengue	**Rubella (including congenital)**	***Mycobacterium tuberculosis***
Diphtheria	Salmonellosis	***Neisseria meningitidis***
E. coli, Shiga toxin-producing (STEC) disease including E. coli: 0157:H7	**Severe Acute Respiratory Syndrome (SARS)**	***Rabies* virus**
Ehrlichiosis	Shigellosis	**Ricin Poisoning**
Giardiasis	**Smallpox**	***Rubella* virus**
Gonorrhea	Staphylococcus aureus, Methicillin-Resistant (MRSA) invasive,	***Rubeola* virus**
Haemophilus influenzae disease, invasive, include all serotypes	**Staphylococcus aureus with resistance (VRSA) or intermediate resistance (VISA) to Vancomycin isolated from any site**	*Salmonella* species
Hantavirus, pulmonary syndrome	**Staphylococcal enterotoxin B**	***SARS Coronavirus***
Hemolytic-uremic syndrome (post-diarrheal)	Streptococcal invasive disease, Group A	*Shigella* species
Hepatitis A, B, C, D, E (acute)	Streptococcal invasive disease, Group B	*Toxoplasma gondii*
Hepatitis B (chronic, and/or perinatal)	Streptococcus pneumoniae, invasive disease	***Variola* virus**
Hepatitis C (chronic)	Syphilis	*Vibrio* species
Hepatitis, acute (etiologic tests pending or etiology unknown)	**Tetanus**	***Yersinia pestis***
Human Immunodeficiency Virus (HIV), including:	Toxoplasmosis	
- Confirmed, positive antibody tests	Trichinosis	
- Viral load tests, all results	**Tuberculosis (active and presumptive cases)**	
- CD4 lymphocyte counts, all results	**Tularemia**	
Influenza-associated pediatric death	**Unusual or increased case incidence, critical illness, unexplained death(s) of any suspect infectious disease**	
Influenza-like illness outbreaks	Vibrio species, including Cholera	
Influenza A, Novel	**Viral Hemorrhagic Fever**	
Legionellosis	**Venezuelan equine encephalitis**	
Leptospirosis	Yellow Fever	
Listeriosis	Yersiniosis	
Lyme Disease		

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

When to report:

- Conditions in **BOLD** are reportable immediately by telephone on recognition or strong suspicion of disease
- All others are reportable by telephone, fax, or mail within 48 hours of recognition or strong suspicion of disease

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 and race
- 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

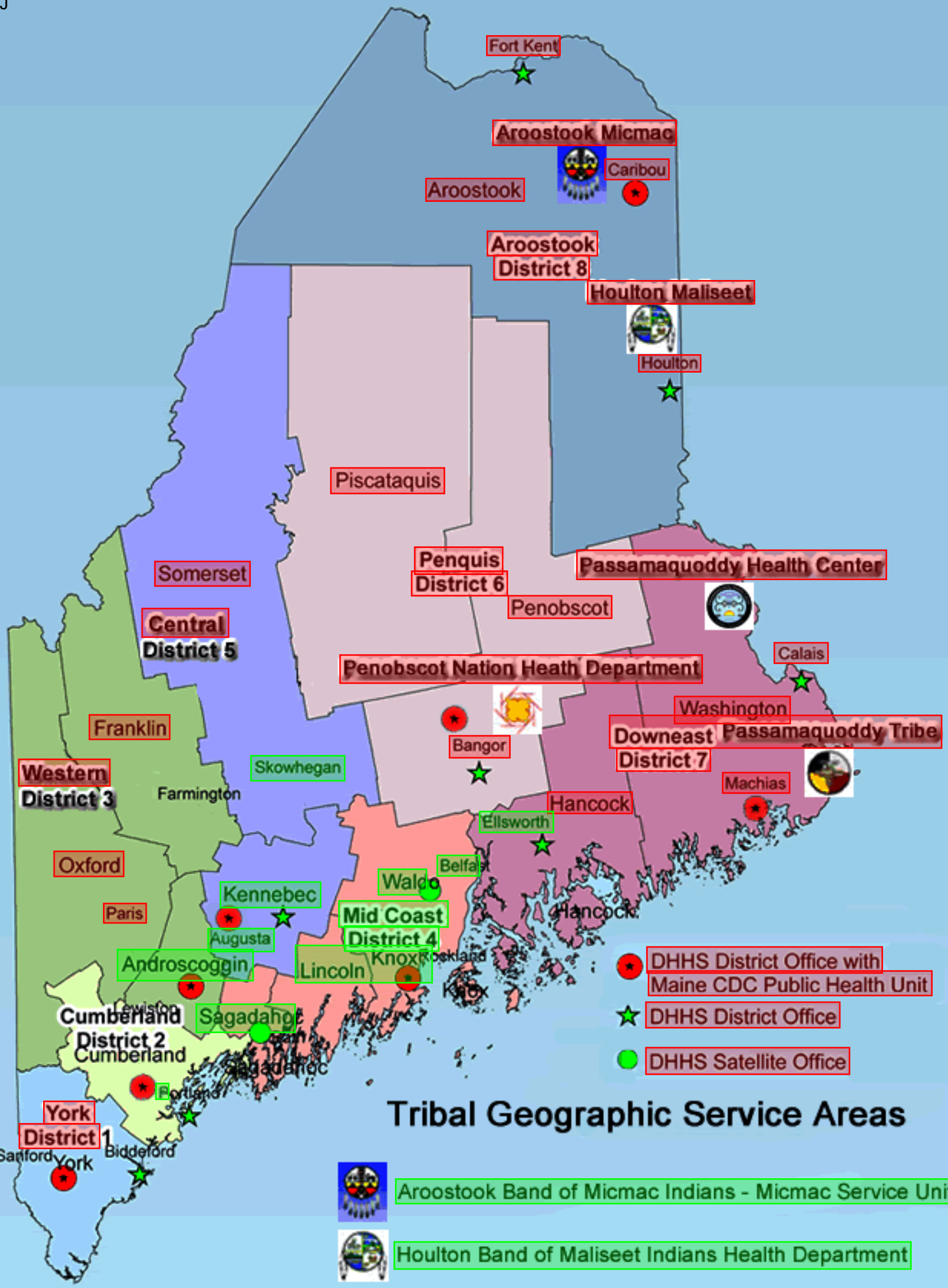
Complete Rules for the Control of Notifiable Conditions at:
http://www.maine.gov/dhhs/boh/ddc/epi/disease-reporting/index.shtml

Disease Reporting
24 Hours A Day
7 Days A Week

Telephone
1-800-821-5821

Fax
1-800-293-7534

April 4, 2008


Fort Kent
Aroostook Micmac
Caribou
Aroostook
Aroostook
District 8
Houlton Maliseet
Houlton
Piscataquis
Somerset
Penquis
District 6
Penobscot
Passamaquoddy Health Center
Central
District 5
Penobscot Nation Heath Department
Calais
Washington
Downeast Passamaquoddy Tribe
District 7
Bangor
Franklin
Skowhegan
Western
District 3
Farmington
Machias
Hancock
Ellsworth
Oxford
Belfast
Waldo
Kennebec
Hancock
Paris
Mid Coast
District 4
Augusta
Androscoggin
Lincoln
Knox
Rockland
Knox
Lewiston
Cumberland
District 2
Sagadahoc
Cumberland
Sagadahoc
Portland
York
District 1
Sanford
York
Biddeford
DHHS District Office with
Maine CDC Public Health Unit
DHHS District Office
DHHS Satellite Office
Tribal Geographic Service Areas
Aroostook Band of Micmac Indians - Micmac Service Unit
Houlton Band of Maliseet Indians Health Department
Passamaquoddy Health center - Indian Township
Passamaquoddy Tribe - Pleasant Point Health
Penobscot Nation Health Department
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

Department of Health and Human Services
Maine Center for Disease Control and Prevention
State House Station #11
Augusta, ME 04333-0011

Paul R. LePage
Governor

Mary Mayhew
Commissioner

Sheila Pinette, DO
Director, Maine Center for Disease Control and Prevention

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