

2018

# MAINE REPORTABLE INFECTIOUS **DISEASES SUMMARY**





## Reportable Infectious Diseases in Maine 2018 Summary

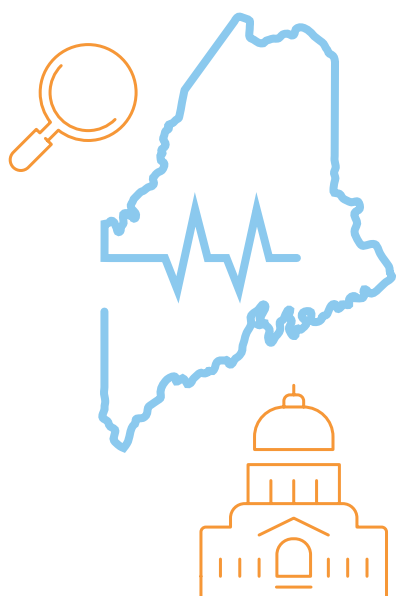
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# THANK YOU

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

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

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

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

For more information on what, when, and how to report infectious diseases please see the Notifiable Diseases and Conditions List (Page 73) of this report, visit our website at [www.maine.gov/idepi](http://www.maine.gov/idepi) or call 1-800-821-5821.

Ann Farmer, MS

Associate Director, Division of Disease Surveillance

Maine Center for Disease Control and Prevention

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# 2018 INFECTIOUS DISEASE SURVEILLANCE HIGHLIGHTS

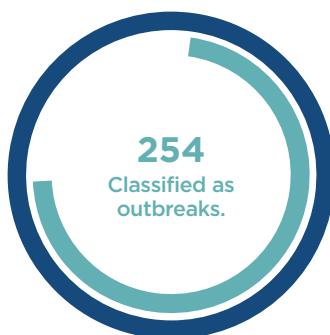
**4,879**

Disease reports investigated by Maine CDC staff including STD cases.



**344**

Potential outbreaks investigated by Maine CDC staff.



**9,757**

Disease reports handled without a full investigation by staff, either through passive surveillance or laboratory reports.\*



\*The main diseases include chlamydia, hepatitis C, Lyme disease, rabies post-exposure prophylaxis, and some varicella and invasive MRSA cases.

**69**

People with hepatitis C identified as at risk for hepatitis B.



Maine CDC initiated contact with providers to recommend vaccination.



Maine CDC sponsored a hepatitis A vaccine clinic in response to a confirmed case of hepatitis A in a person experiencing homelessness.

**185**

Received a hep A vaccine

**104**

Reported cases of infectious syphilis in 2018

**25%**

Increase from 2017

**4**

Mosquito pools tested positive for West Nile Virus (WNV)



Bangor is the farthest north Maine detected WNV in a mosquito pool

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# 100+

Influenza-related outbreaks  
during the 2018-2019 flu season

10,300+

Positive influenza  
reports

1,000+

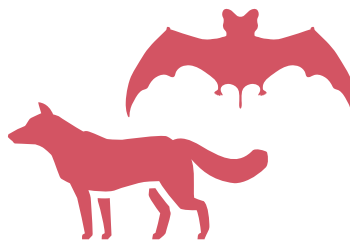
Influenza-related  
hospitalizations

45+

Influenza-related  
deaths

21

Reported pertussis  
outbreaks

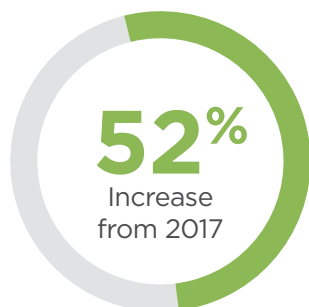


76

Animals tested positive  
for rabies at HETL

85

Reported cases of  
*Group A Streptococcus*



3,620

2018 Maine CDC Infectious  
Disease Program consults

TOP 5

Rabies (32%), influenza, pertussis,  
tuberculosis, and varicella

10%

of all consults occurred in August

# COUNTS OF SELECTED\*

## REPORTABLE DISEASES BY YEAR

MAINE, 2009-2018\*\*

CONDITION	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
<i>Anaplasma phagocytophilum</i>	15	17	26	52	94	191	185	372	663	<b>476</b>
Babesiosis	3	5	9	10	36	42	55	82	118	<b>101</b>
Brucellosis	0	2	0	0	0	0	0	0	1	<b>0</b>
Campylobacteriosis	172	148	195	189	229	225	221	255	234	<b>247</b>
Carbapenem-resistant Enterobacteriaceae (CRE)***	NR	NR	NR	NR	NR	NR	12	51	58	<b>92</b>
Chikungunya Virus	NA	NA	0	0	1	6	2	0	1	<b>2</b>
<i>Chlamydia trachomatis</i> infection	2443	2588	3101	3413	3440	3491	3851	4152	4555	<b>4346</b>
Creutzfeldt-Jakob Disease (CJD)	1	0	0	0	1	1	1	0	0	<b>0</b>
Cryptosporidiosis	67	93	51	58	35	51	34	55	45	<b>60</b>
Cyclosporiasis	0	1	0	0	0	7	1	3	0	<b>0</b>
Dengue	3	6	0	0	1	1	5	2	0	<b>3</b>
Eastern Equine Encephalitis	0	0	0	0	0	1	1	0	0	<b>0</b>
<i>Ehrlichiosis, chaffeensis</i>	1	4	1	3	3	8	5	7	10	<b>19</b>
Giardiasis	223	223	171	169	218	154	116	137	129	<b>163</b>
Gonorrhea	143	163	273	456	246	236	422	444	577	<b>686</b>
Group A <i>Streptococcus</i> , invasive	21	47	43	37	37	53	56	60	56	<b>85</b>
<i>Haemophilus influenzae</i> , invasive	21	13	26	23	25	21	39	29	34	<b>24</b>
Hantavirus infection, non-Hantavirus pulmonary syndromes	0	0	1	0	0	0	0	0	0	<b>0</b>
Hemolytic uremic syndrome	2	1	2	2	2	1	7	2	2	<b>0</b>
Hepatitis A, acute	1	7	6	9	10	8	8	8	7	<b>9</b>
Hepatitis B, acute	15	13	8	9	11	12	9	53	77	<b>52</b>
Hepatitis B, chronic	125	102	105	105	106	108	107	159	179	<b>201</b>
Hepatitis C, acute	2	2	12	12	9	31	29	37	32	<b>39</b>
Hepatitis C, chronic	1112	1016	1085	1151	1235	1409	1444	1648	1878	<b>1872</b>
Hepatitis D, acute	0	1	1	0	0	0	0	0	0	<b>0</b>
Hepatitis E, acute	0	0	1	0	0	0	0	1	0	<b>0</b>
HIV Infection	51	57	51	46	33	61	48	53	29	<b>30</b>
Influenza Associated Pediatric Mortality	0	0	0	0	0	1	0	1	0	<b>0</b>
Invasive Pneumococcal Disease	168	151	136	102	121	137	135	133	141	<b>132</b>
Legionellosis	10	12	18	18	23	19	16	16	16	<b>34</b>

NR = not reportable; NA = not available



CONDITION	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Listeriosis	4	1	4	5	4	8	7	11	5	7
Lyme disease	976	752	1013	1113	1384	1411	1215	1498	1855	1405
Malaria	2	6	6	5	10	7	7	10	18	9
Measles (Rubeola)	0	0	0	0	0	0	0	0	1	0
Mumps	6	2	2	0	1	0	0	34	1	4
<i>Neisseria meningitidis</i> , invasive (Mening. disease)	4	5	5	3	4	2	4	1	1	1
Novel Influenza A virus Infections	2219	17	3	0	0	0	0	0	0	0
Pertussis	80	53	205	737	332	557	281	259	411	446
Powassan	0	0	0	0	1	0	1	1	3	0
Q fever	0	0	2	0	0	0	0	0	0	1
Rabies PEP	59	77	145	190	128	107	112	131	108	152
Rabies, animal	63	67	66	91	50	44	28	66	61	76
<i>S. aureus</i> , methicillin resistant (MRSA), invasive	123	90	121	116	130	143	191	178	180	243
<i>S. aureus</i> , vancomycin intermediate resistance (VISA)	0	0	0	0	0	1	2	1	0	0
Salmonellosis	121	135	134	161	131	127	123	123	102	119
Shellfish poisoning	1	0	0	0	0	0	0	0	0	0
Shiga toxin-producing <i>Escherichia coli</i> (STEC)	19	21	28	20	27	33	29	37	34	37
Shigellosis	5	8	32	7	5	29	4	2	13	7
Spotted Fever Rickettsiosis	5	2	1	3	2	3	1	4	3	10
Syphilis	14	40	19	20	17	15	49	48	83	104
Tetanus	0	0	0	0	1	0	0	1	1	0
Trichinosis (Trichinellosis)	0	1	1	0	0	0	0	0	0	0
Tuberculosis	9	8	9	17	15	14	18	23	14	14
Varicella (Chickenpox)	235	247	226	258	140	207	233	228	198	252
Vibriosis	4	5	4	10	9	9	6	7	7	14
West Nile	0	0	0	1	0	0	1	0	0	2

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

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

\*\* Counts are updated annually. Data as of 6/5/2018

\*\*\* CRE became reportable as of September 8, 2015 so the 2015 numbers do not represent a full year

# RATES OF SELECTED\*

## REPORTABLE DISEASES BY YEAR

MAINE, 2009-2018\*\*  
(PER 100,000 PERSONS)

CONDITION	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
<i>Anaplasma phagocytophilum</i>	1.1	1.3	2.0	3.9	7.1	14.4	13.9	27.9	49.6	<b>35.6</b>
Babesiosis	0.2	0.4	0.7	0.8	2.7	3.2	4.1	6.2	8.8	<b>7.5</b>
Brucellosis	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.1	<b>0.0</b>
Campylobacteriosis	13.0	11.1	14.7	14.2	17.2	16.9	16.6	19.2	17.5	<b>18.5</b>
Carbapenem-resistant Enterobacteriaceae (CRE)***	NR	NR	NR	NR	NR	NR	0.9	3.8	4.3	<b>6.9</b>
Chikungunya Virus	NA	NA	0.0	0.0	0.1	0.5	0.2	0.0	0.1	<b>0.1</b>
<i>Chlamydia trachomatis</i> infection	185.3	194.9	233.5	256.8	258.8	262.3	289.7	311.8	341.0	<b>324.7</b>
Creutzfeldt-Jakob Disease (CJD)	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	<b>0.0</b>
Cryptosporidiosis	5.1	7.0	3.8	4.4	2.6	3.8	2.6	4.1	3.4	<b>4.5</b>
Cyclosporiasis	0.0	0.1	0.0	0.0	0.0	0.5	0.1	0.2	0.0	<b>0.0</b>
Dengue	0.2	0.5	0.0	0.0	0.1	0.1	0.4	0.2	0.0	<b>0.2</b>
Eastern Equine Encephalitis	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	<b>0.0</b>
<i>Ehrlichiosis, chaffeensis</i>	0.1	0.3	0.1	0.2	0.2	0.6	0.4	0.5	0.7	<b>1.4</b>
Giardiasis	16.9	16.8	12.9	12.7	16.4	11.6	8.7	10.3	9.7	<b>12.2</b>
Gonorrhea	10.8	12.3	20.6	34.3	18.5	17.7	31.7	33.3	43.2	<b>51.3</b>
Group A <i>Streptococcus</i> , invasive	1.6	3.5	3.2	2.8	2.8	4.0	4.2	4.5	4.2	<b>6.4</b>
<i>Haemophilus influenzae</i> , invasive	1.6	1.0	2.0	1.7	1.9	1.6	2.9	2.2	2.5	<b>1.8</b>
Hantavirus infection, non-Hantavirus pulmonary syndromes	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	<b>0.0</b>
Hemolytic uremic syndrome	0.2	0.1	0.2	0.2	0.2	0.1	0.5	0.2	0.1	<b>0.0</b>
Hepatitis A, acute	0.1	0.5	0.5	0.7	0.8	0.6	0.6	0.6	0.5	<b>0.7</b>
Hepatitis B, acute	1.1	1.0	0.6	0.7	0.8	0.9	0.7	4.0	5.8	<b>3.9</b>
Hepatitis B, chronic	9.5	7.7	7.9	7.9	8.0	8.1	8.0	11.9	13.4	<b>15.0</b>
Hepatitis C, acute	0.2	0.2	0.9	0.9	0.7	2.3	2.2	2.8	2.4	<b>2.9</b>
Hepatitis C, chronic	84.4	76.5	81.7	86.6	92.9	105.9	108.6	123.8	140.6	<b>139.9</b>
Hepatitis D, acute	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	<b>0.0</b>
Hepatitis E, acute	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	<b>0.0</b>
HIV Infection	3.9	4.3	3.8	3.5	2.5	4.6	3.6	4.0	2.2	<b>2.2</b>
Influenza Associated Pediatric Mortality	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.0	<b>0.0</b>
Invasive Pneumococcal Disease	12.7	11.4	10.2	7.7	9.1	10.3	10.2	10.0	10.6	<b>9.9</b>
Legionellosis	0.8	0.9	1.4	1.4	1.7	1.4	1.2	1.2	1.2	<b>2.5</b>

NR = not reportable; NA = not available

CONDITION	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Listeriosis	0.3	0.1	0.3	0.4	0.3	0.6	0.5	0.8	0.4	0.5
Lyme disease	74.0	56.6	76.3	83.8	104.1	106.0	91.4	112.5	138.9	105.0
Malaria	0.2	0.5	0.5	0.4	0.8	0.5	0.5	0.8	1.3	0.7
Measles (Rubeola)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
Mumps	0.5	0.2	0.2	0.0	0.1	0.0	0.0	2.6	0.1	0.3
<i>Neisseria meningitidis</i> , invasive (Mening. disease)	0.3	0.4	0.4	0.2	0.3	0.2	0.3	0.1	0.1	0.1
Novel Influenza A virus Infections	168.3	1.3	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pertussis	6.1	4.0	15.4	55.5	25.0	41.9	21.1	19.5	30.8	33.3
Powassan	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.2	0.0
Q fever	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Rabies PEP	4.5	5.8	10.9	14.3	9.6	8.0	8.4	9.8	8.1	11.4
Rabies, animal	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
<i>S. aureus</i> , methicillin resistant (MRSA), invasive	9.3	6.8	9.1	8.7	9.8	10.7	14.4	13.4	13.5	18.2
<i>S. aureus</i> , vancomycin intermediate resistance (VISA)	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.1	0.0	0.0
Salmonellosis	9.2	10.2	10.1	12.1	9.9	9.5	9.3	9.2	7.6	8.9
Shellfish poisoning	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Shiga toxin-producing <i>Escherichia coli</i> (STEC)	1.4	1.6	2.1	1.5	2.0	2.5	2.2	2.8	2.5	2.8
Shigellosis	0.4	0.6	2.4	0.5	0.4	2.2	0.3	0.2	1.0	0.5
Spotted Fever Rickettsiosis	0.4	0.2	0.1	0.2	0.2	0.2	0.1	0.3	0.2	0.7
Syphilis	1.1	3.0	1.4	1.5	1.3	1.1	3.7	3.6	6.2	7.8
Tetanus	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.1	0.0
Trichinosis (Trichinellosis)	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Tuberculosis	0.7	0.6	0.7	1.3	1.1	1.1	1.4	1.7	1.0	1.0
Varicella (Chickenpox)	17.8	18.6	17.0	19.4	10.5	15.6	17.5	17.1	14.8	18.8
Vibriosis	0.3	0.4	0.3	0.8	0.7	0.7	0.5	0.5	0.5	1.0
West Nile	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.1

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

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

\*\* Counts are updated annually. Data as of 6/5/2018

\*\*\* CRE became reportable as of September 8, 2015 so the 2015 numbers do not represent a full year

# CASES OF REPORTED DISEASES BY AGE AND GENDER

MAINE, 2018

CONDITION	GENDER		AGE GROUP							
	F	M	0-5 years	5-14 years	15-24 years	25-34 years	35-44 years	45-54 years	55-64 years	65+ years
<i>Anaplasma phagocytophilum</i>	178	298	5	10	8	16	32	67	114	224
Babesiosis	28	73	0	2	2	4	7	14	21	51
<i>Borrelia miyamotoi</i>	5	3	0	1	0	1	1	0	2	3
Campylobacteriosis	112	135	11	13	14	34	25	40	40	70
Carbapenem-resistant <i>Enterobacteriaceae</i> (CRE)	60	32	0	3	2	2	1	12	11	61
Chikungunya Virus	1	1	0	0	0	0	1	1	0	0
<i>Chlamydia trachomatis</i> infection	2854	1492	866	10	2299	921	183	48	14	5
Coccidioidomycosis	1	1	0	0	0	0	1	0	0	1
Cryptosporidiosis	38	22	3	10	10	12	7	5	6	7
Dengue	2	1	0	0	1	0	1	1	0	0
<i>Ehrlichiosis, chaffeensis</i>	10	9	1	1	1	1	0	5	1	9
Ehrlichiosis/Anaplasmosis, undetermined	6	3	0	1	2	0	1	2	0	3
Emerging Infection	0	1	0	0	0	0	0	1	0	0
Giardiasis	72	91	5	10	20	17	19	22	36	34
Gonorrhea	246	440	0	2	239	243	114	53	32	3
Group A <i>Streptococcus</i> , invasive	32	53	1	2	3	12	9	7	7	44
<i>Haemophilus influenzae</i> , invasive	15	9	3	2	1	1	0	2	6	9
Hepatitis A, acute	5	4	0	0	0	1	2	1	3	2
Hepatitis B, acute	22	30	0	0	2	9	23	13	5	0
Hepatitis B, chronic	63	138	2	3	9	44	63	38	22	20
Hepatitis C, acute	17	22	0	0	3	14	15	6	1	0
Hepatitis C, chronic	824	1048	6	3	200	577	373	228	295	190
HIV	7	23	0	0	3	11	8	4	3	1
Invasive Pneumococcal Disease	69	63	4	1	1	7	9	18	32	60
Jamestown Canyon virus	1	0	0	0	0	0	0	0	0	1
Legionellosis	15	19	0	0	0	1	3	8	7	15
Listeriosis	4	3	0	0	0	0	0	1	1	5
Lyme disease	604	801	60	192	91	82	112	165	281	422

	GENDER		AGE GROUP							
CONDITION	F	M	0-5 years	5-14 years	15-24 years	25-34 years	35-44 years	45-54 years	55-64 years	65+ years
Malaria	5	4	0	1	3	1	1	2	1	0
Mumps	1	3	1	0	1	1	1	0	0	0
<i>Neisseria meningitidis</i> , invasive (Mening. disease)	1	0	1	0	0	0	0	0	0	0
Pertussis	215	231	147	177	87	7	9	6	7	6
Q fever	0	1	0	0	0	0	0	0	0	1
Rabies PEP	94	58	12	10	16	28	23	26	18	19
Rabies, animal	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
<i>S. aureus</i> , methicillin resistant (MRSA), invasive	94	149	2	3	6	32	24	25	38	113
Salmonellosis	61	58	7	9	9	14	10	20	20	30
Shiga toxin-producing <i>Escherichia coli</i> (STEC)	24	13	7	1	9	4	6	1	4	5
Shigellosis	3	4	1	0	3	1	1	0	1	0
Spotted Fever Rickettsiosis	4	6	0	1	1	3	2	0	2	1
Streptococcal toxic-shock syndrome	5	7	1	0	0	1	1	1	1	7
Syphilis	8	96	0	0	15	36	13	30	7	3
Tuberculosis	4	10	1	1	2	3	2	2	1	2
Varicella (Chickenpox)	144	108	58	59	15	18	14	15	24	49
Vibriosis	4	10	0	0	1	3	1	1	1	7
WNV, Non-Human	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
West Nile Fever	1	1	0	0	0	0	0	0	1	1

# CASES OF REPORTED DISEASES BY RACE AND ETHNICITY

MAINE, 2018

CONDITION	RACE							ETHNICITY		
	American Indian or Alaska Native	Asian or Pacific Islander	Black or African American	White	Two or more	Other	Unknown	Hispanic	Non-Hispanic	Unknown
<i>Anaplasma phagocytophilum</i>	2	2	1	460	0	0	11	5	424	47
Babesiosis	0	1	0	99	0	0	1	0	97	4
<i>Borrelia miyamotoi</i>	0	0	0	7	0	0	1	0	7	1
Campylobacteriosis	1	1	2	233	0	0	10	3	226	18
Carbapenem-resistant <i>Enterobacteriaceae</i> (CRE)	0	1	1	69	0	1	20	0	58	34
Chikungunya Virus	0	0	0	2	0	0	0	0	1	1
<i>Chlamydia trachomatis</i> infection	26	37	248	2632	6	148	1249	46	2167	2133
Coccidioidomycosis	0	0	0	2	0	0	0	0	2	0
Cryptosporidiosis	1	1	0	57	0	0	1	1	58	1
Dengue	0	0	0	3	0	0	0	0	3	0
<i>Ehrlichiosis, chaffeensis</i>	0	0	0	17	0	0	2	0	17	2
Ehrlichiosis/Anaplasmosis, undetermined	0	0	0	8	0	0	1	0	9	0
Emerging Infection	0	0	0	1	0	0	0	0	0	1
Giardiasis	0	1	8	147	0	0	7	1	148	14
Gonorrhea	5	7	117	497	16	17	27	24	578	84
Group A <i>Streptococcus</i> , invasive	0	0	2	79	0	2	2	1	79	5
<i>Haemophilus influenzae</i> , invasive	0	1	0	22	0	0	1	0	23	1
Hepatitis A, acute	0	0	0	9	0	0	0	1	7	1
Hepatitis B, acute	3	0	0	48	1	0	0	0	52	0
Hepatitis B, chronic	1	14	68	102	1	5	10	3	173	25
Hepatitis C, acute	2	0	1	33	0	0	3	0	34	5
Hepatitis C, chronic	7	3	23	1110	9	38	682	10	688	1174
HIV	1	1	5	23	0	0	0	2	28	0
Invasive Pneumococcal Disease	1	1	1	127	0	0	2	1	123	8
Jamestown Canyon virus	0	0	0	1	0	0	0	0	1	0
Legionellosis	0	0	0	31	0	0	3	0	30	4
Listeriosis	0	0	0	6	0	0	1	0	6	1

	RACE							ETHNICITY		
CONDITION	American Indian or Alaska Native	Asian or Pacific Islander	Black or African American	White	Two or more	Other	Unknown	Hispanic	Non-Hispanic	Unknown
Lyme disease	0	3	4	1172	0	0	226	6	513	886
Malaria	0	0	7	1	0	0	1	0	6	3
Mumps	0	0	0	3	0	0	1	1	3	0
<i>Neisseria meningitidis</i> , invasive (Mening. disease)	0	0	0	1	0	0	0	0	1	0
Pertussis	2	3	8	411	0	0	22	3	403	40
Q fever	0	0	0	1	0	0	0	0	1	0
Rabies PEP	0	1	0	114	0	2	35	1	92	59
Rabies, animal	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
<i>S. aureus</i> , methicillin resistant (MRSA), invasive	1	0	2	208	1	0	31	1	134	108
Salmonellosis	0	0	2	112	1	0	4	1	111	7
Shiga toxin-producing <i>Escherichia coli</i> (STEC)	0	1	0	31	0	0	5	1	30	6
Shigellosis	0	0	4	3	0	0	0	0	7	0
Spotted Fever Rickettsiosis	0	0	0	9	0	0	1	0	9	1
Streptococcal toxic-shock syndrome	0	0	0	12	0	0	0	0	12	0
Syphilis	1	1	4	89	2	1	6	1	82	21
Tuberculosis	0	2	8	4	0	0	0	0	14	0
Varicella (Chickenpox)	0	5	4	179	0	0	64	2	177	73
Vibriosis	0	0	0	13	0	0	1	0	13	1
WNV, Non-Human	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
West Nile Fever	0	0	0	2	0	0	0	0	2	0

# 2018 MAINE OUTBREAKS

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

## OUTBREAK CATEGORIES AND DEFINITIONS

**Absenteeism:** Absenteeism reports are submitted by schools when they have  $\geq 15\%$  absenteeism due to illness. If there is a single etiology an absenteeism report may also be counted as a disease-specific outbreak.

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

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

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

**Other:** Outbreaks in this category are not captured in any other group. Examples include *C. difficile*, multi-drug resistant organisms, or outbreaks caused by contaminated devices.

**Vaccine-Preventable Disease (VPD):** Vaccine-preventable disease outbreaks are caused by one of the illnesses for which there is a routine vaccine. The most commonly reported VPD outbreak is caused by pertussis. Pertussis was the cause of all VPD outbreaks in 2018.

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

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

	Androscoggin	Aroostook	Cumberland	Franklin	Hancock	Kennebec	Knox	Lincoln	Out of State	Oxford	Penobscot	Piscataquis	Sagadahoc	Somerset	Waldo	Washington	York	Total
Absenteeism	1	0	1	0	4	1	1	2	0	1	0	0	0	3	5	2	1	22
ADC	1	0	2	0	0	0	0	0	0	0	1	0	0	0	1	0	1	6
GI	10	2	19	0	0	7	4	2	11	0	4	0	0	1	0	0	9	69
ILI	10	6	34	1	2	11	9	1	0	8	8	0	4	6	0	4	23	127
Other	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
VPD	1	0	3	0	4	0	0	0	0	0	1	0	1	0	2	0	9	21
Varicella	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3	6
Vector	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	2
<b>Total</b>	<b>23</b>	<b>8</b>	<b>62</b>	<b>1</b>	<b>10</b>	<b>19</b>	<b>14</b>	<b>5</b>	<b>11</b>	<b>9</b>	<b>15</b>	<b>0</b>	<b>5</b>	<b>10</b>	<b>8</b>	<b>7</b>	<b>47</b>	<b>254</b>

\*ILI outbreaks included here are for the calendar year 2018, so includes outbreaks from the 2017-2018 and 2018-2019 influenza seasons. Any outbreak can be healthcare associated.



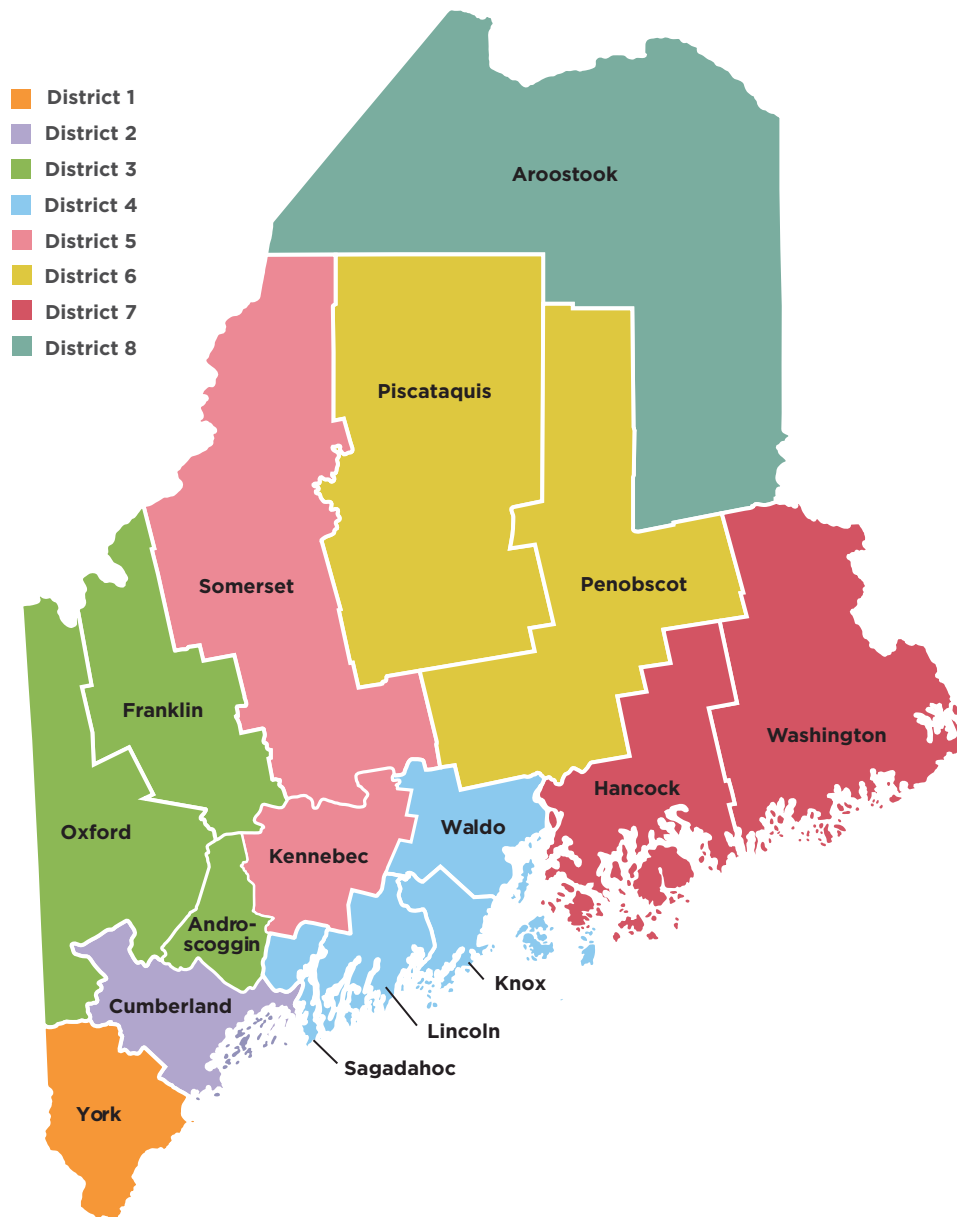
# PUBLIC DISTRICT HEALTH MAP

Since 2003, the Infectious Disease Programs of Maine CDC publish an annual summary of infectious disease data. Publishing reports on surveillance activities and data provides the health care community, government agencies, individuals, and groups with important statistical information on Maine's reportable diseases and conditions.

This annual report also includes information on conditions that are investigated that are not explicitly reportable but have public health significance. Examples of these conditions include *Borrelia miyamotoi*, Jamestown Canyon virus and Zika virus. Maine also follows up on unusual conditions that may not have specific case definitions but potentially have public health significance. These conditions are indicated by "Emerging Infections." In 2018 the emerging infection was a report of alpha-gal allergy that Maine CDC is monitoring. The goal of this annual report is to provide Maine CDC's partners with a helpful resource.

Maine CDC counts cases by their residence, not where they acquired the condition.

(Population data is from 2018 census estimates.)

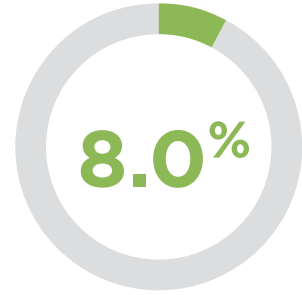


# ANDROSCOGGIN COUNTY



**107,679**

Population



Of Maine's Total  
Population

Condition	County		District		State	
	Count	Rate	Count	Rate	Count	Rate
<i>Anaplasma phagocytophilum</i>	31	28.8	48	24.6	476	35.6
Babesiosis	9	8.4	11	5.6	101	7.5
<i>Borrelia miyamotoi</i>	0	0.0	0	0.0	8	0.6
Campylobacteriosis	16	14.9	30	15.4	247	18.5
Carbapenem-resistant <i>Enterobacteriaceae</i> (CRE)	5	4.6	14	7.2	92	6.9
Chikungunya Virus	0	0.0	0	0.0	2	0.1
<i>Chlamydia trachomatis</i> infection	569	528.4	807	413.4	4346	324.7
Coccidioidomycosis	0	0.0	0	0.0	2	0.1
Cryptosporidiosis	0	0.0	1	0.5	60	4.5
Dengue	1	0.9	1	0.5	3	0.2
Ehrlichiosis, <i>chaffeensis</i>	3	2.8	3	1.5	19	1.4
Ehrlichiosis/Anaplasmosis, undetermined	1	0.9	2	1.0	9	0.7
Emerging Infection	0	0.0	0	0.0	1	0.1
Giardiasis	10	9.3	22	11.3	163	12.2
Gonorrhea	238	221.0	263	134.7	686	51.3
Group A <i>Streptococcus</i> , invasive	14	13.0	21	10.8	85	6.4
<i>Haemophilus influenzae</i> , invasive	2	1.9	5	2.6	24	1.8
Hepatitis A, acute	2	1.9	2	1.0	9	0.7
Hepatitis B, acute	1	0.9	1	0.5	52	3.9
Hepatitis B, chronic	25	23.2	31	15.9	201	15.0

Counts of confirmed and probable cases. Rates of confirmed and probable cases per 100,000 people.

Condition	County		District		State	
	Count	Rate	Count	Rate	Count	Rate
Hepatitis C, acute	3	2.8	4	2.0	39	2.9
Hepatitis C, chronic	124	115.2	200	102.5	1872	139.9
HIV	1	0.9	2	1.0	30	2.2
Invasive Pneumococcal Disease	10	9.3	17	8.7	132	9.9
Jamestown Canyon virus	0	0.0	0	0.0	1	0.1
Legionellosis	3	2.8	7	3.6	34	2.5
Listeriosis	1	0.9	2	1.0	7	0.5
Lyme disease	68	63.2	128	65.6	1405	105.0
Malaria	2	1.9	2	1.0	9	0.7
Mumps	1	0.9	1	0.5	4	0.3
<i>Neisseria meningitidis</i> , invasive (Mening. disease)	1	0.9	1	0.5	1	0.1
Pertussis	25	23.2	34	17.4	446	33.3
Q fever	0	0.0	0	0.0	1	0.1
Rabies PEP	5	4.6	11	5.6	152	11.4
Rabies, animal	7	NA	15	NA	76	NA
<i>S. aureus</i> , methicillin resistant (MRSA), invasive	14	13.0	29	14.9	243	18.2
Salmonellosis	8	7.4	14	7.2	119	8.9
Shiga toxin-producing <i>Escherichia coli</i> (STEC)	1	0.9	2	1.0	37	2.8
Shigellosis	4	3.7	4	2.0	7	0.5
Spotted Fever Rickettsiosis	1	0.9	1	0.5	10	0.7
Streptococcal toxic-shock syndrome	0	0.0	1	0.5	12	0.9
Syphilis	7	6.5	13	6.7	104	7.8
Tuberculosis	1	0.9	1	0.5	14	1.0
Varicella (Chickenpox)	9	8.4	15	7.7	252	18.8
Vibriosis	0	0.0	1	0.5	14	1.0
WNV, Non-Human	0	NA	0	NA	5	NA
West Nile Fever	0	0.0	0	0.0	2	0.1

# AROOSTOOK COUNTY



67,111

Population



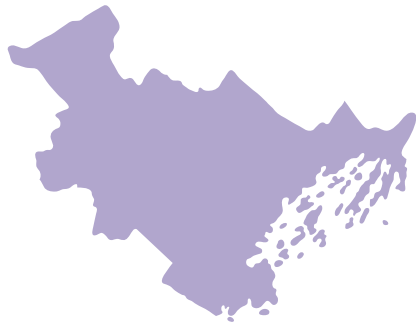
Of Maine's Total  
Population

Condition	County		District		State	
	Count	Rate	Count	Rate	Count	Rate
<i>Anaplasma phagocytophilum</i>	0	0.0	0	0.0	476	35.6
Babesiosis	0	0.0	0	0.0	101	7.5
<i>Borrelia miyamotoi</i>	0	0.0	0	0.0	8	0.6
Campylobacteriosis	23	34.3	23	34.3	247	18.5
Carbapenem-resistant <i>Enterobacteriaceae</i> (CRE)	1	1.5	1	1.5	92	6.9
Chikungunya Virus	0	0.0	0	0.0	2	0.1
<i>Chlamydia trachomatis</i> infection	171	254.8	171	254.8	4346	324.7
Coccidioidomycosis	0	0.0	0	0.0	2	0.1
Cryptosporidiosis	2	3.0	2	3.0	60	4.5
Dengue	0	0.0	0	0.0	3	0.2
Ehrlichiosis, <i>chaffeensis</i>	0	0.0	0	0.0	19	1.4
Ehrlichiosis/Anaplasmosis, undetermined	0	0.0	0	0.0	9	0.7
Emerging Infection	0	0.0	0	0.0	1	0.1
Giardiasis	4	6.0	4	6.0	163	12.2
Gonorrhea	10	14.9	10	14.9	686	51.3
Group A <i>Streptococcus</i> , invasive	2	3.0	2	3.0	85	6.4
<i>Haemophilus influenzae</i> , invasive	1	1.5	1	1.5	24	1.8
Hepatitis A, acute	0	0.0	0	0.0	9	0.7
Hepatitis B, acute	0	0.0	0	0.0	52	3.9
Hepatitis B, chronic	3	4.5	3	4.5	201	15.0

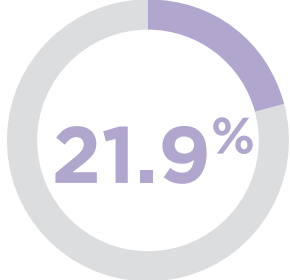
Counts of confirmed and probable cases. Rates of confirmed and probable cases per 100,000 people.

Condition	County		District		State	
	Count	Rate	Count	Rate	Count	Rate
Hepatitis C, acute	3	4.5	3	4.5	39	2.9
Hepatitis C, chronic	55	82.0	55	82.0	1872	139.9
HIV	2	3.0	2	3.0	30	2.2
Invasive Pneumococcal Disease	10	14.9	10	14.9	132	9.9
Jamestown Canyon virus	0	0.0	0	0.0	1	0.1
Legionellosis	3	4.5	3	4.5	34	2.5
Listeriosis	1	1.5	1	1.5	7	0.5
Lyme disease	4	6.0	4	6.0	1405	105.0
Malaria	0	0.0	0	0.0	9	0.7
Mumps	0	0.0	0	0.0	4	0.3
<i>Neisseria meningitidis</i> , invasive (Mening. disease)	0	0.0	0	0.0	1	0.1
Pertussis	1	1.5	1	1.5	446	33.3
Q fever	0	0.0	0	0.0	1	0.1
Rabies PEP	6	8.9	6	8.9	152	11.4
Rabies, animal	1	NA	1	NA	76	NA
<i>S. aureus</i> , methicillin resistant (MRSA), invasive	19	28.3	19	28.3	243	18.2
Salmonellosis	7	10.4	7	10.4	119	8.9
Shiga toxin-producing <i>Escherichia coli</i> (STEC)	1	1.5	1	1.5	37	2.8
Shigellosis	0	0.0	0	0.0	7	0.5
Spotted Fever Rickettsiosis	0	0.0	0	0.0	10	0.7
Streptococcal toxic-shock syndrome	0	0.0	0	0.0	12	0.9
Syphilis	0	0.0	0	0.0	104	7.8
Tuberculosis	0	0.0	0	0.0	14	1.0
Varicella (Chickenpox)	15	22.4	15	22.4	252	18.8
Vibriosis	0	0.0	0	0.0	14	1.0
WNV, Non-Human	0	NA	0	NA	5	NA
West Nile Fever	0	0.0	0	0.0	2	0.1

# CUMBERLAND COUNTY



  
**293,557**  
 Population

  
**21.9%**  
 Of Maine's Total Population

Condition	County		District		State	
	Count	Rate	Count	Rate	Count	Rate
<i>Anaplasma phagocytophilum</i>	71	24.2	71	24.2	476	35.6
Babesiosis	20	6.8	20	6.8	101	7.5
<i>Borrelia miyamotoi</i>	1	0.3	1	0.3	8	0.6
Campylobacteriosis	61	20.8	61	20.8	247	18.5
Carbapenem-resistant <i>Enterobacteriaceae</i> (CRE)	33	11.2	33	11.2	92	6.9
Chikungunya Virus	1	0.3	1	0.3	2	0.1
<i>Chlamydia trachomatis</i> infection	1050	357.7	1050	357.7	4346	324.7
Coccidioidomycosis	0	0.0	0	0.0	2	0.1
Cryptosporidiosis	11	3.7	11	3.7	60	4.5
Dengue	1	0.3	1	0.3	3	0.2
Ehrlichiosis, <i>chaffeensis</i>	7	2.4	7	2.4	19	1.4
Ehrlichiosis/Anaplasmosis, undetermined	0	0.0	0	0.0	9	0.7
Emerging Infection	0	0.0	0	0.0	1	0.1
Giardiasis	46	15.7	46	15.7	163	12.2
Gonorrhea	181	61.7	181	61.7	686	51.3
Group A <i>Streptococcus</i> , invasive	20	6.8	20	6.8	85	6.4
<i>Haemophilus influenzae</i> , invasive	8	2.7	8	2.7	24	1.8
Hepatitis A, acute	4	1.4	4	1.4	9	0.7
Hepatitis B, acute	15	5.1	15	5.1	52	3.9
Hepatitis B, chronic	93	31.7	93	31.7	201	15.0

Counts of confirmed and probable cases. Rates of confirmed and probable cases per 100,000 people.

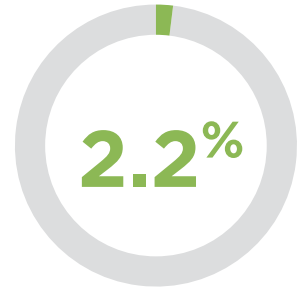
Condition	County		District		State	
	Count	Rate	Count	Rate	Count	Rate
Hepatitis C, acute	13	4.4	13	4.4	39	2.9
Hepatitis C, chronic	536	182.6	536	182.6	1872	139.9
HIV	9	3.1	9	3.1	30	2.2
Invasive Pneumococcal Disease	14	4.8	14	4.8	132	9.9
Jamestown Canyon virus	0	0.0	0	0.0	1	0.1
Legionellosis	3	1.0	3	1.0	34	2.5
Listeriosis	0	0.0	0	0.0	7	0.5
Lyme disease	285	97.1	285	97.1	1405	105.0
Malaria	4	1.4	4	1.4	9	0.7
Mumps	0	0.0	0	0.0	4	0.3
<i>Neisseria meningitidis</i> , invasive (Mening. disease)	0	0.0	0	0.0	1	0.1
Pertussis	57	19.4	57	19.4	446	33.3
Q fever	0	0.0	0	0.0	1	0.1
Rabies PEP	22	7.5	22	7.5	152	11.4
Rabies, animal	17	NA	17	NA	76	NA
<i>S. aureus</i> , methicillin resistant (MRSA), invasive	37	12.6	37	12.6	243	18.2
Salmonellosis	26	8.9	26	8.9	119	8.9
Shiga toxin-producing <i>Escherichia coli</i> (STEC)	12	4.1	12	4.1	37	2.8
Shigellosis	0	0.0	0	0.0	7	0.5
Spotted Fever Rickettsiosis	1	0.3	1	0.3	10	0.7
Streptococcal toxic-shock syndrome	3	1.0	3	1.0	12	0.9
Syphilis	34	11.6	34	11.6	104	7.8
Tuberculosis	11	3.7	11	3.7	14	1.0
Varicella (Chickenpox)	73	24.9	73	24.9	252	18.8
Vibriosis	5	1.7	5	1.7	14	1.0
WNV, Non-Human	0	NA	0	NA	5	NA
West Nile Fever	2	0.7	2	0.7	2	0.1

# FRANKLIN COUNTY



**29,897**

Population



Of Maine's Total  
Population

Condition	County		District		State	
	Count	Rate	Count	Rate	Count	Rate
<i>Anaplasma phagocytophilum</i>	3	10.0	48	24.6	476	35.6
Babesiosis	0	0.0	11	5.6	101	7.5
<i>Borrelia miyamotoi</i>	0	0.0	0	0.0	8	0.6
Campylobacteriosis	4	13.4	30	15.4	247	18.5
Carbapenem-resistant <i>Enterobacteriaceae</i> (CRE)	1	3.3	14	7.2	92	6.9
Chikungunya Virus	0	0.0	0	0.0	2	0.1
<i>Chlamydia trachomatis</i> infection	72	240.8	807	413.4	4346	324.7
Coccidioidomycosis	0	0.0	0	0.0	2	0.1
Cryptosporidiosis	0	0.0	1	0.5	60	4.5
Dengue	0	0.0	1	0.5	3	0.2
Ehrlichiosis, <i>chaffeensis</i>	0	0.0	3	1.5	19	1.4
Ehrlichiosis/Anaplasmosis, undetermined	0	0.0	2	1.0	9	0.7
Emerging Infection	0	0.0	0	0.0	1	0.1
Giardiasis	4	13.4	22	11.3	163	12.2
Gonorrhea	8	26.8	263	134.7	686	51.3
Group A <i>Streptococcus</i> , invasive	1	3.3	21	10.8	85	6.4
<i>Haemophilus influenzae</i> , invasive	0	0.0	5	2.6	24	1.8
Hepatitis A, acute	0	0.0	2	1.0	9	0.7
Hepatitis B, acute	0	0.0	1	0.5	52	3.9
Hepatitis B, chronic	1	3.3	31	15.9	201	15.0

Counts of confirmed and probable cases. Rates of confirmed and probable cases per 100,000 people.



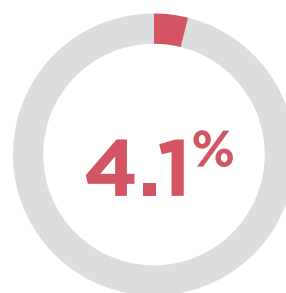
Condition	County		District		State	
	Count	Rate	Count	Rate	Count	Rate
Hepatitis C, acute	0	0.0	4	2.0	39	2.9
Hepatitis C, chronic	16	53.5	200	102.5	1872	139.9
HIV	1	3.3	2	1.0	30	2.2
Invasive Pneumococcal Disease	3	10.0	17	8.7	132	9.9
Jamestown Canyon virus	0	0.0	0	0.0	1	0.1
Legionellosis	3	10.0	7	3.6	34	2.5
Listeriosis	1	3.3	2	1.0	7	0.5
Lyme disease	13	43.5	128	65.6	1405	105.0
Malaria	0	0.0	2	1.0	9	0.7
Mumps	0	0.0	1	0.5	4	0.3
<i>Neisseria meningitidis</i> , invasive (Mening. disease)	0	0.0	1	0.5	1	0.1
Pertussis	7	23.4	34	17.4	446	33.3
Q fever	0	0.0	0	0.0	1	0.1
Rabies PEP	0	0.0	11	5.6	152	11.4
Rabies, animal	2	NA	15	NA	76	NA
<i>S. aureus</i> , methicillin resistant (MRSA), invasive	6	20.1	29	14.9	243	18.2
Salmonellosis	3	10.0	14	7.2	119	8.9
Shiga toxin-producing <i>Escherichia coli</i> (STEC)	0	0.0	2	1.0	37	2.8
Shigellosis	0	0.0	4	2.0	7	0.5
Spotted Fever Rickettsiosis	0	0.0	1	0.5	10	0.7
Streptococcal toxic-shock syndrome	0	0.0	1	0.5	12	0.9
Syphilis	5	16.7	13	6.7	104	7.8
Tuberculosis	0	0.0	1	0.5	14	1.0
Varicella (Chickenpox)	4	13.4	15	7.7	252	18.8
Vibriosis	1	3.3	1	0.5	14	1.0
WNV, Non-Human	0	NA	0	NA	5	NA
West Nile Fever	0	0.0	0	0.0	2	0.1

# HANCOCK COUNTY



**54,811**

**Population**



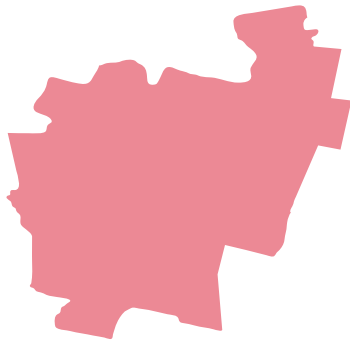
**Of Maine's Total  
Population**

Condition	County		District		State	
	Count	Rate	Count	Rate	Count	Rate
<i>Anaplasma phagocytophilum</i>	15	27.4	16	18.5	476	35.6
Babesiosis	5	9.1	6	7.0	101	7.5
<i>Borrelia miyamotoi</i>	0	0.0	0	0.0	8	0.6
Campylobacteriosis	12	21.9	16	18.5	247	18.5
Carbapenem-resistant <i>Enterobacteriaceae</i> (CRE)	0	0.0	1	1.2	92	6.9
Chikungunya Virus	0	0.0	0	0.0	2	0.1
<i>Chlamydia trachomatis</i> infection	126	229.9	220	254.9	4346	324.7
Coccidioidomycosis	0	0.0	0	0.0	2	0.1
Cryptosporidiosis	2	3.6	3	3.5	60	4.5
Dengue	0	0.0	0	0.0	3	0.2
Ehrlichiosis, <i>chaffeensis</i>	0	0.0	0	0.0	19	1.4
Ehrlichiosis/Anaplasmosis, undetermined	0	0.0	0	0.0	9	0.7
Emerging Infection	0	0.0	0	0.0	1	0.1
Giardiasis	7	12.8	8	9.3	163	12.2
Gonorrhea	11	20.1	15	17.4	686	51.3
Group A <i>Streptococcus</i> , invasive	5	9.1	8	9.3	85	6.4
<i>Haemophilus influenzae</i> , invasive	0	0.0	1	1.2	24	1.8
Hepatitis A, acute	0	0.0	0	0.0	9	0.7
Hepatitis B, acute	7	12.8	12	13.9	52	3.9
Hepatitis B, chronic	5	9.1	15	17.4	201	15.0

Counts of confirmed and probable cases. Rates of confirmed and probable cases per 100,000 people.

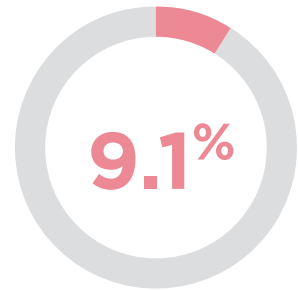
Condition	County		District		State	
	Count	Rate	Count	Rate	Count	Rate
Hepatitis C, acute	2	3.6	3	3.5	39	2.9
Hepatitis C, chronic	68	124.1	115	133.3	1872	139.9
HIV	4	7.3	4	4.6	30	2.2
Invasive Pneumococcal Disease	6	10.9	13	15.1	132	9.9
Jamestown Canyon virus	0	0.0	0	0.0	1	0.1
Legionellosis	2	3.6	2	2.3	34	2.5
Listeriosis	0	0.0	0	0.0	7	0.5
Lyme disease	174	317.5	189	219.0	1405	105.0
Malaria	1	1.8	1	1.2	9	0.7
Mumps	0	0.0	0	0.0	4	0.3
<i>Neisseria meningitidis</i> , invasive (Mening. disease)	0	0.0	0	0.0	1	0.1
Pertussis	31	56.6	32	37.1	446	33.3
Q fever	0	0.0	0	0.0	1	0.1
Rabies PEP	2	3.6	12	13.9	152	11.4
Rabies, animal	3	NA	8	NA	76	NA
<i>S. aureus</i> , methicillin resistant (MRSA), invasive	11	20.1	20	23.2	243	18.2
Salmonellosis	7	12.8	10	11.6	119	8.9
Shiga toxin-producing <i>Escherichia coli</i> (STEC)	0	0.0	0	0.0	37	2.8
Shigellosis	0	0.0	0	0.0	7	0.5
Spotted Fever Rickettsiosis	1	1.8	2	2.3	10	0.7
Streptococcal toxic-shock syndrome	1	1.8	2	2.3	12	0.9
Syphilis	2	3.6	4	4.6	104	7.8
Tuberculosis	1	1.8	1	1.2	14	1.0
Varicella (Chickenpox)	9	16.4	13	15.1	252	18.8
Vibriosis	1	1.8	1	1.2	14	1.0
WNV, Non-Human	0	NA	0	NA	5	NA
West Nile Fever	0	0.0	0	0.0	2	0.1

# KENNEBEC COUNTY



122,083

Population



Of Maine's Total  
Population

Condition	County		District		State	
	Count	Rate	Count	Rate	Count	Rate
<i>Anaplasma phagocytophilum</i>	57	46.7	67	38.8	476	35.6
Babesiosis	5	4.1	5	2.9	101	7.5
<i>Borrelia miyamotoi</i>	2	1.6	2	1.2	8	0.6
Campylobacteriosis	25	20.5	33	19.1	247	18.5
Carbapenem-resistant <i>Enterobacteriaceae</i> (CRE)	7	5.7	8	4.6	92	6.9
Chikungunya Virus	0	0.0	0	0.0	2	0.1
<i>Chlamydia trachomatis</i> infection	364	298.2	518	300.0	4346	324.7
Coccidioidomycosis	0	0.0	0	0.0	2	0.1
Cryptosporidiosis	5	4.1	12	6.9	60	4.5
Dengue	0	0.0	0	0.0	3	0.2
Ehrlichiosis, <i>chaffeensis</i>	6	4.9	6	3.5	19	1.4
Ehrlichiosis/Anaplasmosis, undetermined	4	3.3	4	2.3	9	0.7
Emerging Infection	0	0.0	0	0.0	1	0.1
Giardiasis	12	9.8	20	11.6	163	12.2
Gonorrhea	47	38.5	59	34.2	686	51.3
Group A <i>Streptococcus</i> , invasive	7	5.7	10	5.8	85	6.4
<i>Haemophilus influenzae</i> , invasive	0	0.0	0	0.0	24	1.8
Hepatitis A, acute	0	0.0	2	1.2	9	0.7
Hepatitis B, acute	1	0.8	2	1.2	52	3.9
Hepatitis B, chronic	4	3.3	6	3.5	201	15.0

Counts of confirmed and probable cases. Rates of confirmed and probable cases per 100,000 people.

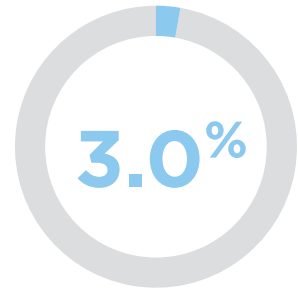
Condition	County		District		State	
	Count	Rate	Count	Rate	Count	Rate
Hepatitis C, acute	0	0.0	3	1.7	39	2.9
Hepatitis C, chronic	147	120.4	212	122.8	1872	139.9
HIV	2	1.6	4	2.3	30	2.2
Invasive Pneumococcal Disease	18	14.7	24	13.9	132	9.9
Jamestown Canyon virus	0	0.0	0	0.0	1	0.1
Legionellosis	3	2.5	5	2.9	34	2.5
Listeriosis	1	0.8	2	1.2	7	0.5
Lyme disease	181	148.3	226	130.9	1405	105.0
Malaria	1	0.8	1	0.6	9	0.7
Mumps	0	0.0	1	0.6	4	0.3
<i>Neisseria meningitidis</i> , invasive (Mening. disease)	0	0.0	0	0.0	1	0.1
Pertussis	15	12.3	26	15.1	446	33.3
Q fever	0	0.0	0	0.0	1	0.1
Rabies PEP	15	12.3	23	13.3	152	11.4
Rabies, animal	9	NA	10	NA	76	NA
<i>S. aureus</i> , methicillin resistant (MRSA), invasive	25	20.5	34	19.7	243	18.2
Salmonellosis	7	5.7	10	5.8	119	8.9
Shiga toxin-producing <i>Escherichia coli</i> (STEC)	5	4.1	7	4.1	37	2.8
Shigellosis	0	0.0	0	0.0	7	0.5
Spotted Fever Rickettsiosis	3	2.5	3	1.7	10	0.7
Streptococcal toxic-shock syndrome	1	0.8	1	0.6	12	0.9
Syphilis	9	7.4	14	8.1	104	7.8
Tuberculosis	0	0.0	0	0.0	14	1.0
Varicella (Chickenpox)	12	9.8	22	12.7	252	18.8
Vibriosis	0	0.0	0	0.0	14	1.0
WNV, Non-Human	0	NA	0	NA	5	NA
West Nile Fever	0	0.0	0	0.0	2	0.1

# KNOX COUNTY



**39,771**

Population



Of Maine's Total  
Population

Condition	County		District		State	
	Count	Rate	Count	Rate	Count	Rate
<i>Anaplasma phagocytophilum</i>	88	221.3	182	121.8	476	35.6
Babesiosis	17	42.7	30	20.1	101	7.5
<i>Borrelia miyamotoi</i>	1	2.5	5	3.3	8	0.6
Campylobacteriosis	6	15.1	27	18.1	247	18.5
Carbapenem-resistant <i>Enterobacteriaceae</i> (CRE)	2	5.0	11	7.4	92	6.9
Chikungunya Virus	0	0.0	1	0.7	2	0.1
<i>Chlamydia trachomatis</i> infection	114	286.6	385	257.6	4346	324.7
Coccidioidomycosis	1	2.5	2	1.3	2	0.1
Cryptosporidiosis	0	0.0	8	5.4	60	4.5
Dengue	0	0.0	1	0.7	3	0.2
Ehrlichiosis, <i>chaffeensis</i>	0	0.0	0	0.0	19	1.4
Ehrlichiosis/Anaplasmosis, undetermined	0	0.0	2	1.3	9	0.7
Emerging Infection	0	0.0	0	0.0	1	0.1
Giardiasis	7	17.6	24	16.1	163	12.2
Gonorrhea	7	17.6	32	21.4	686	51.3
Group A <i>Streptococcus</i> , invasive	1	2.5	4	2.7	85	6.4
<i>Haemophilus influenzae</i> , invasive	0	0.0	1	0.7	24	1.8
Hepatitis A, acute	0	0.0	0	0.0	9	0.7
Hepatitis B, acute	2	5.0	2	1.3	52	3.9
Hepatitis B, chronic	4	10.1	17	11.4	201	15.0

Counts of confirmed and probable cases. Rates of confirmed and probable cases per 100,000 people.

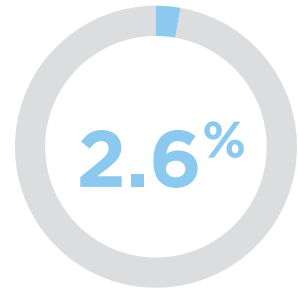
Condition	County		District		State	
	Count	Rate	Count	Rate	Count	Rate
Hepatitis C, acute	1	2.5	1	0.7	39	2.9
Hepatitis C, chronic	96	241.4	214	143.2	1872	139.9
HIV	2	5.0	4	2.7	30	2.2
Invasive Pneumococcal Disease	4	10.1	15	10.0	132	9.9
Jamestown Canyon virus	1	2.5	1	0.7	1	0.1
Legionellosis	1	2.5	2	1.3	34	2.5
Listeriosis	0	0.0	0	0.0	7	0.5
Lyme disease	105	264.0	292	195.4	1405	105.0
Malaria	0	0.0	0	0.0	9	0.7
Mumps	0	0.0	0	0.0	4	0.3
<i>Neisseria meningitidis</i> , invasive (Mening. disease)	0	0.0	0	0.0	1	0.1
Pertussis	3	7.5	87	58.2	446	33.3
Q fever	0	0.0	0	0.0	1	0.1
Rabies PEP	11	27.7	27	18.1	152	11.4
Rabies, animal	2	NA	16	NA	76	NA
<i>S. aureus</i> , methicillin resistant (MRSA), invasive	7	17.6	26	17.4	243	18.2
Salmonellosis	3	7.5	19	12.7	119	8.9
Shiga toxin-producing <i>Escherichia coli</i> (STEC)	0	0.0	6	4.0	37	2.8
Shigellosis	0	0.0	1	0.7	7	0.5
Spotted Fever Rickettsiosis	3	7.5	3	2.0	10	0.7
Streptococcal toxic-shock syndrome	0	0.0	0	0.0	12	0.9
Syphilis	2	5.0	9	6.0	104	7.8
Tuberculosis	0	0.0	0	0.0	14	1.0
Varicella (Chickenpox)	4	10.1	20	13.4	252	18.8
Vibriosis	2	5.0	2	1.3	14	1.0
WNV, Non-Human	0	NA	0	NA	5	NA
West Nile Fever	0	0.0	0	0.0	2	0.1

# LINCOLN COUNTY



**34,342**

Population



Of Maine's Total Population

Condition	County		District		State	
	Count	Rate	Count	Rate	Count	Rate
<i>Anaplasma phagocytophilum</i>	44	128.1	182	121.8	476	35.6
Babesiosis	5	14.6	30	20.1	101	7.5
<i>Borrelia miyamotoi</i>	3	8.7	5	3.3	8	0.6
Campylobacteriosis	9	26.2	27	18.1	247	18.5
Carbapenem-resistant <i>Enterobacteriaceae</i> (CRE)	5	14.6	11	7.4	92	6.9
Chikungunya Virus	1	2.9	1	0.7	2	0.1
<i>Chlamydia trachomatis</i> infection	92	267.9	385	257.6	4346	324.7
Coccidioidomycosis	0	0.0	2	1.3	2	0.1
Cryptosporidiosis	1	2.9	8	5.4	60	4.5
Dengue	0	0.0	1	0.7	3	0.2
Ehrlichiosis, <i>chaffeensis</i>	0	0.0	0	0.0	19	1.4
Ehrlichiosis/Anaplasmosis, undetermined	1	2.9	2	1.3	9	0.7
Emerging Infection	0	0.0	0	0.0	1	0.1
Giardiasis	8	23.3	24	16.1	163	12.2
Gonorrhea	4	11.6	32	21.4	686	51.3
Group A <i>Streptococcus</i> , invasive	0	0.0	4	2.7	85	6.4
<i>Haemophilus influenzae</i> , invasive	1	2.9	1	0.7	24	1.8
Hepatitis A, acute	0	0.0	0	0.0	9	0.7
Hepatitis B, acute	0	0.0	2	1.3	52	3.9
Hepatitis B, chronic	5	14.6	17	11.4	201	15.0

Counts of confirmed and probable cases. Rates of confirmed and probable cases per 100,000 people.



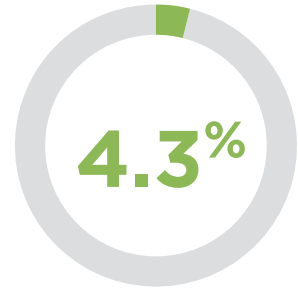
Condition	County		District		State	
	Count	Rate	Count	Rate	Count	Rate
Hepatitis C, acute	0	0.0	1	0.7	39	2.9
Hepatitis C, chronic	38	110.7	214	143.2	1872	139.9
HIV	1	2.9	4	2.7	30	2.2
Invasive Pneumococcal Disease	2	5.8	15	10.0	132	9.9
Jamestown Canyon virus	0	0.0	1	0.7	1	0.1
Legionellosis	1	2.9	2	1.3	34	2.5
Listeriosis	0	0.0	0	0.0	7	0.5
Lyme disease	62	180.5	292	195.4	1405	105.0
Malaria	0	0.0	0	0.0	9	0.7
Mumps	0	0.0	0	0.0	4	0.3
<i>Neisseria meningitidis</i> , invasive (Mening. disease)	0	0.0	0	0.0	1	0.1
Pertussis	5	14.6	87	58.2	446	33.3
Q fever	0	0.0	0	0.0	1	0.1
Rabies PEP	6	17.5	27	18.1	152	11.4
Rabies, animal	2	NA	16	NA	76	NA
<i>S. aureus</i> , methicillin resistant (MRSA), invasive	7	20.4	26	17.4	243	18.2
Salmonellosis	6	17.5	19	12.7	119	8.9
Shiga toxin-producing <i>Escherichia coli</i> (STEC)	0	0.0	6	4.0	37	2.8
Shigellosis	0	0.0	1	0.7	7	0.5
Spotted Fever Rickettsiosis	0	0.0	3	2.0	10	0.7
Streptococcal toxic-shock syndrome	0	0.0	0	0.0	12	0.9
Syphilis	1	2.9	9	6.0	104	7.8
Tuberculosis	0	0.0	0	0.0	14	1.0
Varicella (Chickenpox)	5	14.6	20	13.4	252	18.8
Vibriosis	0	0.0	2	1.3	14	1.0
WNV, Non-Human	0	NA	0	NA	5	NA
West Nile Fever	0	0.0	0	0.0	2	0.1

# OXFORD COUNTY



**57,618**

Population



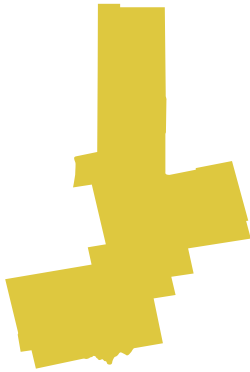
Of Maine's Total  
Population

Condition	County		District		State	
	Count	Rate	Count	Rate	Count	Rate
<i>Anaplasma phagocytophilum</i>	14	24.3	48	24.6	476	35.6
Babesiosis	2	3.5	11	5.6	101	7.5
<i>Borrelia miyamotoi</i>	0	0.0	0	0.0	8	0.6
Campylobacteriosis	10	17.4	30	15.4	247	18.5
Carbapenem-resistant <i>Enterobacteriaceae</i> (CRE)	8	13.9	14	7.2	92	6.9
Chikungunya Virus	0	0.0	0	0.0	2	0.1
<i>Chlamydia trachomatis</i> infection	166	288.1	807	413.4	4346	324.7
Coccidioidomycosis	0	0.0	0	0.0	2	0.1
Cryptosporidiosis	1	1.7	1	0.5	60	4.5
Dengue	0	0.0	1	0.5	3	0.2
Ehrlichiosis, <i>chaffeensis</i>	0	0.0	3	1.5	19	1.4
Ehrlichiosis/Anaplasmosis, undetermined	1	1.7	2	1.0	9	0.7
Emerging Infection	0	0.0	0	0.0	1	0.1
Giardiasis	8	13.9	22	11.3	163	12.2
Gonorrhea	17	29.5	263	134.7	686	51.3
Group A <i>Streptococcus</i> , invasive	6	10.4	21	10.8	85	6.4
<i>Haemophilus influenzae</i> , invasive	3	5.2	5	2.6	24	1.8
Hepatitis A, acute	0	0.0	2	1.0	9	0.7
Hepatitis B, acute	0	0.0	1	0.5	52	3.9
Hepatitis B, chronic	5	8.7	31	15.9	201	15.0

Counts of confirmed and probable cases. Rates of confirmed and probable cases per 100,000 people.

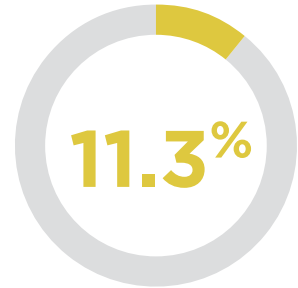
Condition	County		District		State	
	Count	Rate	Count	Rate	Count	Rate
Hepatitis C, acute	1	1.7	4	2.0	39	2.9
Hepatitis C, chronic	60	104.1	200	102.5	1872	139.9
HIV	0	0.0	2	1.0	30	2.2
Invasive Pneumococcal Disease	4	6.9	17	8.7	132	9.9
Jamestown Canyon virus	0	0.0	0	0.0	1	0.1
Legionellosis	1	1.7	7	3.6	34	2.5
Listeriosis	0	0.0	2	1.0	7	0.5
Lyme disease	47	81.6	128	65.6	1405	105.0
Malaria	0	0.0	2	1.0	9	0.7
Mumps	0	0.0	1	0.5	4	0.3
<i>Neisseria meningitidis</i> , invasive (Mening. disease)	0	0.0	1	0.5	1	0.1
Pertussis	2	3.5	34	17.4	446	33.3
Q fever	0	0.0	0	0.0	1	0.1
Rabies PEP	6	10.4	11	5.6	152	11.4
Rabies, animal	6	NA	15	NA	76	NA
<i>S. aureus</i> , methicillin resistant (MRSA), invasive	9	15.6	29	14.9	243	18.2
Salmonellosis	3	5.2	14	7.2	119	8.9
Shiga toxin-producing <i>Escherichia coli</i> (STEC)	1	1.7	2	1.0	37	2.8
Shigellosis	0	0.0	4	2.0	7	0.5
Spotted Fever Rickettsiosis	0	0.0	1	0.5	10	0.7
Streptococcal toxic-shock syndrome	1	1.7	1	0.5	12	0.9
Syphilis	1	1.7	13	6.7	104	7.8
Tuberculosis	0	0.0	1	0.5	14	1.0
Varicella (Chickenpox)	2	3.5	15	7.7	252	18.8
Vibriosis	0	0.0	1	0.5	14	1.0
WNV, Non-Human	0	NA	0	NA	5	NA
West Nile Fever	0	0.0	0	0.0	2	0.1

# PENOBSCOT COUNTY



151,096

Population



Of Maine's Total  
Population

Condition	County		District		State	
	Count	Rate	Count	Rate	Count	Rate
<i>Anaplasma phagocytophilum</i>	8	5.3	8	4.8	476	35.6
Babesiosis	2	1.3	2	1.2	101	7.5
<i>Borrelia miyamotoi</i>	0	0.0	0	0.0	8	0.6
Campylobacteriosis	24	15.9	28	16.7	247	18.5
Carbapenem-resistant <i>Enterobacteriaceae</i> (CRE)	6	4.0	6	3.6	92	6.9
Chikungunya Virus	0	0.0	0	0.0	2	0.1
<i>Chlamydia trachomatis</i> infection	558	369.3	601	358.0	4346	324.7
Coccidioidomycosis	0	0.0	0	0.0	2	0.1
Cryptosporidiosis	11	7.3	14	8.3	60	4.5
Dengue	0	0.0	0	0.0	3	0.2
Ehrlichiosis, <i>chaffeensis</i>	2	1.3	2	1.2	19	1.4
Ehrlichiosis/Anaplasmosis, undetermined	0	0.0	0	0.0	9	0.7
Emerging Infection	0	0.0	0	0.0	1	0.1
Giardiasis	19	12.6	22	13.1	163	12.2
Gonorrhea	49	32.4	49	29.2	686	51.3
Group A <i>Streptococcus</i> , invasive	15	9.9	15	8.9	85	6.4
<i>Haemophilus influenzae</i> , invasive	4	2.6	4	2.4	24	1.8
Hepatitis A, acute	0	0.0	0	0.0	9	0.7
Hepatitis B, acute	10	6.6	12	7.1	52	3.9
Hepatitis B, chronic	20	13.2	20	11.9	201	15.0

Counts of confirmed and probable cases. Rates of confirmed and probable cases per 100,000 people.

Condition	County		District		State	
	Count	Rate	Count	Rate	Count	Rate
Hepatitis C, acute	7	4.6	8	4.8	39	2.9
Hepatitis C, chronic	237	156.9	265	157.8	1872	139.9
HIV	2	1.3	2	1.2	30	2.2
Invasive Pneumococcal Disease	18	11.9	21	12.5	132	9.9
Jamestown Canyon virus	0	0.0	0	0.0	1	0.1
Legionellosis	5	3.3	7	4.2	34	2.5
Listeriosis	1	0.7	1	0.6	7	0.5
Lyme disease	77	51.0	80	47.6	1405	105.0
Malaria	0	0.0	0	0.0	9	0.7
Mumps	1	0.7	1	0.6	4	0.3
<i>Neisseria meningitidis</i> , invasive (Mening. disease)	0	0.0	0	0.0	1	0.1
Pertussis	35	23.2	36	21.4	446	33.3
Q fever	0	0.0	1	0.6	1	0.1
Rabies PEP	13	8.6	13	7.7	152	11.4
Rabies, animal	3	NA	5	NA	76	NA
<i>S. aureus</i> , methicillin resistant (MRSA), invasive	44	29.1	46	27.4	243	18.2
Salmonellosis	8	5.3	9	5.4	119	8.9
Shiga toxin-producing <i>Escherichia coli</i> (STEC)	1	0.7	1	0.6	37	2.8
Shigellosis	2	1.3	2	1.2	7	0.5
Spotted Fever Rickettsiosis	0	0.0	0	0.0	10	0.7
Streptococcal toxic-shock syndrome	2	1.3	2	1.2	12	0.9
Syphilis	7	4.6	8	4.8	104	7.8
Tuberculosis	1	0.7	1	0.6	14	1.0
Varicella (Chickenpox)	39	25.8	40	23.8	252	18.8
Vibriosis	1	0.7	1	0.6	14	1.0
WNV, Non-Human	2	NA	2	NA	5	NA
West Nile Fever	0	0.0	0	0.0	2	0.1

# PISCATAQUIS COUNTY



**16,800**

Population



Of Maine's Total  
Population


Condition	County		District		State	
	Count	Rate	Count	Rate	Count	Rate
<i>Anaplasma phagocytophilum</i>	0	0.0	8	4.8	476	35.6
Babesiosis	0	0.0	2	1.2	101	7.5
<i>Borrelia miyamotoi</i>	0	0.0	0	0.0	8	0.6
Campylobacteriosis	4	23.8	28	16.7	247	18.5
Carbapenem-resistant <i>Enterobacteriaceae</i> (CRE)	0	0.0	6	3.6	92	6.9
Chikungunya Virus	0	0.0	0	0.0	2	0.1
<i>Chlamydia trachomatis</i> infection	43	256.0	601	358.0	4346	324.7
Coccidioidomycosis	0	0.0	0	0.0	2	0.1
Cryptosporidiosis	3	17.9	14	8.3	60	4.5
Dengue	0	0.0	0	0.0	3	0.2
Ehrlichiosis, <i>chaffeensis</i>	0	0.0	2	1.2	19	1.4
Ehrlichiosis/Anaplasmosis, undetermined	0	0.0	0	0.0	9	0.7
Emerging Infection	0	0.0	0	0.0	1	0.1
Giardiasis	3	17.9	22	13.1	163	12.2
Gonorrhea	0	0.0	49	29.2	686	51.3
Group A <i>Streptococcus</i> , invasive	0	0.0	15	8.9	85	6.4
<i>Haemophilus influenzae</i> , invasive	0	0.0	4	2.4	24	1.8
Hepatitis A, acute	0	0.0	0	0.0	9	0.7
Hepatitis B, acute	2	11.9	12	7.1	52	3.9
Hepatitis B, chronic	0	0.0	20	11.9	201	15.0

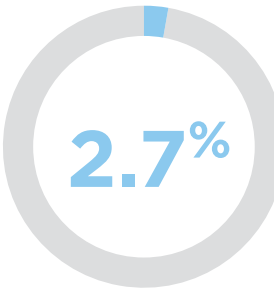
Counts of confirmed and probable cases. Rates of confirmed and probable cases per 100,000 people.

Condition	County		District		State	
	Count	Rate	Count	Rate	Count	Rate
Hepatitis C, acute	1	6.0	8	4.8	39	2.9
Hepatitis C, chronic	28	166.7	265	157.8	1872	139.9
HIV	0	0.0	2	1.2	30	2.2
Invasive Pneumococcal Disease	3	17.9	21	12.5	132	9.9
Jamestown Canyon virus	0	0.0	0	0.0	1	0.1
Legionellosis	2	11.9	7	4.2	34	2.5
Listeriosis	0	0.0	1	0.6	7	0.5
Lyme disease	3	17.9	80	47.6	1405	105.0
Malaria	0	0.0	0	0.0	9	0.7
Mumps	0	0.0	1	0.6	4	0.3
<i>Neisseria meningitidis</i> , invasive (Mening. disease)	0	0.0	0	0.0	1	0.1
Pertussis	1	6.0	36	21.4	446	33.3
Q fever	1	6.0	1	0.6	1	0.1
Rabies PEP	0	0.0	13	7.7	152	11.4
Rabies, animal	2	NA	5	NA	76	NA
<i>S. aureus</i> , methicillin resistant (MRSA), invasive	2	11.9	46	27.4	243	18.2
Salmonellosis	1	6.0	9	5.4	119	8.9
Shiga toxin-producing <i>Escherichia coli</i> (STEC)	0	0.0	1	0.6	37	2.8
Shigellosis	0	0.0	2	1.2	7	0.5
Spotted Fever Rickettsiosis	0	0.0	0	0.0	10	0.7
Streptococcal toxic-shock syndrome	0	0.0	2	1.2	12	0.9
Syphilis	1	6.0	8	4.8	104	7.8
Tuberculosis	0	0.0	1	0.6	14	1.0
Varicella (Chickenpox)	1	6.0	40	23.8	252	18.8
Vibriosis	0	0.0	1	0.6	14	1.0
WNV, Non-Human	0	NA	2	NA	5	NA
West Nile Fever	0	0.0	0	0.0	2	0.1

# SAGADAHOC COUNTY



  
**35,634**  
 Population

  
**2.7%**  
 Of Maine's Total Population

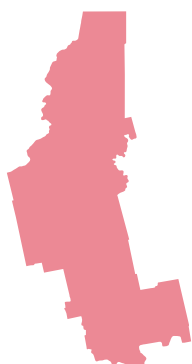
Condition	County		District		State	
	Count	Rate	Count	Rate	Count	Rate
<i>Anaplasma phagocytophilum</i>	27	75.8	182	121.8	476	35.6
Babesiosis	2	5.6	30	20.1	101	7.5
<i>Borrelia miyamotoi</i>	1	2.8	5	3.3	8	0.6
Campylobacteriosis	6	16.8	27	18.1	247	18.5
Carbapenem-resistant <i>Enterobacteriaceae</i> (CRE)	2	5.6	11	7.4	92	6.9
Chikungunya Virus	0	0.0	1	0.7	2	0.1
<i>Chlamydia trachomatis</i> infection	101	283.4	385	257.6	4346	324.7
Coccidioidomycosis	1	2.8	2	1.3	2	0.1
Cryptosporidiosis	3	8.4	8	5.4	60	4.5
Dengue	0	0.0	1	0.7	3	0.2
Ehrlichiosis, <i>chaffeensis</i>	0	0.0	0	0.0	19	1.4
Ehrlichiosis/Anaplasmosis, undetermined	1	2.8	2	1.3	9	0.7
Emerging Infection	0	0.0	0	0.0	1	0.1
Giardiasis	3	8.4	24	16.1	163	12.2
Gonorrhea	9	25.3	32	21.4	686	51.3
Group A <i>Streptococcus</i> , invasive	1	2.8	4	2.7	85	6.4
<i>Haemophilus influenzae</i> , invasive	0	0.0	1	0.7	24	1.8
Hepatitis A, acute	0	0.0	0	0.0	9	0.7
Hepatitis B, acute	0	0.0	2	1.3	52	3.9
Hepatitis B, chronic	3	8.4	17	11.4	201	15.0

Counts of confirmed and probable cases. Rates of confirmed and probable cases per 100,000 people.



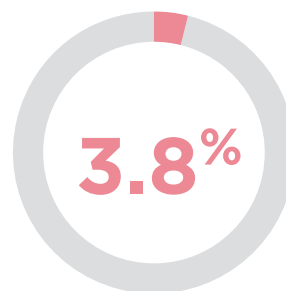
Condition	County		District		State	
	Count	Rate	Count	Rate	Count	Rate
Hepatitis C, acute	0	0.0	1	0.7	39	2.9
Hepatitis C, chronic	24	67.4	214	143.2	1872	139.9
HIV	0	0.0	4	2.7	30	2.2
Invasive Pneumococcal Disease	5	14.0	15	10.0	132	9.9
Jamestown Canyon virus	0	0.0	1	0.7	1	0.1
Legionellosis	0	0.0	2	1.3	34	2.5
Listeriosis	0	0.0	0	0.0	7	0.5
Lyme disease	47	131.9	292	195.4	1405	105.0
Malaria	0	0.0	0	0.0	9	0.7
Mumps	0	0.0	0	0.0	4	0.3
<i>Neisseria meningitidis</i> , invasive (Mening. disease)	0	0.0	0	0.0	1	0.1
Pertussis	15	42.1	87	58.2	446	33.3
Q fever	0	0.0	0	0.0	1	0.1
Rabies PEP	7	19.6	27	18.1	152	11.4
Rabies, animal	7	NA	16	NA	76	NA
<i>S. aureus</i> , methicillin resistant (MRSA), invasive	6	16.8	26	17.4	243	18.2
Salmonellosis	7	19.6	19	12.7	119	8.9
Shiga toxin-producing <i>Escherichia coli</i> (STEC)	4	11.2	6	4.0	37	2.8
Shigellosis	1	2.8	1	0.7	7	0.5
Spotted Fever Rickettsiosis	0	0.0	3	2.0	10	0.7
Streptococcal toxic-shock syndrome	0	0.0	0	0.0	12	0.9
Syphilis	3	8.4	9	6.0	104	7.8
Tuberculosis	0	0.0	0	0.0	14	1.0
Varicella (Chickenpox)	1	2.8	20	13.4	252	18.8
Vibriosis	0	0.0	2	1.3	14	1.0
WNV, Non-Human	0	NA	0	NA	5	NA
West Nile Fever	0	0.0	0	0.0	2	0.1

# SOMERSET COUNTY



50,592

Population



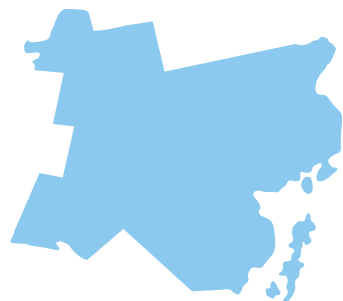
Of Maine's Total  
Population


Condition	County		District		State	
	Count	Rate	Count	Rate	Count	Rate
<i>Anaplasma phagocytophilum</i>	10	19.8	67	38.8	476	35.6
Babesiosis	0	0.0	5	2.9	101	7.5
<i>Borrelia miyamotoi</i>	0	0.0	2	1.2	8	0.6
Campylobacteriosis	8	15.8	33	19.1	247	18.5
Carbapenem-resistant <i>Enterobacteriaceae</i> (CRE)	1	2.0	8	4.6	92	6.9
Chikungunya Virus	0	0.0	0	0.0	2	0.1
<i>Chlamydia trachomatis</i> infection	154	304.4	518	300.0	4346	324.7
Coccidioidomycosis	0	0.0	0	0.0	2	0.1
Cryptosporidiosis	7	13.8	12	6.9	60	4.5
Dengue	0	0.0	0	0.0	3	0.2
Ehrlichiosis, <i>chaffeensis</i>	0	0.0	6	3.5	19	1.4
Ehrlichiosis/Anaplasmosis, undetermined	0	0.0	4	2.3	9	0.7
Emerging Infection	0	0.0	0	0.0	1	0.1
Giardiasis	8	15.8	20	11.6	163	12.2
Gonorrhea	12	23.7	59	34.2	686	51.3
Group A <i>Streptococcus</i> , invasive	3	5.9	10	5.8	85	6.4
<i>Haemophilus influenzae</i> , invasive	0	0.0	0	0.0	24	1.8
Hepatitis A, acute	2	4.0	2	1.2	9	0.7
Hepatitis B, acute	1	2.0	2	1.2	52	3.9
Hepatitis B, chronic	2	4.0	6	3.5	201	15.0

Counts of confirmed and probable cases. Rates of confirmed and probable cases per 100,000 people.

Condition	County		District		State	
	Count	Rate	Count	Rate	Count	Rate
Hepatitis C, acute	3	5.9	3	1.7	39	2.9
Hepatitis C, chronic	65	128.5	212	122.8	1872	139.9
HIV	2	4.0	4	2.3	30	2.2
Invasive Pneumococcal Disease	6	11.9	24	13.9	132	9.9
Jamestown Canyon virus	0	0.0	0	0.0	1	0.1
Legionellosis	2	4.0	5	2.9	34	2.5
Listeriosis	1	2.0	2	1.2	7	0.5
Lyme disease	45	88.9	226	130.9	1405	105.0
Malaria	0	0.0	1	0.6	9	0.7
Mumps	1	2.0	1	0.6	4	0.3
<i>Neisseria meningitidis</i> , invasive (Mening. disease)	0	0.0	0	0.0	1	0.1
Pertussis	11	21.7	26	15.1	446	33.3
Q fever	0	0.0	0	0.0	1	0.1
Rabies PEP	8	15.8	23	13.3	152	11.4
Rabies, animal	1	NA	10	NA	76	NA
<i>S. aureus</i> , methicillin resistant (MRSA), invasive	9	17.8	34	19.7	243	18.2
Salmonellosis	3	5.9	10	5.8	119	8.9
Shiga toxin-producing <i>Escherichia coli</i> (STEC)	2	4.0	7	4.1	37	2.8
Shigellosis	0	0.0	0	0.0	7	0.5
Spotted Fever Rickettsiosis	0	0.0	3	1.7	10	0.7
Streptococcal toxic-shock syndrome	0	0.0	1	0.6	12	0.9
Syphilis	5	9.9	14	8.1	104	7.8
Tuberculosis	0	0.0	0	0.0	14	1.0
Varicella (Chickenpox)	10	19.8	22	12.7	252	18.8
Vibriosis	0	0.0	0	0.0	14	1.0
WNV, Non-Human	0	NA	0	NA	5	NA
West Nile Fever	0	0.0	0	0.0	2	0.1

# WALDO COUNTY



  
**39,694**  
 Population

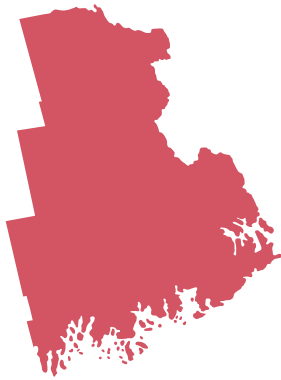
  
**3.0%**  
 Of Maine's Total Population

Condition	County		District		State	
	Count	Rate	Count	Rate	Count	Rate
<i>Anaplasma phagocytophilum</i>	23	57.9	182	121.8	476	35.6
Babesiosis	6	15.1	30	20.1	101	7.5
<i>Borrelia miyamotoi</i>	0	0.0	5	3.3	8	0.6
Campylobacteriosis	6	15.1	27	18.1	247	18.5
Carbapenem-resistant <i>Enterobacteriaceae</i> (CRE)	2	5.0	11	7.4	92	6.9
Chikungunya Virus	0	0.0	1	0.7	2	0.1
<i>Chlamydia trachomatis</i> infection	78	196.5	385	257.6	4346	324.7
Coccidioidomycosis	0	0.0	2	1.3	2	0.1
Cryptosporidiosis	4	10.1	8	5.4	60	4.5
Dengue	1	2.5	1	0.7	3	0.2
Ehrlichiosis, <i>chaffeensis</i>	0	0.0	0	0.0	19	1.4
Ehrlichiosis/Anaplasmosis, undetermined	0	0.0	2	1.3	9	0.7
Emerging Infection	0	0.0	0	0.0	1	0.1
Giardiasis	6	15.1	24	16.1	163	12.2
Gonorrhea	12	30.2	32	21.4	686	51.3
Group A <i>Streptococcus</i> , invasive	2	5.0	4	2.7	85	6.4
<i>Haemophilus influenzae</i> , invasive	0	0.0	1	0.7	24	1.8
Hepatitis A, acute	0	0.0	0	0.0	9	0.7
Hepatitis B, acute	0	0.0	2	1.3	52	3.9
Hepatitis B, chronic	5	12.6	17	11.4	201	15.0

Counts of confirmed and probable cases. Rates of confirmed and probable cases per 100,000 people.

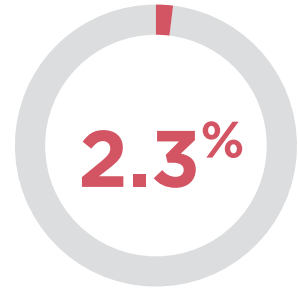
Condition	County		District		State	
	Count	Rate	Count	Rate	Count	Rate
Hepatitis C, acute	0	0.0	1	0.7	39	2.9
Hepatitis C, chronic	56	141.1	214	143.2	1872	139.9
HIV	1	2.5	4	2.7	30	2.2
Invasive Pneumococcal Disease	4	10.1	15	10.0	132	9.9
Jamestown Canyon virus	0	0.0	1	0.7	1	0.1
Legionellosis	0	0.0	2	1.3	34	2.5
Listeriosis	0	0.0	0	0.0	7	0.5
Lyme disease	78	196.5	292	195.4	1405	105.0
Malaria	0	0.0	0	0.0	9	0.7
Mumps	0	0.0	0	0.0	4	0.3
<i>Neisseria meningitidis</i> , invasive (Mening. disease)	0	0.0	0	0.0	1	0.1
Pertussis	64	161.2	87	58.2	446	33.3
Q fever	0	0.0	0	0.0	1	0.1
Rabies PEP	3	7.6	27	18.1	152	11.4
Rabies, animal	5	NA	16	NA	76	NA
<i>S. aureus</i> , methicillin resistant (MRSA), invasive	6	15.1	26	17.4	243	18.2
Salmonellosis	3	7.6	19	12.7	119	8.9
Shiga toxin-producing <i>Escherichia coli</i> (STEC)	2	5.0	6	4.0	37	2.8
Shigellosis	0	0.0	1	0.7	7	0.5
Spotted Fever Rickettsiosis	0	0.0	3	2.0	10	0.7
Streptococcal toxic-shock syndrome	0	0.0	0	0.0	12	0.9
Syphilis	3	7.6	9	6.0	104	7.8
Tuberculosis	0	0.0	0	0.0	14	1.0
Varicella (Chickenpox)	10	25.2	20	13.4	252	18.8
Vibriosis	0	0.0	2	1.3	14	1.0
WNV, Non-Human	0	NA	0	NA	5	NA
West Nile Fever	0	0.0	0	0.0	2	0.1

# WASHINGTON COUNTY



**31,490**

**Population**



**Of Maine's Total  
Population**

Condition	County		District		State	
	Count	Rate	Count	Rate	Count	Rate
<i>Anaplasma phagocytophilum</i>	1	3.2	16	18.5	476	35.6
Babesiosis	1	3.2	6	7.0	101	7.5
<i>Borrelia miyamotoi</i>	0	0.0	0	0.0	8	0.6
Campylobacteriosis	4	12.7	16	18.5	247	18.5
Carbapenem-resistant <i>Enterobacteriaceae</i> (CRE)	1	3.2	1	1.2	92	6.9
Chikungunya Virus	0	0.0	0	0.0	2	0.1
<i>Chlamydia trachomatis</i> infection	94	298.5	220	254.9	4346	324.7
Coccidioidomycosis	0	0.0	0	0.0	2	0.1
Cryptosporidiosis	1	3.2	3	3.5	60	4.5
Dengue	0	0.0	0	0.0	3	0.2
Ehrlichiosis, <i>chaffeensis</i>	0	0.0	0	0.0	19	1.4
Ehrlichiosis/Anaplasmosis, undetermined	0	0.0	0	0.0	9	0.7
Emerging Infection	0	0.0	0	0.0	1	0.1
Giardiasis	1	3.2	8	9.3	163	12.2
Gonorrhea	4	12.7	15	17.4	686	51.3
Group A <i>Streptococcus</i> , invasive	3	9.5	8	9.3	85	6.4
<i>Haemophilus influenzae</i> , invasive	1	3.2	1	1.2	24	1.8
Hepatitis A, acute	0	0.0	0	0.0	9	0.7
Hepatitis B, acute	5	15.9	12	13.9	52	3.9
Hepatitis B, chronic	10	31.8	15	17.4	201	15.0

Counts of confirmed and probable cases. Rates of confirmed and probable cases per 100,000 people.

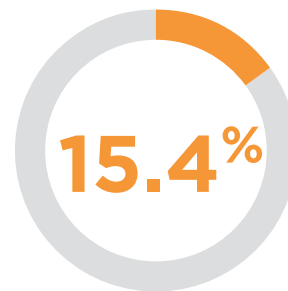
Condition	County		District		State	
	Count	Rate	Count	Rate	Count	Rate
Hepatitis C, acute	1	3.2	3	3.5	39	2.9
Hepatitis C, chronic	47	149.3	115	133.3	1872	139.9
HIV	0	0.0	4	4.6	30	2.2
Invasive Pneumococcal Disease	7	22.2	13	15.1	132	9.9
Jamestown Canyon virus	0	0.0	0	0.0	1	0.1
Legionellosis	0	0.0	2	2.3	34	2.5
Listeriosis	0	0.0	0	0.0	7	0.5
Lyme disease	15	47.6	189	219.0	1405	105.0
Malaria	0	0.0	1	1.2	9	0.7
Mumps	0	0.0	0	0.0	4	0.3
<i>Neisseria meningitidis</i> , invasive (Mening. disease)	0	0.0	0	0.0	1	0.1
Pertussis	1	3.2	32	37.1	446	33.3
Q fever	0	0.0	0	0.0	1	0.1
Rabies PEP	10	31.8	12	13.9	152	11.4
Rabies, animal	5	NA	8	NA	76	NA
<i>S. aureus</i> , methicillin resistant (MRSA), invasive	9	28.6	20	23.2	243	18.2
Salmonellosis	3	9.5	10	11.6	119	8.9
Shiga toxin-producing <i>Escherichia coli</i> (STEC)	0	0.0	0	0.0	37	2.8
Shigellosis	0	0.0	0	0.0	7	0.5
Spotted Fever Rickettsiosis	1	3.2	2	2.3	10	0.7
Streptococcal toxic-shock syndrome	1	3.2	2	2.3	12	0.9
Syphilis	2	6.4	4	4.6	104	7.8
Tuberculosis	0	0.0	1	1.2	14	1.0
Varicella (Chickenpox)	4	12.7	13	15.1	252	18.8
Vibriosis	0	0.0	1	1.2	14	1.0
WNV, Non-Human	0	NA	0	NA	5	NA
West Nile Fever	0	0.0	0	0.0	2	0.1

# YORK COUNTY



**206,229**

**Population**



**Of Maine's Total  
Population**

Condition	County		District		State	
	Count	Rate	Count	Rate	Count	Rate
<i>Anaplasma phagocytophilum</i>	84	40.7	84	40.7	476	35.6
Babesiosis	27	13.1	27	13.1	101	7.5
<i>Borrelia miyamotoi</i>	0	0.0	0	0.0	8	0.6
Campylobacteriosis	29	14.1	29	14.1	247	18.5
Carbapenem-resistant <i>Enterobacteriaceae</i> (CRE)	18	8.7	18	8.7	92	6.9
Chikungunya Virus	0	0.0	0	0.0	2	0.1
<i>Chlamydia trachomatis</i> infection	594	288.0	594	288.0	4346	324.7
Coccidioidomycosis	0	0.0	0	0.0	2	0.1
Cryptosporidiosis	9	4.4	9	4.4	60	4.5
Dengue	0	0.0	0	0.0	3	0.2
Ehrlichiosis, <i>chaffeensis</i>	1	0.5	1	0.5	19	1.4
Ehrlichiosis/Anaplasmosis, undetermined	1	0.5	1	0.5	9	0.7
Emerging Infection	1	0.5	1	0.5	1	0.1
Giardiasis	17	8.2	17	8.2	163	12.2
Gonorrhea	77	37.3	77	37.3	686	51.3
Group A <i>Streptococcus</i> , invasive	5	2.4	5	2.4	85	6.4
<i>Haemophilus influenzae</i> , invasive	4	1.9	4	1.9	24	1.8
Hepatitis A, acute	1	0.5	1	0.5	9	0.7
Hepatitis B, acute	8	3.9	8	3.9	52	3.9
Hepatitis B, chronic	16	7.8	16	7.8	201	15.0

Counts of confirmed and probable cases. Rates of confirmed and probable cases per 100,000 people.



Condition	County		District		State	
	Count	Rate	Count	Rate	Count	Rate
Hepatitis C, acute	4	1.9	4	1.9	39	2.9
Hepatitis C, chronic	275	133.3	275	133.3	1872	139.9
HIV	3	1.5	3	1.5	30	2.2
Invasive Pneumococcal Disease	18	8.7	18	8.7	132	9.9
Jamestown Canyon virus	0	0.0	0	0.0	1	0.1
Legionellosis	5	2.4	5	2.4	34	2.5
Listeriosis	1	0.5	1	0.5	7	0.5
Lyme disease	201	97.5	201	97.5	1405	105.0
Malaria	1	0.5	1	0.5	9	0.7
Mumps	1	0.5	1	0.5	4	0.3
<i>Neisseria meningitidis</i> , invasive (Mening. disease)	0	0.0	0	0.0	1	0.1
Pertussis	173	83.9	173	83.9	446	33.3
Q fever	0	0.0	0	0.0	1	0.1
Rabies PEP	38	18.4	38	18.4	152	11.4
Rabies, animal	4	NA	4	NA	76	NA
<i>S. aureus</i> , methicillin resistant (MRSA), invasive	32	15.5	32	15.5	243	18.2
Salmonellosis	24	11.6	24	11.6	119	8.9
Shiga toxin-producing <i>Escherichia coli</i> (STEC)	8	3.9	8	3.9	37	2.8
Shigellosis	0	0.0	0	0.0	7	0.5
Spotted Fever Rickettsiosis	0	0.0	0	0.0	10	0.7
Streptococcal toxic-shock syndrome	3	1.5	3	1.5	12	0.9
Syphilis	22	10.7	22	10.7	104	7.8
Tuberculosis	0	0.0	0	0.0	14	1.0
Varicella (Chickenpox)	54	26.2	54	26.2	252	18.8
Vibriosis	4	1.9	4	1.9	14	1.0
WNV, Non-Human	3	NA	3	NA	5	NA
West Nile Fever	0	0.0	0	0.0	2	0.1

## WORKGROUP SUMMARIES



### DATA QUALITY WORKGROUP

Maine's Data Quality Workgroup meets every other week to review data quality of laboratory reports that are sent to Maine Center for Disease Control and Prevention (Maine CDC) with attention paid to those facilities that only send electronic lab reports (ELR). The Workgroup is chaired by Maine CDC's Infectious Disease Informatician and other attendees are the Infectious Disease Program Director, Informatics Epidemiologist, and Influenza Surveillance Coordinator. The Data Quality Workgroup ensures that lab volumes are consistent and that all data feeds are running correctly. The group also reviews documents submitted by the labs that are looking to stop faxing paper lab reports and move to ELR only. In 2018, Maine CDC approved an additional facility to report only electronically bringing the total paper off reporters to six.



### FOOD SAFETY WORKGROUP

The Maine Interagency Food Safety Workgroup is led by Maine CDC's Foodborne Disease Epidemiologist and is comprised of representatives from state agencies, federal agencies, and other organizations involved in improving food safety in Maine (including, but not limited to, Maine Department of Marine Resources (Maine DMR), Maine Department of Agriculture, Conservation, and Forestry (Maine DACF), Maine Department of Education (Maine DOE), United States Department of Agriculture (USDA), the Food and Drug Administration (FDA), and the University of Maine Cooperative Extension). These organizations and agencies collaborate to reduce the incidence of foodborne and waterborne infectious diseases in the state, respond to foodborne and waterborne outbreaks, and work together to advance food safety initiatives. The Workgroup meets quarterly during the year to discuss the latest developments and cooperate to improve response and prevention. It occasionally holds trainings for its member agencies and invites industry members to meetings to highlight common issues.

Members of the Workgroup and Maine CDC infectious disease epidemiologists investigated a large waterborne outbreak of norovirus during the summer of 2018. Members of the Workgroup collaborated on several other outbreak investigations over the course of the year. Several members of the Workgroup presented at various conferences and meetings throughout the year, including the FDA Northeast Annual Food Protection Seminar in Portland in September 2018.

## HEALTH EDUCATION WORKGROUP

Maine CDC's Health Education Workgroup started meeting in December of 2018 and meets every other month to address health education topics in public health. The Workgroup aims to strengthen skills such as health literacy, plain language, provider outreach, and the use of social media and infographics. This meeting also provides an opportunity to share resources and allows Maine CDC's programs to be more interconnected. The Workgroup is chaired by Maine CDC's Infectious Disease Health Educator and includes health educators and similar roles from Maine CDC's Environmental and Occupational Health Program, HIV, STD, and Viral Hepatitis Program, Immunization Program, and Tobacco and Substance Use Prevention and Control Program. The Workgroup plans to expand in 2019 to include representation from other programs including Women, Infants, and Children Nutrition Program and the Suicide Prevention Program.



## INFLUENZA WORK GROUP

Maine's Influenza Workgroup meets quarterly to address current topics in influenza and other viral respiratory pathogens. The Workgroup is chaired by the Influenza Surveillance Coordinator and includes representatives from Infectious Disease Epidemiology, Public Health Preparedness, the Maine Immunization Program, Public Health Nursing, Maine's Health and Environmental Testing Laboratory (HETL), Maine DACF, and other relevant partners. The Workgroup coordinates surveillance and response to influenza and maintains and updates the Pandemic Influenza Operations Plan. The Influenza Workgroup also sponsors a start of influenza season conference call for healthcare providers and laboratories to update them on new guidance, reporting requirements, and assistance available from the State.



# WORKGROUP SUMMARIES



## RABIES WORKGROUP

The Maine Rabies Workgroup meets quarterly to address current topics in statewide rabies prevention and management. The Workgroup, co-chaired by the State Epidemiologist and the State Veterinarian, is comprised of animal and human health representatives from local, state, and federal agencies whose mission is to control the spread of rabies, a fatal zoonotic disease that is endemic in Maine. Agencies and organizations that participate in the Workgroup include, but are not limited to: Maine CDC, Maine DACF, HETL, Maine Department of Inland, Fisheries, and Wildlife (Maine IF&W), USDA, Maine Veterinary Medical Association, Maine Federation of Humane Societies, and the Maine Animal Control Association.

Members of the Workgroup provide training to town animal control officers and game wardens regarding rabies biology and prevention and control of the disease in Maine. The USDA's Animal and Plant Health Inspection Service distributes oral rabies vaccines in northern and eastern areas of the state with the goal to reduce the incidence of raccoon rabies. In 2018, the Workgroup introduced and piloted the Mail-A-Bat program at five vet clinics across the state. The Workgroup provided clinics with shipping material to mail bats to HETL for rabies testing. After a successful trial, the Workgroup hopes to expand this program to more vet clinics in future years.



## SYNDROMIC SURVEILLANCE USER GROUP

Maine's Syndromic Surveillance User Group meets every other month to address topics related to syndromic surveillance such as opioid overdose and influenza like illness (ILI) related emergency department visits as well as provide training on the use of available tools such as the Electronic Surveillance System for the Early Notification of Community-based Epidemics (ESSENCE). The User Group is chaired by the Informatics Epidemiologist and includes partners from within Maine CDC, Substance Abuse and Mental Health Services Administration (SAMSHA), Emergency Medical Services (EMS) as well as hospitals around Maine. The Group started meeting in April 2018 and provided several trainings for ESSENCE. The Group also worked together to create dashboards which have trend-over-time graphs and maps for topics that are of interest to the Group such as influenza-like illness and drug overdose syndromes.

## VECTORBORNE WORKGROUP

Maine's Vectorborne Workgroup meets every other month to address current topics in vectorborne diseases including illnesses spread by ticks, mosquitoes, and vectors of other medical importance like browntail moths. The Workgroup is chaired by the Infectious Disease Epidemiology Program Director at Maine CDC and includes representatives from epidemiology, environmental health, HETL, Maine DACF, Maine DOE, Maine Department of Environmental Protection, Maine Medical Center Research Institute, University of Maine Cooperative Extension, Maine IF&W, the Biodiversity Research Institute, pest control companies, and other relevant individuals.

Subcommittees include the Wildlife Subcommittee which works on issues like deer density, the Messaging Committee which works on creating and standardizing information for common questions, and the Education Subcommittee which works on outreach. The Workgroup coordinates mosquito and tick surveillance within the state, and supports Lyme Disease Awareness Month in May.

The committee also launched a new mosquito messaging website with commonly asked questions, their answers, and the references that back the answers up. This website can be viewed at [www.maine.gov/dhhs/mosquitofaq](http://www.maine.gov/dhhs/mosquitofaq).



## REMOVING BARRIERS TO HEPATITIS C TREATMENT **IN MAINE**



MaineCare clients are no longer required to prove sobriety to receive treatment for hepatitis C.

On July 10, 2018, a group of doctors and hepatitis specialists from Maine sent a letter to MaineCare, Maine's Medicaid program, advocating for the removal of the sobriety barrier for hepatitis C treatment for MaineCare patients. This letter prompted MaineCare to request Maine CDC's Viral Hepatitis Prevention Program to present information on studies related to sobriety barriers for hepatitis C treatment to MaineCare's Drug Utilization Review Committee. The Committee voted unanimously to remove the sobriety barrier, and on October 1, 2018, MaineCare clients were no longer required to prove sobriety to receive treatment for hepatitis C.

Previously, MaineCare required clients to be sober from alcohol and illicit drugs for six months before receiving hepatitis C treatment. However, multiple studies show that sobriety restrictions are unnecessary and undermine public health efforts to end the hepatitis C epidemic.<sup>1,2</sup> In addition, removing sobriety barriers to hepatitis C treatment can result in lower medical costs to the state.<sup>3</sup> The cost of treating hepatitis C when diagnosed is far less expensive than treating liver disease or performing liver transplants, for which hepatitis C is the leading cause.<sup>4,5</sup>

Studies show that hepatitis treatment medication is just as effective in people who use drugs (PWUD) or alcohol as it is in people who do not, and PWUD adhere to treatment at the same rates as non-drug using individuals.<sup>6,7,8,9,10,11</sup> Also, hepatitis C treatment for PWUD can lead to significant reductions in hepatitis C prevalence and reduced transmissions. Furthermore, the risk of reinfection for PWUD is less than 4%.<sup>9,12</sup>

Sobriety restrictions come with legal and financial risks. Several states with sobriety barriers for hepatitis C treatment in their Medicaid programs have lost costly lawsuits for not providing this treatment.<sup>13,14,15,16</sup> Currently, at least half of all state Medicaid programs do not require individuals to meet sobriety criteria before obtaining treatment.<sup>17</sup> Lessons learned from the HIV epidemic of the 1980s and 1990s showed that having health insurance coverage and access to treatment was crucial in ending those epidemics.<sup>18,19</sup> Maine CDC's Viral Hepatitis Prevention Program continues to provide information to healthcare providers, state agencies and the public to help end the hepatitis C epidemic.





<sup>1</sup> National Viral Hepatitis Roundtable, *Hepatitis C: The State of Medicaid Access*, Report, October 23, 2017 [https://stateofhepc.org/wp-content/uploads/2017/10/State-of-HepC\\_2017\\_FINAL.pdf](https://stateofhepc.org/wp-content/uploads/2017/10/State-of-HepC_2017_FINAL.pdf)

<sup>2</sup> The American Association for the Study of Liver Diseases and the Infectious Diseases Society of America, *HCV Guidance: Recommendations for Testing, Managing, and Treating Hepatitis C*, Sep. 21, 2017, available at <https://www.hcvguidelines.org/>.

<sup>3</sup> National Center for Biotechnology Information, *Recommendations for the management of hepatitis C infection among people who inject drugs*, August 2013 <https://www.ncbi.nlm.nih.gov/pubmed/23884061>.

<sup>4</sup> NASTAD. *Science over Stigma: The Public Health Case Against HCV Treatment Sobriety Restrictions*. NASTAD. [https://www.nastad.org/sites/default/files/nondiscrimination-in-hcv-tx-provision\\_final\\_tem.pdf](https://www.nastad.org/sites/default/files/nondiscrimination-in-hcv-tx-provision_final_tem.pdf). August 2017

<sup>5</sup> Bentley, T.S., Phillips, S.J., 2017 U.S. Organ and Tissue Transplant Cost Estimates and Discussion. *Milliman Research Report*. August 2017; p5. [https://researchguides.uic.edu/ld.php?content\\_id=10003294](https://researchguides.uic.edu/ld.php?content_id=10003294)

<sup>6</sup> Campbell, Canary, Smith, et al., *State HCV Incidence and Policies Related to HCV Preventive and Treatment Services for Persons Who Inject Drugs — United States, 2015–2016*, 66 *MMWR* 1 (2017).

<sup>7</sup> Tsui J, Williams E, Green P, Berry K, Su F, and Ioannou G., *Alcohol use and hepatitis C virus treatment outcomes among patients receiving direct antiviral agents*, 169 *DRUG ALCOHOL DEPEND* 101 (2016).

<sup>8</sup> *Ann Intern Med*. 2016; 165(9):625-634. doi: 10.7326/M16-0816. <http://annals.org/aim/fullarticle/2542526/elbasvir-grazoprevir-treat-hepatitis-c-virus-infection-persons-receiving-opioid>

<sup>9</sup> Medical Xpress, *New research supports the removal of drug use as a restriction to hepatitis C treatment*, August 9, 2016 <http://medicalxpress.com/news/2016-08-drug-restriction-hepatitis-treatment.html>

<sup>10</sup> Aspinall EJ, Corson S, Doyle JS, et al., *Treatment of hepatitis C virus infection among people who are actively injecting drugs: a systematic review and meta-analysis*, 57 *CLIN INFECT DIS*.S80 (2013).

<sup>11</sup> Campbell, Canary, Smith, et al.

<sup>12</sup> *Ann Intern Med*. 2016; 165(9):625-634. doi: 10.7326/M16-0816.

<sup>13</sup> "Washington state told to lift restrictions on hepatitis C medicines." *Stat News*. May 27, 2016. <https://www.statnews.com/pharmalot/2016/05/27/washington-state-hepatitis-drug-prices/>

<sup>14</sup> "Two Florida Lawsuits Win Class-Action Settlements for Hepatitis C Coverage." *Hep Magazine*. December 14, 2017. <https://www.hepmag.com/article/two-florida-lawsuits-win-classaction-settlements-hepatitis-c-coverage>

<sup>15</sup> "Florida let hepatitis C go untreated in prisons, now it may cost taxpayers millions." *Miami Herald*. <https://www.miamiherald.com/news/state/florida/article185341808.html>.

<sup>16</sup> "More prison inmates get access to hepatitis C drugs." *The Wall Street Journal*. March 9, 2018. <https://www.wsj.com/articles/more-prison-inmates-get-access-to-hepatitis-c-drugs-1520631413>

<sup>17</sup> National Viral Hepatitis Roundtable, *Hepatitis C: The State of Medicaid Access*, Report, October 23, 2017

<sup>18</sup> Don C. Des Jarlais; Thomas Kerr; Patrizia Carrieri; Jonathan Feelemyer; Kamyar Arasteh. *HIV Infection Among Persons who Inject Drugs; Ending Old Epidemics and Addressing New Outbreaks*. *AIDS*. 2016;30(6):815-826. <https://www.medscape.com/viewarticle/862885>. August 1, 2018.

<sup>19</sup> Lucas Wiessing, Catharina Mathei, Peter Vickerman, Maria Prins, Mirjam Kretzschmar, Maria Kantzanou, Isabelle Giraudon, Marica Ferri, Paul Griffiths. *How lessons learned from HIV can inform the global response to viral hepatitis & Tackling hepatitis C among PWID in Europe*. *BioMed Central Infectious Diseases*. 2014 Sep 19. Doi: 10.1186/1471-2334-14-S6-S18. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4178551/>. Aug 1, '18.

## LYME DISEASE SOCIAL MEDIA CAMPAIGN

The Public Health Corps (PHC), within Maine CDC's Division of Disease Surveillance, designed and launched a Lyme disease social media campaign aimed at adults 65 years and older. The campaign targeted this specific age group because adults ages 65 years and older have the highest rate of Lyme disease in Maine. The PHC conducted a literature review and found that best practices for public health social media campaigns include the use of videos less than 44 seconds, pictures, and mascots. Mascots are beneficial in messaging since they help brand the campaign and allow users to quickly recognize the material. Maine CDC worked with a graphic designer to create four video slideshows, a static photo advertisement, and a mascot for the campaign (Image 1).



Image 1

In August 2018, Maine CDC posted each advertisement for one week as Facebook boosted posts, Facebook sponsored advertisements, and YouTube paid instream video advertisements. Maine CDC spent \$9,298.42 in total on the campaign. To determine the number of views and reach of each advertisement, Maine CDC looked at Google and Facebook analytics.

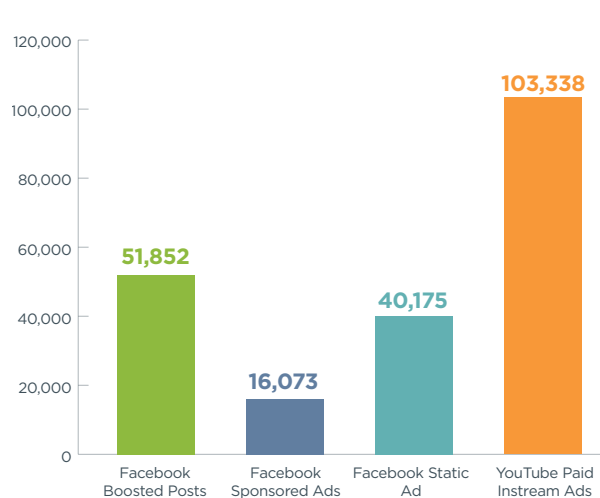


Chart 1: Average Number of Advertisement Views by Dissemination Method

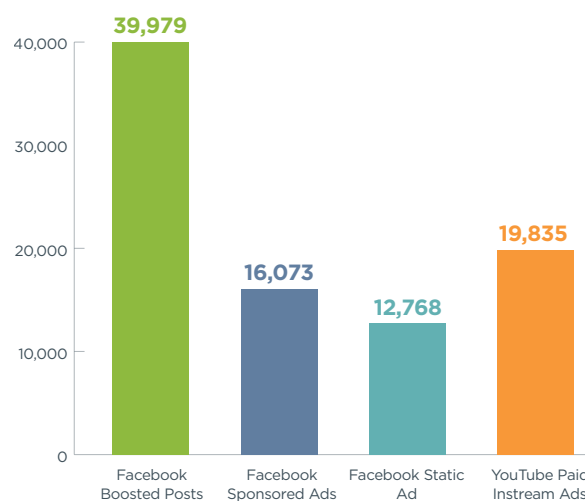


Chart 2: Average Number of Viewers Within the Target Population



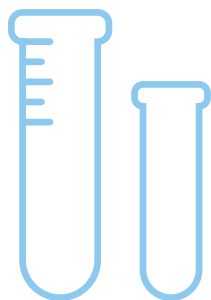


Facebook boosted posts generated an average of 51,852 views and reached 46,370 people. Facebook sponsored advertisements generated an average of 16,073 views and reached 25,304 people. The Facebook sponsored static advertisement reached 40,175 people. There are no data available on the average number of views for Facebook static advertisements since they are viewed differently than videos. YouTube paid instream advertisements generated an average of 46,377 views and reached 104,021 people. Maine CDC found that YouTube paid instream advertisements and Facebook boosted posts reached more people and generated the most views (Chart 1). YouTube paid instream advertisements generated the most views when Maine CDC selected to advertise to both the

target age group and users with an unknown age. Facebook boosted posts and Facebook sponsored advertisements reached the most people within the target population (Chart 2).

Maine CDC found that each advertisement method had strengths and weaknesses. YouTube paid instream advertisements work best to reach the general public, while Facebook boosted posts work best to reach an age-specific target population. The Facebook static advertisement had more views than Facebook sponsored advertisements, although the static advertisement reached less of the target population. Maine CDC will use this information to inform future social media campaigns to maximize the reach of the information to target populations.

## EXTRAGENITAL TESTING: POTENTIAL SOLUTIONS TO CURB THE INCIDENCE OF STI INFECTIONS IN MAINE



Rapid detection of STIs is crucial in reducing the incidence of STIs in Maine.

There is an increase in cases of sexually transmitted infections (STIs) in the United States, as well as in the state of Maine. From 2016-2017, Maine saw an increase of 30% for gonorrhea and 77% for infectious syphilis. There was another increase from 2017-2018, with a 19% increase in gonorrhea and a 25% increase in infectious syphilis. There are many hypotheses of why STIs are increasing nationally, including: better surveillance, increased testing, reduced condom use, and an upsurge in popularity of dating apps which may increase one's sexual network. Transmission is further amplified by the high rates of undiagnosed asymptomatic STIs, or STIs that are left untreated/untested because they are in exposure sites that are not typically tested (pharyngeal or rectal). Rapid detection of STIs is crucial in reducing the incidence of STIs in Maine. Some health consequences of untreated STIs include: stillbirths, ectopic pregnancy, pelvic inflammatory disease, infertility and an increased risk for HIV transmission.



### It is possible that providers are missing asymptomatic

STIs that present in extragenital sites of exposure. The federal CDC's current recommendations state that men who have sex with men (MSM) who have had receptive anal or oral sex be screened using the Nucleic Acid Amplification Test (NAAT) annually<sup>1</sup>. Medical providers should take thorough sexual health histories to assess if an individual should be tested more frequently. Studies indicate that genitourinary screening alone for MSM has the potential to miss 80% of chlamydia and 77% of gonorrhea infections<sup>2</sup>. Research shows that medical providers are screening regularly for syphilis among HIV positive MSM but are screening less than 10% of HIV positive MSM for gonorrhea and chlamydia (rectal and pharyngeal).<sup>1</sup> Anal chlamydia and gonorrhea infections are associated with a greater risk of acquiring HIV. One-in-ten new HIV cases among MSM are due to the presence of chlamydia and gonorrhea infection<sup>3</sup>. Maine 2018 data indicate



that rectal and pharyngeal STI testing only represent about 1% of total STI testing (8% of STI testing had no specimen description listed). Potential barriers to lack of extragenital testing could be physicians' comfort level in taking sexual history and the fact that extragenital testing is not yet FDA approved.

<sup>1</sup> Center for Disease Control and Prevention. (2015). Special Populations - 2015 STD Treatment Guidelines." Centers for Disease Control and Prevention, [www.cdc.gov/std/tg2015/specialpops.htm](http://www.cdc.gov/std/tg2015/specialpops.htm).

<sup>2</sup> Danby, C. S., Cosentino, L. A., Rabe, L. K., Priest, C. L., Damare, K. C., Macio, I. S., Meyn, L. A., Wiesenfeld, H. C., ... Hillier, S. L. (2016). Patterns of Extragenital Chlamydia and Gonorrhea in Women and Men Who Have Sex With Men Reporting a History of Receptive Anal Intercourse. *Sexually transmitted diseases*, 43(2), 105-9.

<sup>3</sup> Centers for Disease Control and Prevention. Detailed STD Facts - HIV/AIDS & STDs. (2014). Centers for Disease Control and Prevention, [www.cdc.gov/std/hiv/stdfact-std-hiv-detailed.htm](http://www.cdc.gov/std/hiv/stdfact-std-hiv-detailed.htm).

## EMERGING THREAT: CARBAPENEMASE-PRODUCING ORGANISMS

### BACKGROUND:

While most bacterial resistance is acquired from prior exposure to antibiotics, there are some bacteria that can share their resistance genes directly with other bacteria, including bacteria of other genus and species. This type of bacterial resistance is known as plasmid-mediated resistance.

### THE THREAT:

- Carbapenemase-producing organisms (CPO) are a subset of carbapenemase-resistant organisms (CRO) that are capable of plasmid-mediated resistance.
- CPOs are highly resistant to multiple classes of antibiotics, leaving clinicians with few treatment options.
- Infections with CPOs are associated with high mortality rates.
- A person can be colonized with a CPO and not be aware of it, potentially spreading it.
- Hospitalization outside of the USA, including surgery and dialysis, in an CPO endemic country, is a significant risk factor for acquiring a CPO.
- CPOs are now found in every state in the USA, including Maine.

### CARBAPENEM-RESISTANCE DEFINED:

#### CRO Carbapenem-resistant

Carbapenem-resistant Organisms (CRO) are bacteria in the family Enterobacteriaceae (e.g. *Citrobacter* spp., *Enterobacter* spp., *Escherichia coli*, *Klebsiella* spp., *Morganella morganii*, *Proteus* spp., *Providencia* spp., *Serratia* spp., *Salmonella* spp., *Shigella* spp., *Yersinia* spp.), *Pseudomonas aeruginosa* and *Acinetobacter baumannii* that test resistant to one or more carbapenem antibiotics, regardless of the method of resistance.

#### Non-CPO Acquired resistance

Non carbapenemase-producing organisms (non-CPO), are those CROs that have undergone further laboratory testing and were found not to contain a carbapenemase-producing enzyme that breaks down the carbapenem antibiotics or the gene (e.g. IMP, KPC, NDM, OXA-48, VIM) that produces the carbapenemase enzyme. Therefore, resistance to the carbapenem antibiotic(s) is acquired resistance.

#### CPO Plasmid-mediated resistance

Carbapenemase-producing organisms (CPO), are CROs that test positive for the carbapenemase-producing enzyme or gene, signifying that resistance to the carbapenem antibiotic(s) is plasmid-mediated. CPOs can share their resistance genes directly with other bacteria and are considered a public health threat.



## PREVENTION:

- Hand hygiene is still the best prevention.
- Clean and disinfect patient rooms and equipment.
- Follow contact precautions for known patients colonized or infected with a CPO.
- Practice good antimicrobial stewardship.

## HEALTHCARE FACILITIES SHOULD NOTIFY MAINE CDC AT 1-800-821-5821 WHEN:

- A CRO is identified (and send the isolate to the state public health laboratory)
- Healthcare associated transmission of a CRO is suspected

Carbapenemase-producing organisms are emerging multi-drug resistant bacteria that present a serious health threat for the people of Maine.



## MAINE'S RYAN WHITE PART B AND AIDS DRUG ASSISTANCE PROGRAM

The Ryan White Part B Program helps low-income people living with HIV (PLWH) in Maine fill gaps in care and treatment by providing a variety of services, depending on individual need, with the ultimate goal being the achievement and maintenance of viral suppression. The Ryan White Part B Program helps low-income PLWH access food, dental care, and housing. The Program also supports medical case management for those who do not qualify for other types of case management, and administers the AIDS Drug Assistance Program (ADAP), which helps low-income PLWH obtain and maintain access to prescription drugs to treat HIV and its related conditions. ADAP services include assistance with health insurance premiums, copays, deductibles, coinsurance, HIV-related lab tests, and the full cost of HIV-related drugs for those without insurance.

People Living with HIV Utilizing Ryan White Part B Services, 2015-2018

Service	2015	2016	2017	2018
Dental assistance	183	180	279	293
Food assistance	497	522	579	584
Full-cost drugs	110	120	106	118
Housing assistance	168	199	257	304
Insurance premiums	208	190	240	299
Lab tests	14	20	24	25
Medical case management	87	90	97	101
Prescription wrap-around	626	602	544	560
Total utilizing members	882	923	939	987

PLWH who are virally suppressed (defined as a viral load test result less than 200 copies/mL) are less likely to develop HIV-related complications, so they lead longer, healthier lives and require less costly care and treatment. PLWH who are virally suppressed are much less likely to transmit the virus to others. The National HIV/AIDS Strategy calls for viral suppression among 80 percent of all PLWH in the U.S. by 2020. In 2018, 90 percent of Part B Program enrollees were virally suppressed as of the last result reported in 2018, compared to 85 percent of enrollees in 2017.

**Viral Suppression Among Ryan White Part B Enrollees by Public Health District, 2018**

District	Number Virally Suppressed	Number Enrolled	% Virally Suppressed
Aroostook	27	29	93%
Central	123	142	87%
Cumberland	354	386	92%
Downeast	70	78	90%
Mid Coast	64	69	93%
Penquis	81	86	94%
Western	126	151	83%
York	133	146	91%
<b>Overall</b>	<b>978</b>	<b>1,087</b>	<b>90%</b>



**90%**

of people living with HIV enrolled in Maine's Ryan White Part B Program were virally suppressed in 2018.

## POND OUTBREAK

### CUMBERLAND COUNTY JULY 2018

On Friday July 6, 2018 a member of the public contacted Maine CDC about family and friends who became ill with gastrointestinal symptoms after visiting a public beach on Woods Pond, operated by the Town of Bridgton, Maine. Given the gastrointestinal (GI) symptoms and the epidemiology described in the initial report, an outbreak team quickly formed to investigate. Maine CDC notified and worked closely with local hospitals and officials to investigate this outbreak. Based on information provided to town officials, the Town of Bridgton closed the public beach on July 6.

Using the initial information provided, Maine CDC's Cumberland Field Epidemiologist conducted open ended interviews with seven heads of households to generate a list of questions for a wider attendee survey. The Foodborne and Waterborne Epidemiologist added exposures of note to a modified version of the Division of Disease Surveillance's Foodborne/Enteric Disease survey template. The Maine CDC interview team consisted of five epidemiologists and one public health educator. The interview team used this survey to collect information about individuals' exposures, symptoms, and duration of illness.

Using the Maine CDC Facebook page, Maine CDC issued a call for cases and identified additional individuals who visited the pond between July 1 – July 6, 2018. In many circumstances, the heads of households provided answers for multiple family members. The interview team entered interview data into a spreadsheet, and the Foodborne and Waterborne Epidemiologist analyzed these using Epi Info 7 statistical software. Maine CDC asked ill respondents to submit stool specimens for viral and bacterial testing at Maine's Health and Environmental Testing Laboratory (HETL). New York State Wadsworth Center Virology Laboratory assisted in confirming test results as needed.

Maine CDC consulted with the federal Centers for Disease Control and Prevention (CDC) regarding testing the pond's water if the outbreak team deemed it appropriate. The outbreak team also discussed additional testing and epidemiology strategies. Maine CDC decided testing of the pond water would not be useful given the circumstances of the outbreak.

After the call for additional cases, Maine CDC interviewed a total of thirty-four (34) heads of household by phone and collected data on 148 people who visited the pond or were exposed to ill individuals at home. 139 people reported attending the pond between July 1 – July 6. Of those who visited the pond, 97 people reported being sick (attack rate: 69.8%). Pond visitors who went under the water or swallowed the water while swimming were over three times more likely to be sick than those who did not (relative risk = 3.19,  $p < 0.001$ ). There were no significant relative risks for other exposures such as using the playground and eating or drinking at the beach.

# 69.8%

Attack Rate

# 3X

Swimmers who went under water were 3 times more likely to become ill.





Health care providers collected four (4) human stool specimens for bacterial and viral testing that was performed at HETL. Two out of four human stool specimens tested positive for Norovirus GI. Based on collected data and two positive human specimens, Maine CDC confirmed this as a continuous common source waterborne outbreak of norovirus with secondary person-to-person transmission.

Although Maine CDC associated the outbreak with swimming underwater at the beach, Maine CDC was unable to determine the source of the norovirus. There may have been numerous sources for contamination that resulted in a high number of ill individuals. The town of Bridgton reopened the public beach on July 10, 2018 and no additional individuals reported illnesses associated with this outbreak.

Maine CDC confirmed this as a continuous common source waterborne outbreak of norovirus with secondary person-to-person transmission.

## CAKE OUTBREAK

### ANDROSCOGGIN COUNTY JUNE 2018

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On Monday June 25, 2018 a Hospital Infection Preventionist (IP) notified Maine CDC of a gastrointestinal outbreak seemingly stemming from a work party event held on Thursday, June 21 at a private medical practice in Androscoggin County. Maine CDC's Western District Field Epidemiologist began collecting information about the outbreak and notified the Foodborne Epidemiologist who convened an outbreak investigation team.

The work party consisted of approximately 40 attendees; 21 had been or were currently ill with nausea, vomiting, and diarrhea. Many of the ill individuals had symptom onset on Friday, June 22 and Saturday, June 23. Average duration of illness was approximately two days. Employees attending the party brought in food for the potluck including: taco salad, homemade cookie cake, ice cream, assorted dips and chips, seven-layer dip, meatballs, strawberries stuffed with cheesecake filling, rotisserie chicken, potato salad, pasta salad, and soda.



Using this list, epidemiologists designed and administered a customized survey to better collect exposure and illness information. The Western District Field Epidemiologist interviewed 23 employees in person at the office, and other epidemiologists interviewed another 15 attendees by telephone. The Foodborne Epidemiologist analyzed the data collected from the surveys to look for statistically significant exposures that may have led to these illnesses. Those who ate or came in to contact with the cookie cake were more than eight (8) times more likely to be ill (relative risk = 8.34 [1.27 - 54.69],  $p < 0.0002$ ) than those who did not. Contact included eating, serving, cooking, preparing, and disposing of the cake. Epidemiologists found no

# 50%

Number of attendees who had been or were currently ill.



# 8X

Attendees who came in contact with the cake were 8 times more likely to become ill.

other food exposures significantly associated with illness. The employee who brought the homemade cookie cake to the potluck said that multiple family members were ill during the previous week.

One attendee submitted a stool specimen to Maine's Health and Environmental Testing Laboratory (HETL) for bacterial and viral testing. Epidemiologists collected leftover food from the office and brought it to HETL, and laboratorians sampled parts of the cookie cake for norovirus testing. All of the cake components tested negative for norovirus, but the one human specimen submitted tested positive for norovirus GII. Testing for norovirus in food is challenging, so the absence of norovirus in the cake sample did not mean that other parts of the cake were not contaminated.

In conclusion, epidemiologists classified this outbreak as a probable norovirus outbreak associated with consuming or coming into contact with the cookie cake at the party. Epidemiologists were able to provide a strong epidemiological link between illness and consumption of the cake despite the negative results on the cake samples tested. The Western District Field Epidemiologist shared these findings with the office and provided guidance on safe food handling practices, staying out of work while ill, not preparing food for others while ill, and general sanitation practices.

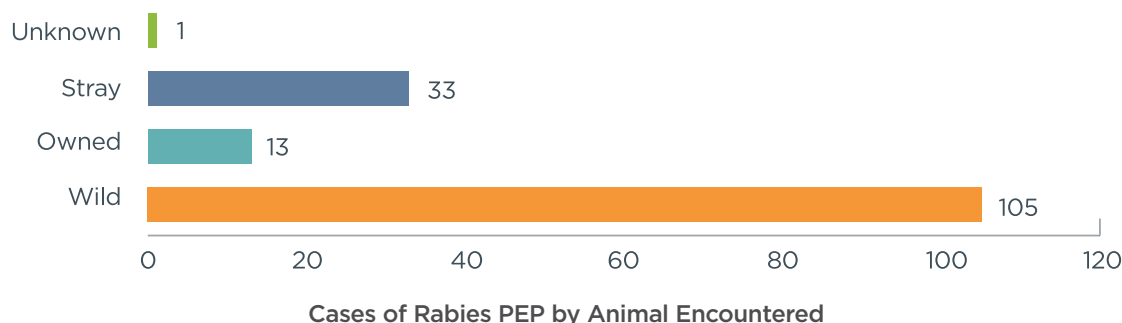
## RABIES POST-EXPOSURE PROPHYLAXIS (PEP) IN MAINE, 2018

Animal rabies is endemic in Maine and every year humans are exposed to rabid or potentially rabid animals. Rabies is 100% fatal if left untreated, but can be prevented when treated promptly after an exposure to the rabies virus. Recommendations for individuals to receive rabies treatment after an exposure to the rabies virus depend on the circumstances surrounding the exposure. The treatment is called rabies post-exposure prophylaxis (PEP), and it involves a series of rabies vaccines and rabies immune globulin (RIG) shots. Healthcare providers are required by Maine law to report rabies PEP to Maine CDC within 48 hours of administration, but many providers fall short of this requirement. For this reason, the reported cases of rabies PEP in Maine does not accurately represent the true number of rabies PEP given statewide.

Maine CDC considers a case of rabies PEP when a person either receives a treatment recommendation, begins treatment, or both. In 2018, Maine reported 152 cases of rabies PEP. 96% (146 reported cases) went to a healthcare provider or emergency department to begin their treatment. Six individuals received recommendations, but did not begin rabies PEP. One individual refused treatment. One individual no longer needed treatment because the attacking animal was ruled rabies free. Four individuals were lost to follow-up.

Rabies PEP is considered a medical urgency, but not a medical emergency. In many cases, rabies PEP can wait until the response measure (either quarantine or testing) for the attacking animal is completed. Of the 146 individuals who began rabies PEP, 37% (57 individuals) received rabies PEP because the attacking animal could not be located after the exposure and 23% (34 individuals) received rabies PEP because the attacking animal tested positive or unsatisfactory for rabies. Other reasons for the administration for rabies PEP include, but are not limited to, possible exposures to bats, contact with mucous membranes, or a severe attack to the head or neck.

Rabies PEP is readily available, but often in short supply. For this reason, healthcare providers must individually evaluate each suspected human exposure to a potentially rabid animal. Rabies exposures are rarely clear-cut issues, so treatment decisions must consider a variety of factors. These factors include type of exposure, extent or severity of exposure, type of animal species involved, animal vaccination status, circumstances leading to exposure, availability of animal for confinement and observation or testing, and the epidemiology of rabies in the region.



Generally, Maine CDC will recommend rabies PEP in cases where an animal tests positive for rabies, a high-risk animal is unavailable for quarantine or testing, or when serious attacks occur to the head, face, or neck. This is not a hard-set rule, but a guide as most people who are exposed to a potentially rabid animal still require a thorough evaluation. 37% of the 152 exposures in 2018 occurred to a hand or finger while 11% occurred to a leg, 8% to an arm, and 7% to the head or neck. In 7% of cases, exposures occurred to two or more regions of the body. About 30% of exposure sites were unknown.

Of the 152 animal exposures, bats were by far the most frequent animal encountered accounting for almost 40% of all cases of rabies PEP. Wild animal encounters made up 69% of all exposures followed by stray animal exposures at 22% and owned animal exposures just under 9%.

Rabies PEP is typically not required when pets bite humans because pets are typically available for confinement and observation. In 2018, 13 individuals received rabies treatment after a bite from an owned pet. In 31% of these cases, the pet's owner fled with the pet after the attack and in another 31% because the pet died within the days of exposure. Other situations why people received treatment after an exposure to a pet include, but are not limited to, owners provoking their pets, people exposed by someone else's pet while on a trip or camping, or pet could not be identified. Maine CDC normally does not recommend rabies PEP for encounters with small rodents like mice and squirrels because it is generally understood that small mammals are highly unlikely to survive an attack from a commonly rabid animal. Thus, it is unlikely for this group of mammals to transmit the rabies virus. Only in one rabies PEP case was the animal type and status unknown.

Maine CDC and Maine Department of Agriculture, Conservation, and Forestry, together with the Maine Rabies Workgroup, produce the Maine Rabies Management Guidelines. To review these guidelines and other resources, please visit [www.maine.gov/dhhs/rabies](http://www.maine.gov/dhhs/rabies).

**Cases of Rabies PEP by Animal Encountered  
Reported to Maine CDC, 2018**

Status	Animal	Rabies PEP
Wild	Bat	60
	Bear	1
	Ermine	1
	Fox	15
	Mouse	1
	Raccoon	20
	Skunk	4
	Squirrel	3
Owned	Cat	4
	Dog	9
Stray	Cat	23
	Dog	10
Unknown	Unknown	1
<b>Total</b>		<b>152</b>

# EVALUATION OF THE MAINE VARICELLA SURVEILLANCE SYSTEM

## BACKGROUND

In 2002, federal CDC encouraged states to develop case-based varicella surveillance systems by 2005 to help monitor changing trends in varicella epidemiology following the implementation of a routine varicella immunization schedule. Varicella surveillance aims to document the impact of varicella vaccine on varicella related morbidity and mortality, evaluate the effectiveness of prevention strategies, and evaluate vaccine effectiveness.

The Maine varicella surveillance system relied on passive case reports from healthcare providers, school nurses, and laboratories. Maine investigated all cases of varicella reported by a provider and all hospitalized or invasive cases of varicella zoster in patients over the age of 18 (determined by lab specimen source and/or patient status in lab report). Maine does not investigate other laboratory reports of varicella zoster in patients over the age of 18 but counts them as cases in the surveillance system. Maine classifies those with PCR or IgM positive labs as cases. Maine considers these cases of varicella to be “non-investigated varicella cases”.

## METHODS

In 2018, the Maine vaccine preventable disease (VPD) epidemiologist reviewed varicella surveillance as part of the VPD program evaluation. The VPD epidemiologist validated every reporting source and created a process to test the accuracy of case classification for non-investigated varicella cases. The VPD epidemiologist pulled all non-investigated cases of varicella from Maine’s electronic case database. An epidemiologist followed up on selected cases by calling the associated physician to get clinical information about the case and determine if the patient met the surveillance case classification for varicella.

## RESULTS

Since 2012, Maine averaged 117 non-investigated varicella cases per year. The proportion of non-investigated varicella cases averaged 57% of all cases (Table 1).

**Table 1. Investigated and non-investigated varicella cases, by year**

	2012	2013	2014	2015	2016	2017	2018
<b>Investigated varicella cases</b>	170 (65.9 %)	47 (33.6 %)	58 (28.0 %)	92 (39.5 %)	113 (49.6 %)	85 (42.9 %)	132 (52.4 %)
<b>Non-investigated varicella cases</b>	88 (34.1 %)	93 (66.4 %)	149 (72.0 %)	141 (60.5 %)	115 (50.4 %)	113 (57.1 %)	120 (47.6 %)
<b>Total varicella cases</b>	258 (100%)	140 (100%)	207 (100%)	233 (100%)	228 (100%)	198 (100%)	252 (100%)





In 2018, the VPD epidemiologist identified 120 non-investigated varicella cases and randomly selected 63 cases for follow-up. None of the 63 cases investigated met the varicella case definition. Forty-six of the 63 cases (73%) had shingles, six (10%) had titers drawn to check for immunity, and ten (16%) had other non-varicella diagnoses without a diffuse rash.

## CONCLUSIONS

The results of the investigation showed that classifying cases as varicella based only on laboratory results was inappropriate. Therefore, as of January 1, 2019, epidemiologists will review and document all varicella PCR positive or IgM positive laboratory results reported in adults >18 years but will not investigate or count the reports as cases unless providers specifically report the patients as cases or varicella-related deaths. This will greatly impact Maine varicella data, especially when comparing to previous years, but will improve accuracy and the Maine varicella surveillance system will reflect a better understanding of the true burden of varicella in the population.

## INFLUENZA EDUCATION AMONG YOUTH IN AGRICULTURE

During the 2017-2018 influenza season Maine participated in a federally funded project aimed at educating youth in agriculture on influenza and other zoonotic diseases. This was done as a collaboration between Maine Center for Disease Control and Prevention (Maine CDC) and Maine Department of Agriculture, Conservation, and Forestry (Maine DACF). The goal of this project was to educate youth about zoonotic infections, deliver prevention messages to keep people and animals safe and healthy, and strengthen One Health networks among state human and animal health departments and agricultural communities.





## TRAIN-THE-TRAINER EVENT:

In January 2018, Maine CDC and Maine DACF held a train-the-trainer event for 39 youth agricultural leaders. Attendees included representatives from 14 out of 16 counties in Maine and representatives from 22 out of the 25 Maine annual agricultural fairs.

This event provided direct instruction to youth agriculture leaders about diseases that can be transmitted between animals and humans, signs and symptoms of the diseases, and prevention strategies to reduce the risk of transmission. Maine CDC and Maine DACF delivered this information through presentations, interactive activities and group discussions. Maine encouraged attendees to teach and share the information with their local youth agriculture groups after the train-the-trainer event.

As of July 1, 2018, 37 of the 39 (95%) participants completed or planned a teaching event for youth. Of the completed events, the average number of participants was 22 with a range of 6-60 with over 700 estimated total participants.

**37**

Events completed  
or planned

**6-60**

Number range of  
participants

**700**

Total Participants

# NOTIFIABLE DISEASES AND CONDITIONS LIST

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

Telephone: 1-800-821-5821

Fax: 1-800-293-7534

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

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

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

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

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

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

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

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

**Complete Rules for the Control of Notifiable Diseases and Conditions:**

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

## Footnotes:

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



Maine Center for Disease  
Control and Prevention

An Office of the  
Department of Health and Human Services





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

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