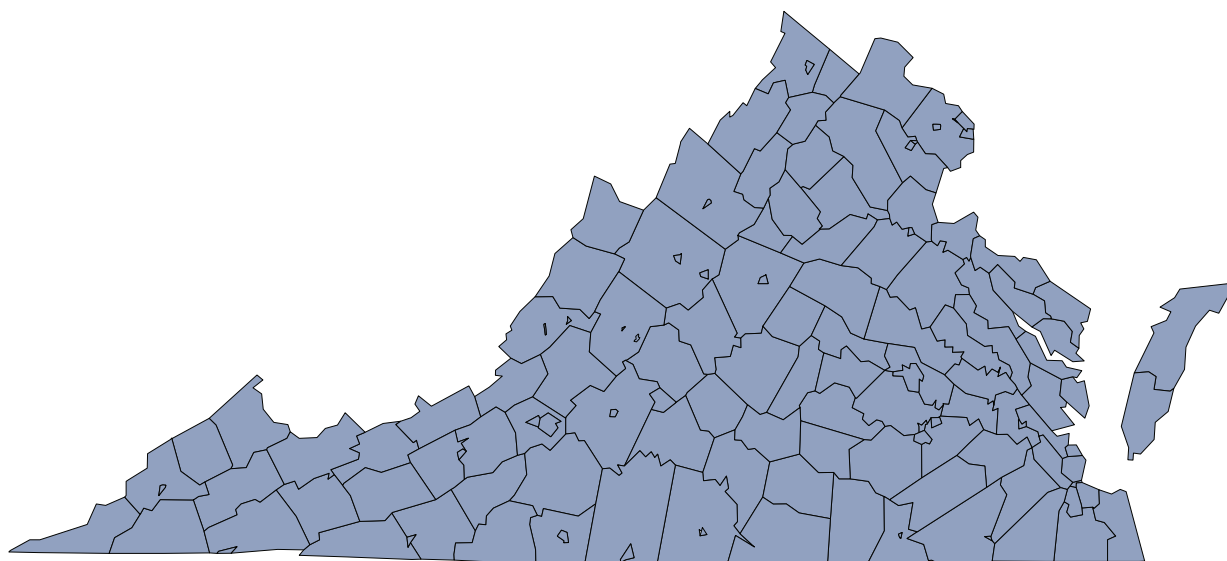


Reportable Disease Surveillance in Virginia, 2003



Office of Epidemiology

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TABLE OF CONTENTS

List of Figures	iv
List of Tables	v

INTRODUCTION

Introduction	1
Data Summary	3

DESCRIPTIVE EPIDEMIOLOGY OF REPORTABLE DISEASES

Amebiasis.....	18
Anthrax	18
Arboviral Infection	18
Botulism.....	20
Brucellosis	20
Campylobacteriosis	20
Chickenpox (Varicella).....	21
<i>Chlamydia trachomatis</i> Infection	21
Creutzfeldt-Jakob Disease	23
Cryptosporidiosis	23
Cyclosporiasis	23
Diphtheria	23
Ehrlichiosis	24
<i>Escherichia coli</i> O157:H7 Infection	24
Other Enterohemorrhagic <i>Escherichia coli</i> Infections	25
Giardiasis	26
Gonorrhea	26
Granuloma Inguinale	27
<i>Haemophilus influenzae</i> Infection, Invasive.....	27
Hantavirus Pulmonary Syndrome	28
Hemolytic Uremic Syndrome	28
Hepatitis A	28
Hepatitis B, Acute	29
Hepatitis C, Acute	30
Human Immunodeficiency Virus (HIV) and the Acquired Immunodeficiency Syndrome (AIDS)	31
Influenza	33
Kawasaki Syndrome	34
Lead-Elevated Blood Levels in Children.....	34
Legionellosis	35
Leprosy (Hansen's Disease)	36
Listeriosis.....	36
Lyme Disease.....	36
Lymphogranuloma Venereum	37

Malaria	37
Measles	37
Meningococcal Infection	38
Mumps	39
Ophthalmia Neonatorum.....	39
Outbreak, Foodborne	39
Outbreak, Nosocomial	39
Outbreak, Other	40
Outbreak, Waterborne.....	40
Parasites, Intestinal	45
Pertussis	45
Plague.....	46
Poliomyelitis	46
Psittacosis.....	46
Q Fever.....	46
Rabies.....	46
Rocky Mountain Spotted Fever	48
Rubella	49
Salmonellosis	49
Severe Acute Respiratory Syndrome (SARS)	50
Shigellosis	50
Smallpox	51
Streptococcal Disease, Group A, Invasive.....	51
<i>Streptococcus pneumoniae</i> , Invasive in Children Less Than 5 Years of Age.....	52
Syphilis	52
Tetanus.....	53
Toxic Shock Syndrome, Non-Streptococcal.....	53
Toxic Substance-Related Illnesses.....	54
Trichinosis	54
Tuberculosis.....	54
Tularemia	56
Typhoid Fever	56
Typhus.....	56
Vaccinia, Disease or Adverse Event.....	57
Vancomycin-Resistant <i>Staphylococcus aureus</i>	57
<i>Vibrio</i> Infection.....	57
Viral Hemorrhagic Fever	58
Yellow Fever.....	58
Yersiniosis	58

NUMBER OF REPORTED CASES AND RATE PER 100,000 POPULATION FOR SELECTED DISEASES BY LOCALITY, DISTRICT, AND REGION

AIDS	59
Amebiasis.....	59
Campylobacteriosis.....	59

Chickenpox	63
<i>Chlamydia trachomatis</i> Infection	63
<i>Escherichia coli</i> O157:H7 Infection	63
Giardiasis	67
Gonorrhea	67
<i>Haemophilus influenzae</i> Infection, Invasive.....	67
Hepatitis A	71
Hepatitis B, Acute.....	71
Hepatitis C, Acute.....	71
HIV Infection.....	75
Influenza	75
Kawasaki Syndrome	75
Lead, Elevated Blood Levels in Children	79
Legionellosis	79
Listeriosis.....	79
Lyme Disease.....	83
Malaria	83
Meningococcal Infection	83
Mumps	87
Pertussis	87
Rabies in Animals	87
Rocky Mountain Spotted Fever	91
Salmonellosis	91
Shigellosis	91
Syphilis, Early Stage.....	95
Tuberculosis.....	95

MAPS OF INCIDENCE RATES FOR SELECTED DISEASES BY LOCALITY

Health Planning Regions in Virginia	99
AIDS	100
Amebiasis.....	101
Campylobacteriosis.....	102
Chickenpox	103
<i>Chlamydia trachomatis</i> Infection	104
<i>Escherichia coli</i> O157:H7 Infection	105
Giardiasis	106
Gonorrhea	107
<i>Haemophilus influenzae</i> Infection, Invasive.....	108
Hepatitis A	109
Hepatitis B, Acute.....	110
Hepatitis C, Acute.....	111
HIV Infection.....	112
Influenza	113
Kawasaki Syndrome	114
Lead-Elevated Blood Levels in Children.....	115

Legionellosis	116
Listeriosis	117
Lyme Disease	118
Malaria	119
Meningococcal Infection	120
Mumps	121
Pertussis	122
Rabid Animals	123
Rocky Mountain Spotted Fever	124
Salmonellosis	125
Shigellosis	126
Syphilis, Early Stage	127
Tuberculosis	128

LIST OF FIGURES

1. Amebiasis: Ten Year Trend	18
2. Human Arboviral Infections: Ten Year Trend	19
3. Human Arboviral Infections: Month of Onset	19
4. Campylobacteriosis: Ten Year Trend	20
5. Campylobacteriosis: Rate by Age Group	21
6. Chickenpox: Ten Year Trend	21
7. <i>Chlamydia trachomatis</i> Infections: Ten Year Trend	22
8. <i>Chlamydia trachomatis</i> Infections: Rate by Age Group	22
9. Cryptosporidiosis: Month of Onset	23
10. Ehrlichiosis: Ten Year Trend	24
11. <i>Escherichia coli</i> O157:H7 Infections: Five Year Trend	24
12. <i>Escherichia coli</i> O157:H7 Infections: Month of Onset	25
13. Other Enterohemorrhagic <i>Escherichia coli</i> Infections: Month of Onset	25
14. Giardiasis: Ten Year Trend	26
15. Giardiasis: Rate by Age Group	26
16. Gonorrhea: Ten Year Trend	27
17. Gonorrhea: Rate by Age Group	27
18. <i>Haemophilus influenzae</i> Infections Invasive: Ten Year Trend	28
19. Hepatitis A: Ten Year Trend	29
20. Hepatitis A: Month of Onset	29
21. Hepatitis B, Acute: Ten Year Trend	30
22. Hepatitis B, Acute: Rate by Age Group	30
23. Hepatitis C, Acute: Ten Year Trend	31
24. HIV Infection: Ten Year Trend	31

25.	A Comparison of AIDS Cases and HIV Infections by Sex	32
26.	AIDS: Rate by Age Group	32
27.	AIDS: Mode of Transmission	32
28.	Influenza-like Illness Reported in Two “Flu Seasons”	33
29.	Elevated Blood Lead Levels: Children Age 0 - 14 Years.....	34
30.	Legionellosis: Rate by Age Group.....	35
31.	Legionellosis: Month of Onset	35
32.	Lyme Disease: Rate by Age Group	36
33.	Lyme Disease: Rate by Region.....	37
34.	Meningococcal Infections: Ten Year Trend	38
35.	Meningococcal Serogroups.....	38
36.	Mumps: Ten Year Trend.....	39
37.	Other Intestinal Parasites.....	45
38.	Pertussis: Ten Year Trend	45
39.	Pertussis: Rate by Age Group.....	46
40.	Pertussis: Month of Onset.....	46
41.	Rabies in Animals: Ten Year Trend	47
42.	Percent of Animals Testing Positive for Rabies by Species	47
43.	Rocky Mountain Spotted Fever: Ten Year Trend	48
44.	Rocky Mountain Spotted Fever: Rate by Age Group.....	48
45.	Salmonellosis: Ten Year Trend	49
46.	Salmonellosis: Month of Onset.....	50
47.	Shigellosis: Ten Year Trend	50
48.	Streptococcal Disease, Group A, Invasive: Five Year Trend	51
49.	Early Syphilis: Ten Year Trend	52
50.	Early Syphilis: Rate by Age Group	53
51.	Toxic Shock Syndrome: Ten Year Trend	54
52.	Tuberculosis: Ten Year Trend	55
53.	Tuberculosis: Rate by Age Group	55
54.	Tuberculosis: Rate by Region.....	55
55.	<i>Vibrio</i> Infection: Ten Year Trend	57

LIST OF TABLES

1.	Reportable Diseases in Virginia, 2003	6
2.	Ten Year Trend in Number of Reported Cases of Selected Diseases	7

3.	Number of Reported Cases of Selected Diseases and Rate per 100,000 Population by Age Group.....	9
4.	Number of Reported Cases of Selected Diseases and Rate per 100,000 Population by Race.....	11
5.	Number of Reported Cases of Selected Diseases and Rate per 100,000 Population by Sex.....	13
6.	Number of Reported Cases of Selected Diseases and Rate per 100,000 Population by Region.....	14
7.	Number and Percent of Reported Cases of Selected Diseases by Quarter of Onset	16
8.	Foodborne Outbreaks Confirmed in Virginia.....	41
9.	Nosocomial Outbreaks Confirmed in Virginia.....	42
10.	Other Outbreaks Confirmed in Virginia	44
11.	Number and Percent of <i>Salmonella</i> Infections by Species	49

Introduction

The Virginia Department of Health, Office of Epidemiology is pleased to present its sixteenth annual report of disease surveillance activities. This report summarizes morbidity data reported by the Virginia Department of Health, Office of Epidemiology to the federal Centers for Disease Control and Prevention (CDC) during calendar year 2003.

The Office of Epidemiology, in conjunction with health departments in districts throughout Virginia, is responsible for the ongoing statewide surveillance of diseases according to the provisions of the *Regulations for Disease Reporting and Control*. Disease surveillance involves the collection of pertinent data, the tabulation and evaluation of the data, and the dissemination of the information to all who need to know. These data provide the foundation for public health activities to reduce morbidity.

Diseases must first be diagnosed and reported to the health department before case investigations can occur and disease control activities can begin. Physicians, personnel in medical care facilities, laboratories, and other health care providers are therefore key to the surveillance process. By reporting diseases, health care personnel aid the health department in identifying unusual disease patterns occurring in the community. The health department notifies physicians of these unusual disease patterns, which helps physicians provide a more rapid diagnosis and treatment of individuals who present with compatible symptoms.

This report summarizes those diseases and conditions that are either listed as officially reportable in the *Regulations for Disease Reporting and Control* or that represent other communicable diseases of public health interest that were reported to the Virginia Department of Health. The report is divided into four sections as described below.

Introduction and Data Summary: Tables summarizing 2003 morbidity are included in this introductory section. These tables include the list of reportable diseases; ten year trends; number of reports and incidence rate per 100,000 population for selected diseases by health planning region, age group, race, and sex; and number and percent of reports by quarter of onset.

Descriptive Epidemiology of Reportable Diseases: This section consists of narrative and graphics summarizing the populations reported with each disease or condition. Included is information about the total number of cases reported; the ten year trend in reported cases; the demographics of cases in terms of their age, race and sex; and the distribution of cases by date of onset and health planning region of the state. Mortality, microbial species, and other attributes of diseases also are presented when applicable.

Population-based rates are often presented to provide a measure of disease frequency in the population and to allow for comparisons to be made between different groups. In calculating rates, population estimates for 2003 prepared by the United States Census Bureau for the state's cities and counties and total population were used. Age, race, sex and ethnicity populations were extrapolated for 2003 based on their year 2000 proportions. Some additional notes on coding are listed below.

Race is usually presented as black, white, or other. The “other” race category includes Asian/Pacific Islanders, American Indians, and Alaskan Natives.

Date of onset is used whenever it is available. Onset is the time at which symptoms first occurred. Some cases reported in 2003 experienced onset prior to the year of report. In some situations information is only available on the date of report, the date the information was furnished to the CDC, or the date the report was first received in the Office of Epidemiology, and these dates are used in place of date of onset. Date of specimen collection or date of hospital admission may also be used to estimate date of onset.

To the extent possible, rates are calculated based on residence of the patient. When the address of the patient is neither reported by the health care provider nor ascertained by the health department, then the location of the reporting source, i.e., the physician, hospital, or laboratory, is used.

Number of Cases and Rate by Locality: This section of the report presents the number of cases and incidence rate per 100,000 population for selected diseases by locality, district, and health planning region. Cities and counties that have separate health departments are listed individually. Those that share one health department are combined. Caution is urged in interpreting the data in this section as well as in the following section. Localities with small populations may have large disease rates but only a few reported cases of disease. Both number of cases and incidence rates should be weighed when using these tables to rank morbidity by city or county.

Maps of Incidence Rates: The first map in this section illustrates the location of the various cities and counties in Virginia. This is followed by a map of the health planning regions in Virginia. Following that, disease-specific maps are presented which depict the incidence rates listed in the previous section. For each map, the rates have been divided into four categories using the following process:

Category 1 – Localities reporting zero cases of the disease.

Category 2 – Localities with an incidence rate greater than zero and up to the mean for the state.

Category 3 – Localities with an incidence rate greater than the mean and up to one standard deviation above the mean for the state.

Category 4 – Localities with an incidence rate greater than one standard deviation above the mean for the state.

The Office of Epidemiology hopes that the readers of this report will find it to be a valuable resource for understanding the epidemiology of reportable diseases in Virginia. Any questions or suggestions about this report may be directed to Julie Plagenhoef, Virginia Department of Health, Office of Epidemiology, Post Office Box 2448, 109 Governor Street, 4th Floor, Richmond, Virginia 23218 or by calling 804-864-8141.

Data Summary

Following this section are pages containing tables of statewide summary data for selected diseases. Table 1 is a list of reportable conditions in Virginia in 2003. Table 2 presents the number of cases of selected diseases reported annually during the past ten years. Table 3 delineates the same data by age group, Table 4 by race group, and Table 5 by sex. Table 6 shows number of cases and rate per 100,000 population by region. Table 7 provides the number and percent of cases with onset by quarter of the year. A brief summary of the major findings presented in these tables follows.

TREND – Notable increases (>5%) were observed for the following diseases in 2003 compared to 2002: amebiasis, campylobacteriosis, chickenpox, *Chlamydia trachomatis* infection, cryptosporidiosis, cyclosporiasis, ehrlichiosis, non-O157: H7 enterohemorrhagic *Escherichia coli* infection, giardiasis, invasive *Haemophilus influenzae* infection, legionellosis, listeriosis, Lyme disease, malaria, pertussis, invasive group A streptococcal disease, invasive *Streptococcus pneumoniae* in children less than 5 years old, tuberculosis, tularemia, typhoid fever, and *Vibrio* infection. Notable decreases occurred for the number of cases of AIDS, *Escherichia coli* O157:H7, gonorrhea, hemolytic uremic syndrome, hepatitis A, HIV infection, elevated blood lead levels in children, meningococcal infection, mumps, rabies in animals, Rocky Mountain spotted fever (RMSF), salmonellosis, shigellosis, and early syphilis.

REGION – The northwest health planning region had the highest incidence rates of campylobacteriosis, ehrlichiosis, *Escherichia coli* O157:H7 infection, non-O157: H7 enterohemorrhagic *Escherichia coli* infection, arboviral infection, legionellosis, pertussis, RMSF, and invasive group A streptococcal disease compared to the other regions of the state. That region had the lowest rates of chickenpox, HIV infection, shigellosis, and early syphilis. No cases of infant botulism, hemolytic uremic syndrome, acute hepatitis C, mumps, human rabies, severe acute respiratory syndrome (SARS), or *Vibrio* infection were reported in the northwest region. The only cases of brucellosis and psittacosis and the largest number of rabid animals were reported from this region.

The northern health-planning region experienced the highest incidence rates of AIDS, amebiasis, giardiasis, hepatitis A, Lyme disease, malaria, salmonellosis, tuberculosis, and typhoid fever. The lowest incidence rates of *Chlamydia trachomatis* infection, gonorrhea, invasive *Haemophilus influenzae* infection, acute hepatitis B, elevated blood lead levels in children, meningococcal infection, pertussis, RMSF, and invasive group A streptococcal disease were reported from the northern region. No cases of infant botulism, brucellosis, hemolytic uremic syndrome, mumps, psittacosis, SARS, or invasive *Streptococcus pneumoniae* in children less than 5 years old were reported in this region. The single human rabies case was reported from the northern region.

The southwest health-planning region had the highest incidence rate for cryptosporidiosis, invasive *Haemophilus influenzae* infection, acute hepatitis C, meningococcal infection, and shigellosis. It had the lowest rates for AIDS, non-O157: H7 enterohemorrhagic *Escherichia coli* infection, giardiasis, hepatitis A, Lyme disease, malaria, salmonellosis, and tuberculosis. There were no cases of brucellosis, ehrlichiosis, Kawasaki syndrome, mumps,

psittacosis, human rabies, SARS, toxic shock syndrome, tularemia, or typhoid fever reported in the southwest. This region reported the only cases of infant botulism and hemolytic uremic syndrome.

The central health-planning region experienced the highest rates of hepatitis B, HIV infection, elevated blood levels in children, and tularemia. The lowest rates of arboviral infection, legionellosis, and listeriosis were calculated for this region. No cases of amebiasis, infant botulism, brucellosis, cyclosporiasis, hemolytic uremic syndrome, psittacosis, human rabies, SARS, or toxic shock syndrome were reported from central Virginia. The central region reported the only case of mumps for 2003.

The eastern health-planning region had the highest incidence rates of chickenpox, *Chlamydia trachomatis* infection, gonorrhea, reportable invasive *Streptococcus pneumoniae* infection, and *Vibrio* infection. That region also experienced the lowest rate of campylobacteriosis, *Escherichia coli* O157:H7 infection. No cases of infant botulism, brucellosis, cyclosporiasis, hemolytic uremic syndrome, mumps, psittacosis, human rabies, or tularemia were reported from the eastern region. This region reported the only confirmed case of SARS in Virginia.

AGE – Infants (age <1 year) had the greatest incidence rate for infant botulism, campylobacteriosis, cryptosporidiosis, non-O157: H7 enterohemorrhagic *Escherichia coli* infection, invasive *Haemophilus influenzae* infection, Kawasaki syndrome, listeriosis, meningococcal infection, pertussis, salmonellosis, and reportable invasive *Streptococcus pneumoniae*. The lowest rates of Lyme disease, HIV infection, malaria, RMSF, invasive group A streptococcal disease, typhoid fever, and *Vibrio* infection were reported in infants.

Children aged 1-9 years had the highest incidence rates for *Escherichia coli* O15:H7 infection, giardiasis, elevated blood lead levels in children, shigellosis, and typhoid fever. No cases of AIDS, brucellosis, *Chlamydia trachomatis* infection, ehrlichiosis, acute hepatitis B, acute hepatitis C, legionellosis, listeriosis, mumps, psittacosis, human rabies, SARS, or early syphilis were reported among children in this age group. The single case of hemolytic uremic syndrome was reported in the 1-9 year old age group.

Persons aged 10-19 years did not have the highest rates for any diseases. They had the lowest rates for campylobacteriosis, invasive *Haemophilus influenzae* infection, hepatitis A, elevated blood lead levels in children, hepatitis A, and salmonellosis. There were no cases of brucellosis, cyclosporiasis, hemolytic uremic syndrome, Kawasaki syndrome, legionellosis, listeriosis, mumps, psittacosis, human rabies, SARS, toxic shock syndrome, or tularemia in this age group.

Persons in their twenties were reported with higher rates of *Chlamydia trachomatis* infection, cyclosporiasis, gonorrhea, and acute hepatitis C than persons in other age groups. The human rabies case was also reported from this age group. Persons in their thirties had the highest incidence rates for AIDS, hepatitis B, HIV infection, malaria, and early syphilis. The two cases of brucellosis were reported among the 30-39 year age group. Persons in their forties did not have the highest rate of any disease except psittacosis, the only case of which was reported from

this age group. The fifty years and older age group had the highest rate of arboviral infections, legionellosis, Lyme disease, Rocky Mountain spotted fever, invasive group A streptococcus, tuberculosis, and *Vibrio* infection. The only case of mumps and the case of SARS was also reported from this age group.

RACE – For conditions where race was known for at least 80% of cases, the black population had the highest incidence rates for AIDS, *Chlamydia trachomatis* infection, gonorrhea, HIV infection, legionellosis, invasive group A streptococcal disease, invasive *Streptococcus pneumoniae* in children less than 5 years old, early syphilis, toxic shock syndrome, and tuberculosis. The white population had the highest incidence rates for arboviral infections, campylobacteriosis, cryptosporidiosis, Lyme disease, pertussis, and *Vibrio* infection.

SEX – In general, the incidence rates of reportable diseases tend to be higher in males than females. The following lists some exceptions seen in the 2003 data. Females were reported to have the following diseases more often than males: *Chlamydia trachomatis* infection, *Escherichia coli* O157:H7, gonorrhea, pertussis, salmonellosis, and shigellosis. The incidence rates were very similar or the same for males and females for brucellosis, cyclosporiasis, non-O157: H7 enterohemorrhagic *Escherichia coli* infections, invasive *Haemophilus influenzae*, acute hepatitis C, listeriosis, Lyme disease, meningococcal infection, invasive group A streptococcal disease, invasive *Streptococcus pneumoniae* in children less than 5 years old, toxic shock syndrome, and typhoid fever.

ONSET – A few diseases showed distinct seasonal incidence. Fifty-six percent of typhoid fever, 31% of early syphilis, 41% of invasive *Streptococcus pneumoniae* in children less than 5 years old, 43% of invasive group A streptococcal disease and 39% of listeriosis cases occurred during the first quarter of the year. A large percentage of arboviral infections, campylobacteriosis, cryptosporidiosis, ehrlichiosis, non-O157: H7 enterohemorrhagic *Escherichia coli* infections, legionellosis, Lyme disease, malaria, Rocky Mountain spotted fever, salmonellosis, shigellosis, toxic shock syndrome, and *Vibrio* infection were reported during the second and third quarters of the year. A large portion of cyclosporiasis (67%), pertussis (57%), and tularemia cases (75%) had reported onset dates during the fourth quarter.

Table 1. Reportable Diseases in Virginia, 2003

Acquired immunodeficiency syndrome (AIDS)	Meningococcal infection
Amebiasis	Monkeypox
Anthrax	Mumps
Arboviral infection (e.g., EEE, LAC, SLV, WNV)	Ophthalmia neonatorum
Botulism	Outbreaks, All (including foodborne, nosocomial, occupational, toxic substance-related, water borne, and other outbreaks)
Brucellosis	Pertussis (Whooping cough)
<i>Campylobacter</i> infection	Plague
Chancroid	Poliomyelitis
Chickenpox	Psittacosis
<i>Chlamydia trachomatis</i> infection	Q fever
Cholera	Rabies, human and animal
Creutzfeldt-Jakob disease if <55 years of age	Rabies treatment, post exposure
Cryptosporidiosis	Rocky Mountain spotted fever
Cyclosporiasis	Rubella (German measles), including congenital rubella syndrome
Diphtheria	Salmonellosis
Ehrlichiosis	Severe acute respiratory syndrome (SARS)
<i>Escherichia coli</i> O157:H7 and other enterohemorrhagic <i>E. coli</i> infections	Shigellosis
Giardiasis	Smallpox
Gonorrhea	Streptococcal disease, Group A, invasive
Granuloma inguinale	<i>Streptococcus pneumoniae</i> , invasive if <5 years of age
<i>Haemophilus influenzae</i> infection, invasive	Syphilis
Hantavirus pulmonary syndrome	Tetanus
Hemolytic uremic syndrome (HUS)	Toxic shock syndrome
Hepatitis A	Toxic substance-related illness
Hepatitis B (acute and chronic)	Trichinosis
Hepatitis C (acute and chronic)	Tuberculosis disease (mycobacteria)
Hepatitis, other acute viral	Tuberculosis infection in children <4 years
Human immunodeficiency virus (HIV) infection	Tularemia
Influenza	Typhoid fever
Kawasaki syndrome	Typhus
Lead - elevated blood levels	Unusual occurrence of disease of public health concern
Legionellosis	Vaccinia, disease or adverse event
Leprosy (Hansen disease)	Vancomycin-resistant <i>Staphylococcus aureus</i>
Listeriosis	<i>Vibrio</i> infection
Lyme disease	Viral hemorrhagic fever
Lymphogranuloma venereum	Yellow fever
Malaria	
Measles (Rubeola)	