Reportable Disease Surveillance in Virginia, 2008

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Introduction

The Virginia Department of Health, Office of Epidemiology is pleased to present its twenty-first 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 2008.

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 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 listed as officially reportable in the *Regulations for Disease Reporting and Control*. The report is divided into four sections as described below.

Introduction and Data Summary: Tables summarizing 2008 morbidity are included in this introductory section. These tables include the list of reportable diseases; ten year trends; the number of reports and incidence rate per 100,000 population for selected diseases by age group, race, sex, and health planning region; and the 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. The section includes information about the total number of cases reported; the ten year trend in reported cases; the demographics of cases in terms of 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. Sources of information include the CDC (http://www.cdc.gov/) and *Infectious Disease Epidemiology* (Nelson, K., Williams, C., & Graham, N., 2004).

Population-based rates are often presented to provide a measure of disease frequency in the population and to allow for comparisons between groups. When calculating rates, population estimates for 2007 prepared by the United States Census Bureau for the state's cities and counties and total population were used. 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 2008 experienced onset prior to the year of report. In some situations information is only available on the date of report, or the date the report was first received by the health department, and these dates are used in place of date of onset. Date of specimen collection or date of diagnosis may also be used to estimate date of onset.

To the extent possible, rates by locality 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, the location of the reporting source, such as 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 health planning regions in Virginia, while the second map provides a geographical view of counties and selected cities in the state. Following that, disease-specific maps are presented which depict the incidence rates listed in the previous section. For each disease-specific 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 Lala Wilson at the Virginia Department of Health, Office of Epidemiology, P.O. Box 2448, 109 Governor St., 5th Floor, Richmond, Virginia 23218, or by telephone at 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 2008. Table 2 presents the number of cases of notifiable diseases reported annually during the past ten years. The number of cases of selected diseases reported for 2008 is delineated by age group in Table 3, by race in Table 4, and by sex in Table 5. Table 6 shows the number of cases and rate per 100,000 by health planning 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 – Increases of greater than 5% in the number of cases in 2008 compared to 2007 were observed for the following diseases: AIDS, *Chlamydia trachomatis* infection, ehrlichiosis, Shiga toxin-producing *Escherichia coli* infection, gonorrhea, invasive *Haemophilus influenzae* infection, influenza, legionellosis, listeriosis, ophthalmia neonatorum, pertussis, Rocky Mountain spotted fever, shigellosis, early syphilis and yersiniosis. Decreases of greater than 5% in the number of cases in 2008 compared to 2007 occurred for amebiasis, chickenpox, cryptosporidiosis, giardiasis, hepatitis A, acute hepatitis B, elevated blood lead levels in children, malaria, mumps, rabies in animals, salmonellosis, invasive group A streptococcal disease, toxic substance-related illness, tuberculosis, typhoid fever and *Vibrio* infection.

AGE – Infants (age <1 year) had the highest incidence rates for campylobacteriosis, Shiga toxin-producing *Escherichia coli* infection, invasive *Haemophilus influenzae* infection, listeriosis, meningococcal disease, pertussis, salmonellosis, invasive group A streptococcal disease, invasive *Streptococcus pneumoniae* in children less than 5 years old, and *Vibrio* infection. Comparatively across all age groups, infants showed the lowest rates for AIDS, cryptosporidiosis, ehrlichiosis, giardiasis, hepatitis A, acute hepatitis B, Lyme disease, malaria, and Rocky Mountain spotted fever. No cases of AIDS, amebiasis, arboviral infection, cryptosporidiosis, ehrlichiosis, hemolytic uremic syndrome, hepatitis A, acute hepatitis B, acute hepatitis C, Kawasaki syndrome, legionellosis, Lyme disease, malaria, measles, mumps, Q fever, Rocky Mountain spotted fever, early syphilis, or typhoid fever were reported in infants.

Children aged 1-9 years had the highest incidence rates for arboviral infection, chickenpox, giardiasis, elevated blood lead levels in children, Lyme disease, shigellosis, and typhoid fever. The lowest rates of *Chlamydia trachomatis* infection, gonorrhea, HIV infection, meningococcal disease, invasive methicillin-resistant *Staphylococcus aureus* (MRSA) infection, invasive *Streptococcus pneumoniae* in children less than 5 years old, and tuberculosis were reported for this age group. The only reported cases of hemolytic uremic syndrome, Kawasaki syndrome, and measles occurred in this age group. Among the conditions for which reports were received in 2008, no cases of amebiasis, acute hepatitis C, legionellosis, listeriosis, meningococcal disease, Q fever, or early syphilis were reported among children aged 1-9 years.

Incidence rates in the 10-19 year age group were highest for hepatitis A and mumps. This age group experienced the lowest rates for campylobacteriosis, invasive *Haemophilus influenzae* infection, and elevated blood lead levels in children. No cases of arboviral infection, hemolytic uremic syndrome, acute hepatitis C, Kawasaki syndrome, legionellosis, listeriosis, measles, or Q fever were reported in this age group.

Persons in their twenties had the highest rates of amebiasis, *Chlamydia trachomatis* infection, gonorrhea, acute hepatitis B, HIV infection, and early syphilis infection. The rate for invasive group A

streptococcal disease was lower in this group than in the other age groups. No cases of arboviral infection, hemolytic uremic syndrome, Kawasaki syndrome, legionellosis, listeriosis, or measles were reported in this age group.

Rates for persons in their thirties exceeded the rates in other age groups for AIDS, acute hepatitis C, and malaria. The rate for Shiga toxin-producing *Escherichia coli* infection, was lower in this group than in the other age groups. No cases of arboviral infection, hemolytic uremic syndrome, Kawasaki syndrome, measles, or Q fever were reported in this age group.

Incidence rates for those in their forties did not exceed the rates in other age groups nor were they the lowest for any reportable condition in 2008. No cases of arboviral infection, hemolytic uremic syndrome, Kawasaki syndrome, listeriosis, measles, mumps, Q fever, or typhoid fever were reported in this age group.

Incidence rates for those in their fifties did not exceed the rates in other age groups for any reportable condition in 2008. The lowest rates for chickenpox and salmonellosis occurred in the 50-59 year age group, and no cases of arboviral infection, hemolytic uremic syndrome, Kawasaki syndrome, measles, mumps, Q fever, or typhoid fever were reported in this age group.

The sixty year and older age group had the highest rates of cryptosporidiosis, ehrlichiosis, legionellosis, Rocky Mountain spotted fever, invasive MRSA infection, and tuberculosis and the lowest rates of pertussis and shigellosis. In this age group, no cases of hemolytic uremic syndrome, acute hepatitis C, Kawasaki syndrome, measles, mumps or typhoid fever were reported.

RACE – Among conditions where race was known for at least 80% of cases, the black population had a higher incidence rate for AIDS, gonorrhea, invasive *Haemophilus influenzae* infection, HIV infection, meningococcal disease, invasive *Streptococcus pneumoniae* in children less than 5 years old, and early syphilis. Incidence rates for the white population did not exceed the rates among the race groups for any reportable condition in 2008 where race was known for at least 80% of cases. The "other" race group had the highest rate for tuberculosis. The two cases of Q fever both occurred in the white population, while the two cases of hemolytic uremic syndrome occurred as one each in the black population and the white population.

SEX – In general, the incidence rates of reportable diseases tend to be similar in males and females. Among conditions where the percent difference between reported sexes was at least 50%, incidence rates for *Chlamydia trachomatis* infection and listeriosis were notably higher among females in 2008. In addition, the one reported measles case and two reported Q fever cases occurred in females. Incidence rates were higher among males for AIDS, amebiasis, ehrlichiosis, acute hepatitis B, HIV infection, malaria, mumps, and early syphilis. All three reported cases of Kawasaki syndrome in 2008 occurred in males.

REGION – The northwest health planning region had the highest incidence rates for campylobacteriosis, legionellosis, meningococcal disease, pertussis, rabies in animals, salmonellosis, and invasive group A streptococcal disease compared to the other regions of the state. The lowest incidence rates for chickenpox, acute hepatitis B, HIV infection, and early syphilis were seen in this region. No cases of hemolytic uremic syndrome, Kawasaki syndrome, measles, or typhoid fever were reported from the northwest region.

The northern health planning region experienced the highest incidence rates for amebiasis, Shiga toxin-producing *Escherichia coli* infection, giardiasis, hepatitis A, Lyme disease, malaria, tuberculosis, and typhoid fever. The lowest incidence rates for *Chlamydia trachomatis* infection, gonorrhea, invasive *Haemophilus influenzae* infection, acute hepatitis C, influenza, elevated blood lead levels in children, meningococcal disease, rabies in animals, Rocky Mountain spotted fever, invasive MRSA infection, and invasive *Streptococcus pneumoniae* in children less than 5 years old were reported from the northern region. No cases of hemolytic uremic syndrome, acute hepatitis C, or Kawasaki syndrome were reported from this region. In addition, the one measles case was reported from the northern region.

The southwest health planning region had the highest incidence rates for cryptosporidiosis, ehrlichiosis, acute hepatitis B, listeriosis, and invasive *Streptococcus pneumoniae* in children less than 5 years old. It had the lowest rates for AIDS, amebiasis, giardiasis, malaria, pertussis, shigellosis, tuberculosis, and *Vibrio* infection. There were no cases of amebiasis, malaria, measles, Q fever or *Vibrio* infection reported from the southwest region. The two cases of hemolytic uremic syndrome in 2008 were reported from the southwest region.

The central health planning region experienced the highest rates for AIDS, chickenpox, influenza, elevated blood lead levels in children, Rocky Mountain spotted fever, shigellosis, invasive MRSA infection, and early syphilis. The lowest rates for campylobacteriosis, cryptosporidiosis, Shiga toxin-producing *Escherichia coli* infection, and Lyme disease were seen in this region. No cases of arboviral infection, hemolytic uremic syndrome, Kawasaki syndrome, measles, mumps, or Q fever were reported from the central region.

The eastern health planning region had the highest incidence rates for *Chlamydia trachomatis* infection, gonorrhea, HIV infection, and *Vibrio* infection. This region experienced the lowest rates for ehrlichiosis, hepatitis A, legionellosis, and salmonellosis. No cases of arboviral infection, hemolytic uremic syndrome, measles, mumps, Q fever, or typhoid fever were reported from the eastern region.

ONSET – A few diseases showed distinct seasonal trends. The largest proportion of influenza cases (91%) occurred during the first quarter of the year. The largest proportion of invasive *Haemophilus influenzae* infection (59%), meningococcal disease (66%), and invasive group A streptococcal disease (59%), occurred during the first and second quarters. The second and third quarters accounted for the largest proportion of cases of ehrlichiosis (94%), Shiga toxin-producing *Escherichia coli* infection (75%), Lyme disease (75%), malaria (80%), Rocky Mountain spotted fever (91%), salmonellosis (61%), typhoid fever (90%), and *Vibrio* infection (97%). The largest proportions of hepatitis A (41%) and listeriosis (41%) cases had onset during the third quarter. In addition, the three cases of arboviral infection reported in 2008 all had onset during the third quarter. The largest proportion of pertussis cases (59%) occurred during the third and fourth quarters, while the largest proportion of HIV infections (37%) and shigellosis cases (47%) occurred during the fourth quarter. More than 10% of the AIDS, chickenpox, *Chlamydia trachomatis* infection, acute hepatitis C, HIV infection, mumps, invasive *Streptococcus pneumoniae* in children less than 5 years old, and early syphilis cases reported in 2008 had onset in the prior year. This is a result of delays in obtaining case reports or information needed to confirm a case. Similar delays for cases with late onset in 2008 are likely to have reduced the number of reported cases in the fourth quarter.

Table 1. Reportable Diseases in Virginia, 2008

Acquired immunodeficiency syndrome (AIDS)
Amebiasis
Anthrax
Arboviral infection (e.g., EEE, LAC, SLV, WNV)
Botulism
Brucellosis
Campylobacteriosis
Chancroid
Chickenpox (Varicella)
Chlamydia trachomatis infection
Cholera
Creutzfeldt-Jakob disease if <55 years of age
Cryptosporidiosis
Cyclosporiasis
Diphtheria
Disease caused by an agent that may have been used as a weapon
Ehrlichiosis
Escherichia coli infection, Shiga toxin-producing
Giardiasis
Gonorrhea
Granuloma inguinale
Haemophilus influenzae infection, invasive
Hantavirus pulmonary syndrome
Hemolytic uremic syndrome (HUS)
Hepatitis A
Hepatitis B (acute and chronic)
Hepatitis C (acute and chronic)
Hepatitis, other acute viral
Human immunodeficiency virus (HIV) infection
Influenza
Influenza-associated deaths in children <18 years
Kawasaki syndrome
Lead - elevated blood levels
Legionellosis
Leprosy (Hansen's disease)
Listeriosis
Lyme disease
Lymphogranuloma venereum
Malaria
Measles (Rubeola)
Meningococcal disease
Monkeypox
Mumps
Ophthalmia neonatorum
Outbreaks, all (including foodborne, nosocomial, occupational, toxic substance-related, waterborne, and other outbreaks)
Pertussis
Plague
Poliomyelitis
Psittacosis
Q fever
Rabies, human and animal
Rabies treatment, post exposure
Rocky Mountain spotted fever
Rubella, including congenital rubella syndrome
Salmonellosis
Severe acute respiratory syndrome (SARS)
Shigellosis
Smallpox
Staphylococcus aureus infection (invasive methicillin-resistant and any vancomycin-intermediate or vancomycin-resistant)
Streptococcal disease, Group A, invasive
Streptococcus pneumoniae infection, invasive, in children <5 years of age
Syphilis
Tetanus
Toxic shock syndrome
Toxic substance-related illness
Trichinosis (Trichinellosis)
Tuberculosis, active disease (Mycobacteria)
Tuberculosis infection in children <4 years of age
Tularemia
Typhoid fever
Unusual occurrence of disease of public health concern
Vaccinia, disease or adverse event
Vibrio infection
Viral hemorrhagic fever
Yellow fever
Yersiniosis

Table 2. Ten Year Trend in Number of Reported Cases of Notifiable Diseases in Virginia, 1999-2008

Disease	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	5 year Average
AIDS	912	908	970	866	793	774	626	589	599	638	676.2
Amebiasis	34	24	37	16	20	25	42	45	53	42	37.0
Anthrax	0	0	2	0	0	0	0	0	0	0	0.0
Arboviral infection	0	0	2	32	31	7	5	5	5	3	10.6
Botulism, foodborne	0	0	0	1	0	0	0	0	1	0	0.2
Botulism, infant	3	2	4	3	1	3	1	0	0	3	1.0
Brucellosis	0	1	1	0	2	1	1	0	0	0	0.8
Campylobacteriosis	637	574	583	686	882	668	618	669	665	669	700.4
Chancroid	3	2	0	1	0	0	0	1	0	0	0.2
Chickenpox (Varicella)	1,490	592	563	605	682	1,240	1,834	1,959	1,582	1,489	1,459.4
Chlamydia trachomatis infection	13,427	15,366	18,322	18,518	19,439	21,635	22,668	24,081	24,528	31,205	22,470.2
Cholera	0	0	0	0	0	0	0	0	0	0	0.0
Creutzfeldt-Jakob disease (CJD)^	1	1	1	1	0	0	0	1	1	0	0.4
Cryptosporidiosis	30	21	27	35	56	66	77	71	90	81	72.0
Cyclosporiasis	1	0	1	1	3	1	3	0	2	2	1.8
Diphtheria	0	0	0	0	0	0	0	0	0	0	0.0
Ehrlichiosis	7	1	2	6	12	8	13	8	39	65	16.0
E. coli infection, Shiga toxin-producing	82	83	61	81	63	62	111	168	165	241	113.8
Giardiasis	471	437	417	386	426	563	602	514	582	432	537.4
Gonorrhea	9,315	10,166	11,082	10,462	9,062	8,565	8,346	6,474	6,267	10,336	7,742.8
Granuloma inguinale	0	0	1	0	0	0	0	0	0	0	0.0
Haemophilus influenzae infection, invasive	24	41	34	41	68	56	61	69	80	92	66.8
Hansen's disease (Leprosy)	0	0	1	0	0	0	0	1	1	0	0.4
Hantavirus pulmonary syndrome	0	0	0	0	0	0	0	0	0	0	0.0
Hemolytic uremic syndrome	3	3	1	8	1	1	1	2	1	2	1.2
Hepatitis A	185	164	167	163	141	140	93	64	89	51	105.4
Hepatitis B, acute	106	174	213	224	227	303	146	78	144	130	179.6
Hepatitis C, acute	11	3	3	15	15	15	13	9	8	8	12.0
HIV infection	922	804	977	992	797	875	833	914	836	844	851.0
Influenza	2,558	1,909	1,963	3,486	18,765	3,404	15,942	16,107	8,416	24,580	12,526.8
Kawasaki syndrome	33	29	28	11	11	16	19	6	2	3	10.8
Lead - elevated blood levels in children*	530	727	679	791	643	703	527	515	394	307	556.4
Legionellosis	41	37	39	35	110	56	55	68	61	66	70.0
Listeriosis	17	9	15	10	18	27	17	20	16	17	19.6
Lyme disease	122	149	156	259	202	216	274	357	959	933	401.6
Lymphogranuloma venereum	0	1	0	0	0	1	2	0	0	0	0.6
Malaria	76	55	54	36	60	59	44	55	65	49	56.6
Measles	18	2	1	0	0	0	0	0	0	1	0.0

Table 2. Ten Year Trend in Number of Reported Cases of Notifiable Diseases in Virginia, 1999-2008 (continued)

Disease	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	5 year Average
Meningococcal disease	60	42	46	46	28	24	35	22	23	24	26.4
Monkeypox	-	-	-	-	0	0	0	0	0	0	0.0
Mumps	11	11	8	5	1	11	2	117	27	9	31.6
Ophthalmia neonatorum	3	3	1	16	10	8	18	11	5	10	10.4
Pertussis	65	134	272	168	219	400	363	221	128	198	266.2
Plague	0	0	0	0	0	0	0	0	0	0	0.0
Poliomyelitis	0	0	0	0	0	0	0	0	0	0	0.0
Psittacosis	0	0	0	0	1	0	0	0	0	0	0.2
Q fever	1	0	0	0	0	0	2	4	4	2	2.0
Rabies in animals	581	574	502	592	542	474	495	637	730	620	575.6
Rabies in humans	0	0	0	0	1	0	0	0	0	0	0.2
Rocky Mountain spotted fever	20	7	40	43	34	45	121	114	123	155	87.4
Rubella, including congenital	0	0	1	0	0	0	0	0	0	0	0.0
Salmonellosis	1,286	1,020	1,368	1,277	1,175	1,196	1,172	1,089	1,249	1,165	1,176.2
Severe acute respiratory syndrome (SARS)	-	-	-	-	1	0	0	0	0	0	0.2
Shigellosis	136	460	784	1,061	451	167	134	120	200	310	214.4
Smallpox	0	0	0	0	0	0	0	0	0	0	0.0
Staphylococcus aureus infection, invasive (MRSA)	-	-	-	-	-	-	-	-	253	1,524	50.6
Staphylococcus aureus infection, VISA or VRSA	0	0	0	0	0	0	0	0	1	0	0.2
Streptococcal disease, Group A, invasive	30	57	85	82	111	74	110	132	162	150	117.8
Streptococcus pneumoniae infection, invasive**	-	-	0	20	27	35	37	50	52	52	40.2
Syphilis, early	364	266	235	165	156	224	291	351	407	500	285.8
Tetanus	0	0	0	0	0	1	1	0	0	0	0.4
Toxic shock syndrome	0	0	2	3	3	2	1	0	1	0	1.4
Toxic substance-related illness	345	399	430	493	213	321	324	415	434	356	341.4
Trichinosis (Trichinellosis)	0	0	0	0	0	1	1	0	0	1	0.4
Tuberculosis	334	292	306	315	332	329	355	332	309	292	331.4
Tularemia	2	1	0	1	4	0	0	0	3	1	1.4
Typhoid fever	11	22	15	8	16	11	20	20	21	19	17.6
Vaccinia, disease or adverse event	-	-	-	-	0	0	0	0	0	1	0.0
Vibrio infection	12	12	22	20	26	20	25	32	33	29	27.2
Viral hemorrhagic fever	-	-	-	-	0	0	0	0	0	0	0.0
Yellow fever	0	0	0	0	0	0	0	0	0	0	0.0
Yersiniosis	12	3	3	8	3	10	18	10	10	14	10.2

^ If less than 55 years of age

- Not a reportable disease at this time

* If less than 16 years of age

** If less than 5 years of age

Table 3. Number of Reported Cases of Selected Diseases and Rate per 100,000 by Age Group, Virginia, 2008

Disease	<1 year		1-9 years		10-19 years		20-29 years		30-39 years		40-49 years		50-59 years		60+ years		Unk.
Population	103,682		907,290		1,030,478		1,086,610		1,078,748		1,192,419		1,021,949		1,290,915		
	N	Rate	N	Rate	N	Rate	N	Rate	N	Rate	N	Rate	N	Rate	N	Rate	
AIDS	0	0.0	2	0.2	15	1.5	121	11.1	197	18.3	185	15.5	89	8.7	29	2.2	0
Amebiasis	0	0.0	0	0.0	5	0.5	9	0.8	7	0.6	7	0.6	6	0.6	6	0.5	2
Arboviral infection	0	0.0	2	0.2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.1	0
Campylobacteriosis	15	14.5	79	8.7	52	5.0	76	7.0	104	9.6	102	8.6	93	9.1	116	9.0	32
Chickenpox (Varicella)	48	46.3	745	82.1	558	54.1	58	5.3	47	4.4	10	0.8	5	0.5	13	1.0	5
Chlamydia trachomatis infection	45	43.4	15	1.7	10,657	1,034.2	16,930	1,558.1	2,631	243.9	603	50.6	138	13.5	186	14.4	0
Cryptosporidiosis	0	0.0	14	1.5	6	0.6	11	1.0	11	1.0	11	0.9	7	0.7	21	1.6	0
Ehrlichiosis	0	0.0	3	0.3	1	0.1	4	0.4	2	0.2	12	1.0	13	1.3	30	2.3	0
E. coli infection, Shiga toxin-producing	16	15.4	64	7.1	77	7.5	21	1.9	10	0.9	15	1.3	11	1.1	19	1.5	8
Giardiasis	3	2.9	120	13.2	39	3.8	46	4.2	52	4.8	62	5.2	33	3.2	51	4.0	26
Gonorrhea	10	9.6	7	0.8	2,982	289.4	5,468	503.2	1,177	109.1	468	39.2	141	13.8	83	6.4	0
Haemophilus influenzae infection, inv.	6	5.8	10	1.1	3	0.3	5	0.5	6	0.6	9	0.8	7	0.7	45	3.5	1
Hemolytic uremic syndrome	0	0.0	2	0.2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
Hepatitis A	0	0.0	7	0.8	10	1.0	10	0.9	6	0.6	2	0.2	6	0.6	10	0.8	0
Hepatitis B, acute	0	0.0	1	0.1	3	0.3	35	3.2	32	3.0	35	2.9	14	1.4	10	0.8	0
Hepatitis C, acute	0	0.0	0	0.0	0	0.0	2	0.2	3	0.3	1	0.1	1	0.1	0	0.0	1
HIV infection	4	3.9	6	0.7	70	6.8	261	24.0	213	19.7	191	16.0	82	8.0	17	1.3	0
Kawasaki syndrome	0	0.0	3	0.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
Lead - elevated blood levels in children*	21	20.3	278	30.6	8	1.3	-	-	-	-	-	-	-	-	-	-	0
Legionellosis	0	0.0	0	0.0	0	0.0	0	0.0	3	0.3	15	1.3	18	1.8	30	2.3	0
Listeriosis	4	3.9	0	0.0	0	0.0	0	0.0	1	0.1	0	0.0	2	0.2	8	0.6	2
Lyme disease	0	0.0	161	17.7	110	10.7	79	7.3	106	9.8	161	13.5	161	15.8	152	11.8	3
Malaria	0	0.0	1	0.1	1	0.1	9	0.8	17	1.6	11	0.9	7	0.7	2	0.2	1
Measles	0	0.0	1	0.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
Meningococcal disease	4	3.9	0	0.0	3	0.3	7	0.6	1	0.1	2	0.2	3	0.3	4	0.3	0
Mumps	0	0.0	2	0.2	3	0.3	2	0.2	1	0.1	0	0.0	0	0.0	0	0.0	1
Pertussis	35	33.8	68	7.5	51	4.9	7	0.6	11	1.0	14	1.2	4	0.4	1	0.1	7
Q fever	0	0.0	0	0.0	0	0.0	1	0.1	0	0.0	0	0.0	0	0.0	1	0.1	0
Rocky Mountain spotted fever	0	0.0	10	1.1	15	1.5	14	1.3	16	1.5	30	2.5	30	2.9	40	3.1	0
Salmonellosis	77	74.3	262	28.9	109	10.6	154	14.2	111	10.3	116	9.7	93	9.1	175	13.6	68
Shigellosis	4	3.9	165	18.2	29	2.8	30	2.8	31	2.9	14	1.2	18	1.8	11	0.9	8
Staphylococcus aureus infection, inv. (MRSA)	29	28.0	17	1.9	22	2.1	44	4.0	96	8.9	182	15.3	245	24.0	857	66.4	32
Streptococcal disease, Group A, invasive	7	6.8	15	1.7	6	0.6	3	0.3	8	0.7	18	1.5	23	2.3	55	4.3	15
Streptococcus pneumoniae, invasive**	15	14.5	37	8.9	-	-	-	-	-	-	-	-	-	-	-	-	0
Syphilis, early	0	0.0	0	0.0	42	4.1	202	18.6	107	9.9	97	8.1	39	3.8	13	1.0	0
Tuberculosis	2	1.9	6	0.7	15	1.5	51	4.7	52	4.8	41	3.4	45	4.4	80	6.2	0
Typhoid fever	0	0.0	9	1.0	2	0.2	3	0.3	3	0.3	0	0.0	0	0.0	0	0.0	2
Vibrio infection	1	1.0	2	0.2	4	0.4	4	0.4	3	0.3	2	0.2	5	0.5	8	0.6	0

- Not reportable at this age

* Rates based on 0-15 year old population

** Rates based on 0-4 year old population

Table 4. Number of Reported Cases of Selected Diseases and Rate per 100,000 by Race, Virginia, 2008

Disease	Total	Black		White		Other		Unk.
Population	7,712,091	1,537,603		5,642,342		532,146		
		N	Rate	N	Rate	N	Rate	N
AIDS	638	384	25.0	167	3.0	87	16.3	0
Amebiasis	42	2	0.1	4	0.1	2	0.4	34
Arboviral infection	3	0	0.0	1	0.0	0	0.0	2
Campylobacteriosis	669	31	2.0	355	6.3	3	0.6	280
Chickenpox (Varicella)	1,489	144	9.4	898	15.9	124	23.3	323
Chlamydia trachomatis infection	31,205	16,084	1046.0	6,054	107.3	1,855	348.6	7,212
Cryptosporidiosis	81	13	0.8	39	0.7	1	0.2	28
Ehrlichiosis	65	1	0.1	30	0.5	1	0.2	33
E. coli infection, Shiga toxin-producing	241	18	1.2	103	1.8	3	0.6	117
Giardiasis	432	44	2.9	118	2.1	28	5.3	242
Gonorrhea	10,336	7,435	483.5	1,171	20.8	266	50.0	1,464
Haemophilus influenzae infection, inv.	92	19	1.2	56	1.0	6	1.1	11
Hemolytic uremic syndrome	2	1	0.1	1	0.0	0	0.0	0
Hepatitis A	51	5	0.3	16	0.3	9	1.7	21
Hepatitis B, acute	130	33	2.1	50	0.9	1	0.2	46
Hepatitis C, acute	8	1	0.1	4	0.1	0	0.0	3
HIV infection	844	561	36.5	199	3.5	84	15.8	0
Kawasaki syndrome	3	2	0.1	0	0.0	0	0.0	1
Lead - elevated blood levels in children*	307	93	25.2	40	3.6	11	7.9	163
Legionellosis	66	12	0.8	41	0.7	0	0.0	13
Listeriosis	17	3	0.2	8	0.1	0	0.0	6
Lyme disease	933	10	0.7	506	9.0	20	3.8	397
Malaria	49	20	1.3	8	0.1	7	1.3	14
Measles	1	0	0.0	0	0.0	1	0.2	0
Meningococcal disease	24	6	0.4	14	0.2	0	0.0	4
Mumps	9	0	0.0	7	0.1	1	0.2	1
Pertussis	198	11	0.7	125	2.2	1	0.2	61
Q fever	2	0	0.0	2	0.0	0	0.0	0
Rocky Mountain spotted fever	155	9	0.6	78	1.4	1	0.2	67
Salmonellosis	1,165	107	7.0	504	8.9	33	6.2	521
Shigellosis	310	121	7.9	69	1.2	5	0.9	115
Staphylococcus aureus infection, inv. (MRSA)	1,524	422	27.4	747	13.2	13	2.4	342
Streptococcal disease, Group A, invasive	150	19	1.2	85	1.5	2	0.4	44
Streptococcus pneumoniae, invasive**	52	15	12.7	25	7.1	3	5.9	9
Syphilis, early	500	336	21.9	126	2.2	33	6.2	5
Tuberculosis	292	75	4.9	103	1.8	114	21.4	0
Typhoid fever	19	2	0.1	1	0.0	6	1.1	10
Vibrio infection	29	3	0.2	13	0.2	0	0.0	13

* Rates based on 0-15 year old population

** Rates based on 0-4 year old population

Table 5. Number of Reported Cases of Selected Diseases and Rate per 100,000 by Sex, Virginia, 2008

Disease	Total	Female		Male		Unk.
Population	7,712,091	3,927,052		3,785,039		
		N	Rate	N	Rate	N
AIDS	638	172	4.4	466	12.3	0
Amebiasis	42	10	0.3	32	0.8	0
Arboviral infection	3	1	0.0	2	0.1	0
Campylobacteriosis	669	300	7.6	360	9.5	9
Chickenpox (Varicella)	1,489	705	18.0	762	20.1	22
Chlamydia trachomatis infection	31,205	23,164	589.9	7,981	210.9	60
Cryptosporidiosis	81	45	1.1	35	0.9	1
Ehrlichiosis	65	20	0.5	44	1.2	1
E. coli infection, Shiga toxin-producing	241	112	2.9	126	3.3	3
Giardiasis	432	179	4.6	250	6.6	3
Gonorrhea	10,336	5,847	148.9	4,476	118.3	13
Haemophilus influenzae infection, invasive	92	51	1.3	40	1.1	1
Hemolytic uremic syndrome	2	1	0.0	1	0.0	0
Hepatitis A	51	28	0.7	22	0.6	1
Hepatitis B, acute	130	37	0.9	92	2.4	1
Hepatitis C, acute	8	4	0.1	3	0.1	1
HIV infection	844	243	6.2	601	15.9	0
Kawasaki syndrome	3	0	0.0	3	0.1	0
Lead - elevated blood levels in children*	307	147	18.6	160	19.4	0
Legionellosis	66	25	0.6	41	1.1	0
Listeriosis	17	11	0.3	5	0.1	1
Lyme disease	933	469	11.9	455	12.0	9
Malaria	49	15	0.4	33	0.9	1
Measles	1	1	0.0	0	0.0	0
Meningococcal disease	24	13	0.3	11	0.3	0
Mumps	9	3	0.1	6	0.2	0
Pertussis	198	113	2.9	83	2.2	2
Q fever	2	2	0.1	0	0.0	0
Rocky Mountain spotted fever	155	72	1.8	79	2.1	4
Salmonellosis	1,165	621	15.8	529	14.0	15
Shigellosis	310	170	4.3	133	3.5	7
Staphylococcus aureus infection, invasive (MRSA)	1,524	642	16.3	862	22.8	20
Streptococcal disease, Group A, invasive	150	80	2.0	70	1.8	0
Streptococcus pneumoniae, invasive**	52	22	8.7	29	11.0	1
Syphilis, early	500	57	1.5	443	11.7	0
Tuberculosis	292	123	3.1	169	4.5	0
Typhoid fever	19	9	0.2	9	0.2	1
Vibrio infection	29	10	0.3	19	0.5	0

* Rates based on 0-15 year old population

** Rates based on 0-4 year old population

Table 6. Number of Reported Cases of Selected Diseases and Rate per 100,000 by Health Planning Region, Virginia, 2008

Disease	Total	Northwest Region		Northern Region		Southwest Region		Central Region		Eastern Region	
Population	7,712,091	1,192,315		2,075,176		1,323,899		1,319,628		1,801,073	
		N	Rate	N	Rate	N	Rate	N	Rate	N	Rate
AIDS	638	63	5.3	186	9.0	47	3.6	196	14.9	146	8.1
Amebiasis	42	4	0.3	33	1.6	0	0.0	3	0.2	2	0.1
Arboviral infection	3	1	0.1	1	0.0	1	0.1	0	0.0	0	0.0
Campylobacteriosis	669	151	12.7	197	9.5	114	8.6	76	5.8	131	7.3
Chickenpox (Varicella)	1,489	204	17.1	403	19.4	257	19.4	287	21.7	338	18.8
Chlamydia trachomatis infection	31,205	3,201	268.5	4,308	207.6	3,715	280.6	7,332	555.6	12,649	702.3
Cryptosporidiosis	81	15	1.3	16	0.8	25	1.9	6	0.5	19	1.1
Ehrlichiosis	65	16	1.3	12	0.6	19	1.4	11	0.8	7	0.4
E. coli infection, Shiga toxin-producing	241	58	4.9	108	5.2	24	1.8	21	1.6	30	1.7
Giardiasis	432	81	6.8	161	7.8	46	3.5	61	4.6	83	4.6
Gonorrhea	10,336	594	49.8	722	34.8	1,007	76.1	2,865	217.1	5,148	285.8
Haemophilus influenzae infection, inv.	92	20	1.7	15	0.7	18	1.4	22	1.7	17	0.9
Hemolytic uremic syndrome	2	0	0.0	0	0.0	2	0.2	0	0.0	0	0.0
Hepatitis A	51	4	0.3	31	1.5	8	0.6	4	0.3	4	0.2
Hepatitis B, acute	130	6	0.5	15	0.7	46	3.5	38	2.9	25	1.4
Hepatitis C, acute	8	1	0.1	0	0.0	3	0.2	3	0.2	1	0.1
HIV infection	844	42	3.5	202	9.7	60	4.5	225	17.1	315	17.5
Influenza	24,580	2,783	233.4	3,886	187.3	4,649	351.2	9,775	740.7	3,487	193.6
Kawasaki syndrome	3	0	0.0	0	0.0	1	0.1	0	0.0	2	0.1
Lead - elevated blood levels in children*	307	36	14.6	39	8.4	49	20.5	111	41.0	72	18.2
Legionellosis	66	15	1.3	15	0.7	15	1.1	14	1.1	7	0.4
Listeriosis	17	1	0.1	6	0.3	5	0.4	3	0.2	2	0.1
Lyme disease	933	264	22.1	536	25.8	43	3.2	29	2.2	61	3.4
Malaria	49	5	0.4	30	1.4	0	0.0	9	0.7	5	0.3
Measles	1	0	0.0	1	0.0	0	0.0	0	0.0	0	0.0
Meningococcal disease	24	7	0.6	2	0.1	5	0.4	6	0.5	4	0.2
Mumps	9	2	0.2	5	0.2	2	0.2	0	0.0	0	0.0
Pertussis	198	41	3.4	59	2.8	14	1.1	33	2.5	51	2.8
Q fever	2	1	0.1	1	0.0	0	0.0	0	0.0	0	0.0
Rabies in animals	620	156	13.1	103	5.0	117	8.8	116	8.8	128	7.1
Rocky Mountain spotted fever	155	23	1.9	22	1.1	33	2.5	42	3.2	35	1.9
Salmonellosis	1,165	225	18.9	335	16.1	176	13.3	197	14.9	232	12.9
Shigellosis	310	52	4.4	45	2.2	6	0.5	126	9.5	81	4.5
Staphylococcus aureus infection, invasive (MRSA)	1,524	183	15.3	191	9.2	361	27.3	431	32.7	358	19.9

Table 6. Number of Reported Cases of Selected Diseases and Rate per 100,000 by Health Planning Region, Virginia, 2008 (continued)

Disease	Total	Northwest Region		Northern Region		Southwest Region		Central Region		Eastern Region	
Population	7,712,091	1,192,315		2,075,176		1,323,899		1,319,628		1,801,073	
		N	Rate	N	Rate	N	Rate	N	Rate	N	Rate
Streptococcal disease, Group A, invasive	150	40	3.4	29	1.4	30	2.3	26	2.0	25	1.4
Streptococcus pneumoniae, invasive**	52	8	10.3	12	7.6	13	18.2	8	9.4	11	8.7
Syphilis, early	500	16	1.3	102	4.9	31	2.3	176	13.3	175	9.7
Tuberculosis	292	20	1.7	169	8.1	16	1.2	39	3.0	48	2.7
Typhoid fever	19	0	0.0	15	0.7	1	0.1	3	0.2	0	0.0
Vibrio infection	29	2	0.2	8	0.4	0	0.0	5	0.4	14	0.8

* Rates based on 0-15 year old population

** Rates based on 0-4 year old population

Table 7. Number of Reported Cases of Selected Diseases by Quarter of Onset, Virginia, 2008

Disease	Total	Prior to 2008		1st Quarter		2nd Quarter		3rd Quarter		4th Quarter	
		N	%	N	%	N	%	N	%	N	%
AIDS	638	274	42.9	116	18.2	117	18.3	101	15.8	30	4.7
Amebiasis	42	2	4.8	14	33.3	14	33.3	8	19.0	4	9.5
Arboviral infection	3	0	0.0	0	0.0	0	0.0	3	100.0	0	0.0
Campylobacteriosis	669	16	2.4	114	17.0	196	29.3	235	35.1	108	16.1
Chickenpox (Varicella)	1,489	274	18.4	411	27.6	316	21.2	241	16.2	247	16.6
Chlamydia trachomatis infection	31,205	3,360	10.8	4,118	13.2	7,730	24.8	8,535	27.4	7,462	23.9
Cryptosporidiosis	81	5	6.2	11	13.6	22	27.2	32	39.5	11	13.6
Ehrlichiosis	65	1	1.5	2	3.1	29	44.6	32	49.2	1	1.5
E. coli infection, Shiga toxin-producing	241	7	2.9	26	10.8	57	23.7	124	51.5	27	11.2
Giardiasis	432	13	3.0	77	17.8	109	25.2	139	32.2	94	21.8
Gonorrhea	10,336	937	9.1	2,616	25.3	2,508	24.3	2,585	25.0	1,690	16.4
Haemophilus influenzae infection, invasive	92	8	8.7	25	27.2	29	31.5	11	12.0	19	20.7
Hemolytic uremic syndrome	2	0	0.0	0	0.0	2	100.0	0	0.0	0	0.0
Hepatitis A	51	2	3.9	10	19.6	9	17.6	21	41.2	9	17.6
Hepatitis B, acute	130	9	6.9	26	20.0	27	20.8	31	23.8	37	28.5
Hepatitis C, acute	8	1	12.5	0	0.0	4	50.0	2	25.0	1	12.5
HIV infection	844	273	32.3	58	6.9	122	14.5	77	9.1	314	37.2
Influenza	24,580	0	0.0	22,339	90.9	1,964	8.0	34	0.1	243	1.0
Kawasaki syndrome	3	0	0.0	1	33.3	1	33.3	0	0.0	1	33.3
Legionellosis	66	2	3.0	10	15.2	18	27.3	18	27.3	18	27.3
Listeriosis	17	0	0.0	5	29.4	4	23.5	7	41.2	1	5.9
Lyme disease	933	49	5.3	65	7.0	380	40.7	319	34.2	120	12.9
Malaria	49	1	2.0	3	6.1	19	38.8	20	40.8	6	12.2
Measles	1	0	0.0	1	100.0	0	0.0	0	0.0	0	0.0
Meningococcal disease	24	0	0.0	11	45.8	5	20.8	3	12.5	5	20.8
Mumps	9	3	33.3	2	22.2	1	11.1	2	22.2	1	11.1
Pertussis	198	12	6.1	30	15.2	39	19.7	61	30.8	56	28.3
Q fever	2	0	0.0	1	50.0	0	0.0	1	50.0	0	0.0
Rocky Mountain spotted fever	155	1	0.6	4	2.6	69	44.5	72	46.5	9	5.8
Salmonellosis	1,165	25	2.1	163	14.0	296	25.4	417	35.8	264	22.7
Shigellosis	310	2	0.6	36	11.6	57	18.4	68	21.9	147	47.4
Staphylococcus aureus infection, invasive (MRSA)	1,524	30	2.0	386	25.3	369	24.2	441	28.9	298	19.6
Streptococcal disease, Group A, invasive	150	4	2.7	56	37.3	32	21.3	28	18.7	30	20.0
Streptococcus pneumoniae, invasive	52	10	19.2	11	21.2	14	26.9	5	9.6	12	23.1
Syphilis, early	500	65	13.0	150	30.0	120	24.0	111	22.2	54	10.8
Typhoid fever	19	0	0.0	2	10.5	6	31.6	11	57.9	0	0.0
Vibrio infection	29	0	0.0	0	0.0	11	37.9	17	58.6	1	3.4

DESCRIPTIVE EPIDEMIOLOGY

OF

REPORTABLE DISEASES

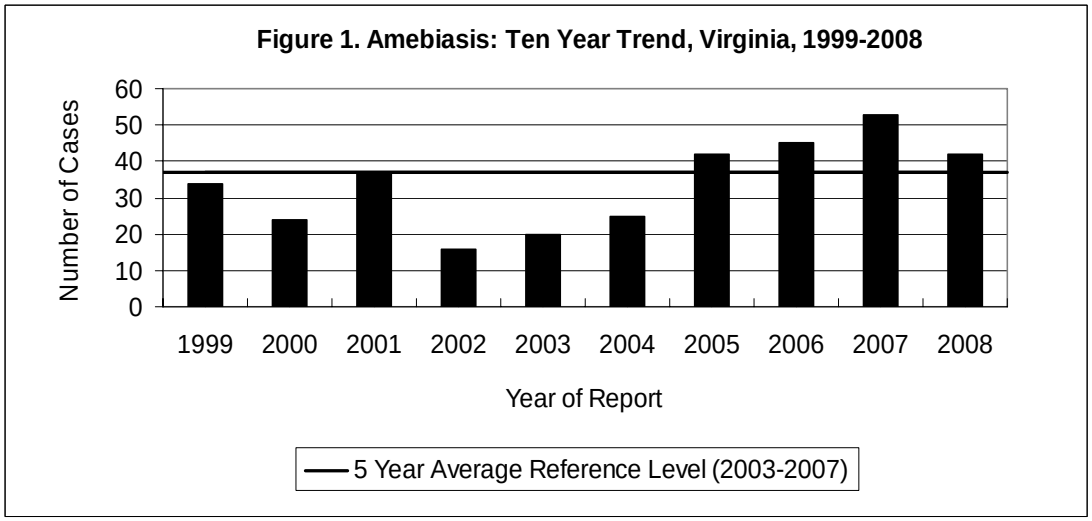
Acquired Immunodeficiency Syndrome (AIDS)

See Human Immunodeficiency Virus (HIV)

Amebiasis

Agent: *Entameoba histolytica* (parasite)
Mode of Transmission: Ingestion of food or water contaminated with amebic cysts or by direct contact with fecal material from infected animals or people.
Signs/Symptoms: Most infections are asymptomatic. Symptomatic infections include diarrhea, which may become severe, bloody or contain mucus; lower abdominal pain; straining to pass stool or urine; weight loss; fever; chills; and constipation. Symptoms may become chronic.
Prevention: Careful hand hygiene after each toilet visit and before preparing and eating food.
Other Important Information: Invasive amebiasis is mostly a disease of young adults and is rare in children under five years of age.

The 42 cases of amebiasis reported in Virginia during 2008 represent a 21% decrease from the 53 cases reported in 2007, and a 13% increase from the five year average of 37 cases per year. This is the first annual decrease in reported cases since 2002 (Figure 1).



The 20-29 year age group had the highest incidence rate (0.8 per 100,000), followed closely by the 30-39, 40-49 and 50-59 year age groups (0.6 per 100,000 each). No cases occurred in infants and the 1-9 year age groups. Because information on race was missing for 81% of reported cases, no statement can be made about the impact by race. The incidence rate for males (0.8 per 100,000) was more than twice the rate for females (0.3 per 100,000). The largest proportion of cases (79%) and highest incidence (1.6 per 100,000) were seen in the northern region. No cases were reported from the southwest region. The other regions had incidence rates of 0.1 to 0.3 per 100,000. While cases occurred throughout the year, 67% were reported during the first and second quarters.

Anthrax

Agent: *Bacillus anthracis* (spore-forming bacteria)
Mode of Transmission: Through direct contact with contaminated animal products; ingestion of contaminated, undercooked meat; and inhalation of spores during risky industrial practices (e.g., processing wool or hides) or through an intentional bioterrorism release.
Signs/Symptoms: There are three recognized forms of anthrax. The form that develops is dependent on the route of exposure. Cutaneous anthrax presents as a skin lesion that often develops a black scab. Symptoms of abdominal distress (e.g., nausea, vomiting, diarrhea, fever) are present in intestinal anthrax. Symptoms of inhalation anthrax are initially nonspecific, (e.g., fever, cough, chest pain) but will lead to respiratory distress and death if untreated.
Prevention: Minimize contact with infected animals and animal products. A vaccine is available to immunize high-risk individuals.
Other Important Information: Person-to-person transmission is very rare. The incubation period, or time from exposure to onset of symptoms, ranges from 1 to 60 days. Anthrax is classified as a potential bioweapon because it can cause serious public health problems, be spread across a large area, and require extensive planning to protect the public's health.

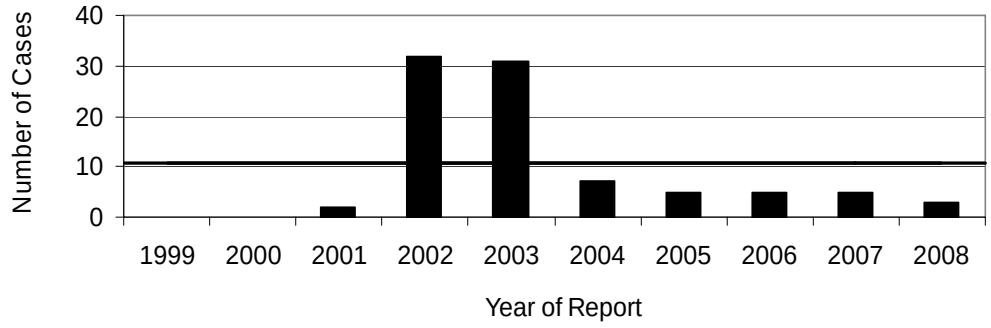
No cases of anthrax were reported in Virginia during 2008. In 2001, two Virginia residents were reported with inhalation anthrax from an intentional release of *Bacillus anthracis* spores through the U.S. Postal Service. Both individuals were exposed at their workplace and both survived. These were the first reported cases of anthrax in Virginia since 1970.

Arboviral Infection

Agent(s): In Virginia, the most common endemic mosquito-borne agents of arboviral infection are West Nile virus (WNV), LaCrosse encephalitis (LAC) virus, St. Louis encephalitis (SLE) virus and Eastern equine encephalitis (EEE) virus.
Mode of Transmission: Most commonly transmitted by the bite of an infected mosquito. WNV may also be transmitted by blood transfusion or transplanted organs from infected donors, by cuts or punctures with contaminated scalpels or needles and, more rarely, by inhalation or ingestion of dust or particles from infected bird feces.
Signs/Symptoms: Severity of symptoms differs depending on the particular virus, and characteristics of the infected person. Many infections are asymptomatic. Mild cases may appear as fever with headache, or as aseptic meningitis. More severe disease can cause encephalitis (inflammation of the brain) or meningitis (inflammation of the lining of the brain and spinal cord) and may lead to permanent neurological sequelae or death.
Prevention: Avoid being bitten by mosquitoes. Avoid areas infested by mosquitoes and when in those areas, use mosquito repellents and wear long-sleeved, loose fitting, light-colored clothing because mosquitoes are not attracted to light colors. Maintain screens on all open windows and doors. Around your home, eliminate or dump all containers that could hold water and breed mosquitoes including buckets, birdbaths and discarded tires.

Other Important Information: WNV and SLE infections are more likely to cause severe disease in persons over the age of 50, but the majority of infections result in no symptoms. LAC is seen primarily in individuals less than 16 years of age. EEE has a high fatality rate and is more likely to affect children under the age of 15 and adults over the age of 50.

Figure 2. Human Arboviral Infection: Ten Year Trend, Virginia, 1999-2008

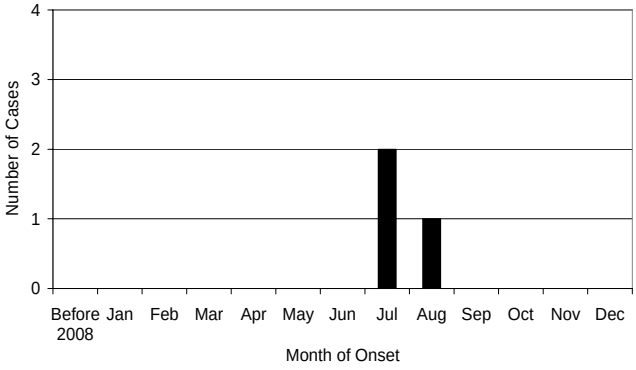


Human

Three cases of human arboviral infection were reported in 2008. This is slightly lower than the five cases reported in the previous three years, and is 90% less than the 31 cases reported in 2003 (Figure 2). The elevated levels of arboviral activity in 2002 and 2003 were largely attributable to the emergence of WNV in Virginia and the increased testing for human arboviral infections spurred by elevated concern. Since that time, WNV has been the most common cause of arboviral infections in Virginia. In 2008, only one WNV infection and two LAC infections in humans were reported in Virginia. The WNV case occurred in a resident of northern Virginia, the area of the state where most of Virginia's WNV infections have been identified since 2002. The individuals with LAC lived in western sections of the state including a new LAC-endemic area identified in 2003, which encompasses the upper Shenandoah Valley.

The WNV infection occurred in a male in the 60 year and older age group. Onset occurred in August (Figure 3). WNV infections typically increase during mid to late summer months or early fall when the mosquito population has its highest level of infection.

Figure 3. Human Arboviral Infection: Month of Onset, Virginia, 2008



The two cases of LAC reported in 2008 occurred in a boy and a girl in the 1-9 year age group. Both cases occurred in July. The last reported LAC cases occurred in 2005 when there were four human cases. It is unknown why LAC activity declined in 2006 and 2007.

Animal

Zoonotic surveillance for WNV and EEE is conducted each year using mosquitoes, sentinel chickens and horses. During 2008, over 364,363 mosquitoes were tested for WNV. As usual, mosquitoes were tested as "pools" (batches of up to 50 mosquitoes), and of the 11,216 pools tested for WNV, 686 pools (6.1%) were positive (i.e., contained at least one WNV positive mosquito). In 2008, levels of WNV activity were lower in the tested mosquito pools monitored by mosquito surveillance programs in northern Virginia localities than in any year since 2005.

Of the 132,034 mosquitoes (3,385 pools) tested for EEE, only 10 pools (0.3%) were positive. There is no mosquito testing program for LAC or SLE.

In 2008, no horses were found to have WNV infection, but one horse died from EEE in Virginia Beach. Two sentinel chickens in one Hampton flock tested positive for exposure to WNV, and five sentinel chickens in five different flocks in Chesapeake, Norfolk and Virginia Beach were positive for exposure to EEE.

Botulism

Agent: Neurotoxin produced by the spore-forming organism *Clostridium botulinum* (bacteria)
Mode of Transmission: Foodborne botulism occurs when *Clostridium botulinum* is allowed to grow and produce toxin in food which is then eaten without sufficient heating to inactivate the toxin. In intestinal (infant) botulism, ingested spores germinate, multiply and produce toxin in the intestine.
Signs/Symptoms: Foodborne symptoms include fatigue, weakness, vertigo, and sometimes diarrhea and vomiting. Descending, flaccid paralysis can also occur, which may lead to cessation of breathing and death unless respiration is aided. Patients with intestinal botulism show weakness, loss of appetite, an altered cry and loss of head control.
Prevention: All canned and preserved food should be properly processed and prepared. Boiling food for 10 minutes will destroy the toxin, but much higher temperatures are required to kill the spores. Honey and corn syrup should not be given to children younger than 12 months of age.
Other Important Information: The case-fatality rate is 5%-10%. Botulism is listed by the CDC as a potential bioweapon because an aerosolized or foodborne botulinum-toxin weapon could cause severe disease and would require swift public health action to control.

Foodborne

No cases of foodborne botulism were reported in Virginia during 2008. The only case in the preceding 5 years in Virginia occurred in 2007 in an adult female from the southwest region. The 5 year average is 0.2 cases per year.

Intestinal (Infant)

Three cases of intestinal botulism were reported in Virginia during 2008. This is noticeably higher than the zero cases reported in 2006 and 2007, and three times the five year average of 1.0 cases per year. Among the cases reported in 2008, two were male and one was female. Two cases were reported from the northern region, and one from the southwest region. One case was linked to ingestion of corn syrup.

Brucellosis

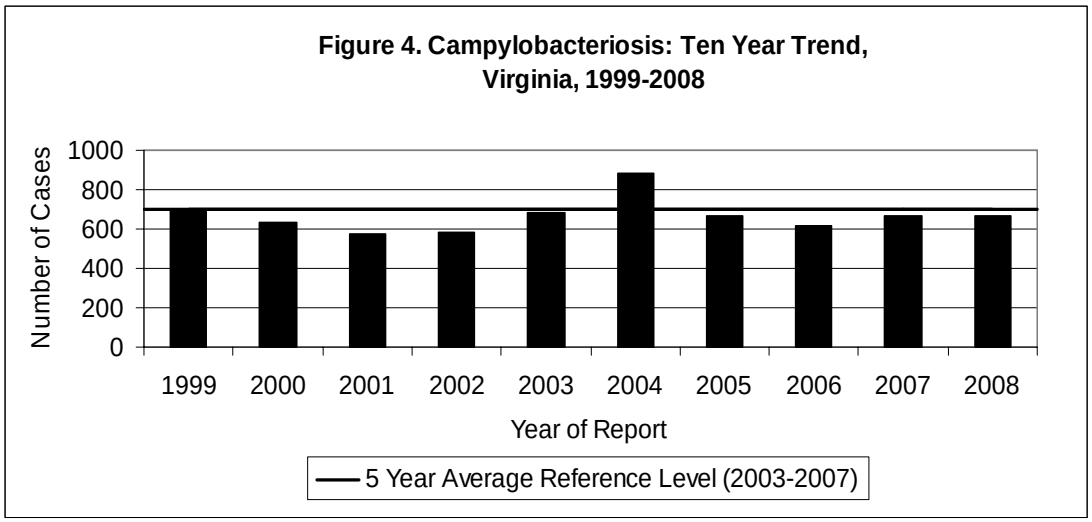
Agent: *Brucella* species (bacteria)
Mode of Transmission: Contamination of skin wounds with infected animal tissue or body fluids, ingestion of unpasteurized milk or milk products, and inhalation of the organism.
Signs/Symptoms: Intermittent or irregular fever, headache, chills, sweating, and muscle pain.
Prevention: Use rubber gloves when handling animal tissue. Do not consume unpasteurized dairy products, especially milk, cheese, or ice cream.
Other Important Information: Primarily an occupational disease of those working with infected animals, especially farm workers, veterinarians, and abattoir workers. Listed by the CDC as a potential bioterrorism agent because the organism may be relatively easily disseminated, may cause moderate injury or death, and may need enhanced surveillance for detection.

No cases of brucellosis were reported in Virginia in 2008. The last case of brucellosis was reported in 2005. The illness occurred in a male in the 50-59 year age group from the northern region. He had recently traveled to Mexico where he reported drinking raw goat's milk.

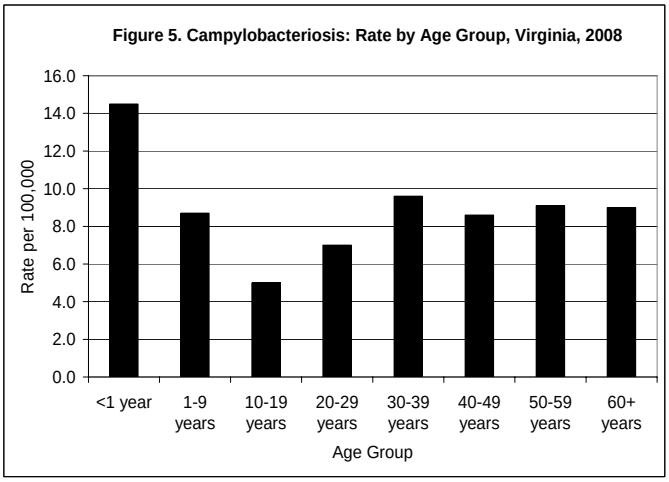
Campylobacteriosis

Agent: *Campylobacter* species (bacteria)
Mode of Transmission: Ingestion of undercooked meat, particularly poultry; contaminated food or water; raw milk; or direct contact with fecal material from infected animals or people.
Signs/Symptoms: Include diarrhea (frequently with bloody stools), abdominal pain, malaise, fever, nausea or vomiting. In neonates and young infants, bloody diarrhea without fever may be the only manifestation of illness. Many infections are asymptomatic. Rarely, post-infectious complications include reactive arthritis, febrile convulsions or Guillain-Barré Syndrome.
Prevention: Careful hand hygiene after each toilet visit, before preparing and eating food and after contact with feces of dogs and cats is critical. Pasteurization of milk and chlorination of water supplies are important. Thoroughly cook all foods containing eggs and meats, particularly poultry.

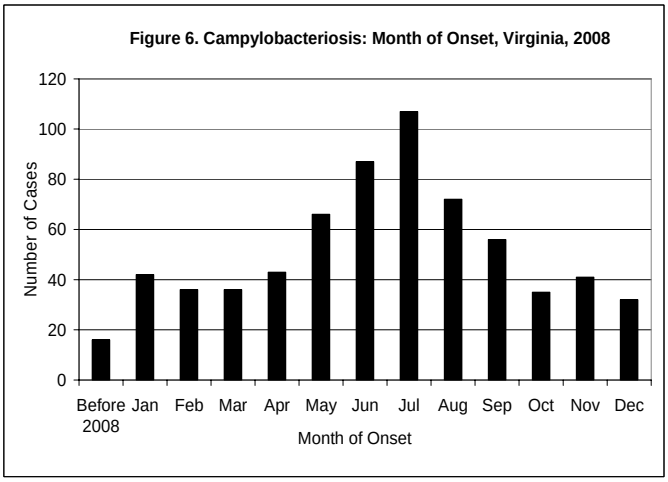
During 2008, 669 cases of campylobacteriosis were reported in Virginia. This is a 4% decrease from the five year average of 700.4 cases per year, and an incremental (<1%) increase from the 665 cases reported in 2007 (Figure 4).



In 2008, the highest incidence occurred in the less than one year age group (14.5 per 100,000). Rates in the other age groups ranged between 5.0 and 9.6 per 100,000 (Figure 5). Race was missing for 42% of reported campylobacteriosis cases. Among cases for which race was reported, the incidence rate in the white population (6.3 per 100,000) was more than three times that in the black population (2.0 per 100,000), and more than ten times that in the "other" population (0.6 per 100,000).



The rate among males (9.5 per 100,000) was slightly higher than the rate among females (7.6 per 100,000). By region, the highest rates of disease occurred in the northwest and northern regions (12.7 and 9.5 per 100,000 respectively). Rates among the other regions were between 5.8 and 8.6 per 100,000. Cases occurred throughout the year, but the majority had onsets from May through September (Figure 6). This seasonality may be attributable to improper cooking and storage of poultry products at outdoor cooking events during the warmer months.



One campylobacteriosis outbreak was reported during 2008. The outbreak occurred among five workers in a poultry plant and was related to exposure during the handling and processing of poultry products.

Chancroid

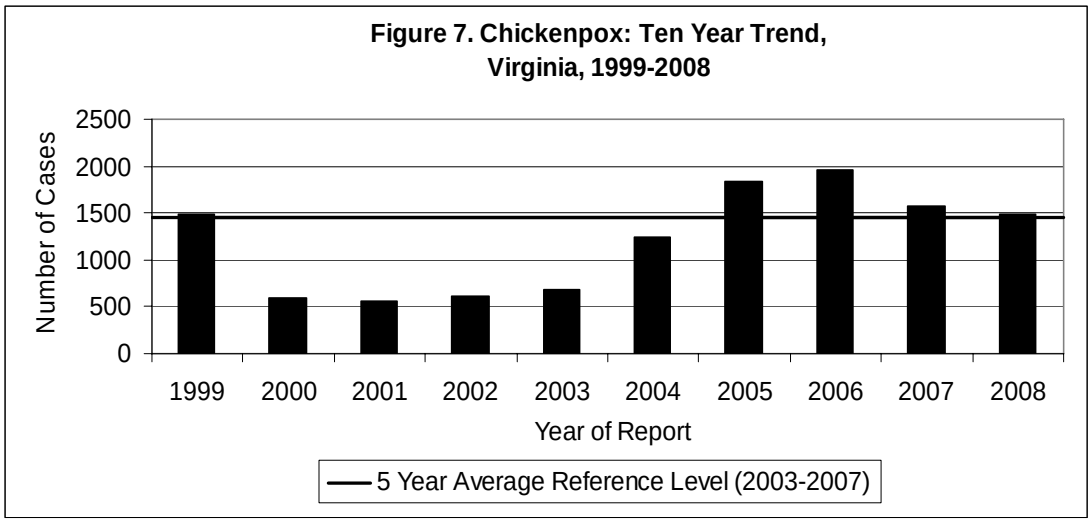
Agent: *Haemophilis ducreyi* (bacteria)
Mode of Transmission: Sexual transmission through skin-to-skin contact with open sores; transmission not related to sexual contact is rare. Auto-inoculation to non-genital sites from open sores is also possible.
Signs/Symptoms: Appearance of one or more sores or raised bumps on the genital organs. Sores are surrounded by a narrow red border and become filled with purulent secretion, and eventually rupture leaving a painful open lesion. The sore is soft to the touch, which is why the term soft chancre is frequently used to describe the chancroid ulcer. In 50% of untreated cases, the chancroid bacteria infect the lymph nodes in the groin.
Prevention: Safer sexual practices; abstinence from sexual relations with an infected partner until the infection is cured.
Other Important Information: Chancroid is common in tropical countries; it usually occurs in discrete outbreaks in the United States. This disease is a cofactor for HIV transmission, as are genital herpes and syphilis. High rates of HIV infection among patients who have chancroid are seen in the United States and other countries.

No cases of chancroid were reported in Virginia in 2008.

Chickenpox (Varicella)

Agent: Varicella-zoster virus
Mode of Transmission: Person-to-person by direct contact or through droplet or airborne spread of vesicle fluid or respiratory secretions from an infected person.
Signs/Symptoms: Acute onset of mild fever and vesicular rash. Successive crops of lesions appear first on the head and progress to the trunk and extremities. The skin lesions can appear on the scalp, armpit, and mucous membranes of the mouth and respiratory tract.
Prevention: Vaccination of children starting at age 12 months followed by a second dose at age 4-6 years.
Other Important Information: The disease is highly transmissible; susceptible household contacts have an 80%-90% risk of becoming infected. Acute varicella is generally mild and self-limited, but severe complications may occur.

The 1,489 cases of chickenpox reported in Virginia during 2008 represented a 6% decrease from the 1,582 cases in 2007, and were similar to the five year average of 1,459.4 cases per year (Figure 7). The increased number of cases seen between 2002 and 2008 may be attributed to more complete reporting by physicians and school personnel.



Varicella vaccine was licensed in 1995, and in 1999 vaccination became a requirement for entry into school and daycare in Virginia for all children born on or after January 1, 1997. However, outbreaks of chickenpox occur despite high vaccination coverage, as the vaccine is 80%-85% effective in preventing infection.

The majority of cases (91%) were reported in those less than 20 years of age. The 1-9 year age group had the highest incidence rate (82.1 per 100,000). This was followed by the 10-19 year age group (54.1 per 100,000) and the less than 1 year age group (46.3 per 100,000). The other age groups had between 0.5 cases per 100,000 (50-59 year age group) and 5.3 cases per 100,000 (20-29 year age group). Race data were not provided for 22% of the reported cases. Among cases where race was known, incidence in the "other" population was highest (23.3 per 100,000), followed by rates in the white and black populations (15.9 and 9.4 per 100,000, respectively). Rates were similar between females and males (18.0 and 20.1, respectively).

The highest incidence rate (21.7 per 100,000) occurred in the central region and rates ranged between 17.1 and 19.4 cases per 100,000 in the other regions. Cases occurred throughout the year, with the highest proportion of cases (60%) occurring during the first and second quarters of the year. This is consistent with the traditional seasonal fluctuation seen in chickenpox, with the highest incidence occurring in winter and early spring.

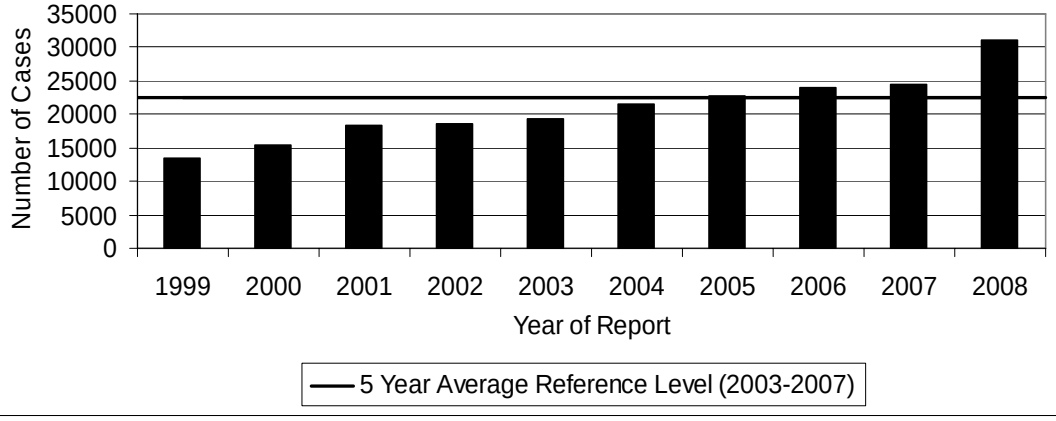
Twenty-four outbreaks were reported in 2008, with an average of 8.0 cases per outbreak. All of the outbreaks involved school-aged children. Despite high one-dose vaccination coverage, outbreaks of varicella have continued to occur, especially in elementary schools, where a large percentage of the students are vaccinated. This mirrors a nationwide trend and has led to new recommendations for a two-dose varicella vaccination schedule. While breakthrough infections have continued to occur in vaccinated individuals, on average, the illness in vaccinated individuals is much milder (less than 50 skin lesions, low or no fever, and a shorter duration of illness). Among the cases reported in 2008, one death was attributed to varicella in a female child less than 10 years of age.

Chlamydia trachomatis Infection

Agent: *Chlamydia trachomatis* (bacteria)
Mode of Transmission: Person-to-person via sexual transmission, or from the genital tract of an infected mother to her infant during birth.
Signs/Symptoms:
Men: Urethritis, with discharge, itching, and burning upon urination.
Women: Cervical inflammation with discharge, fluid buildup, and easily induced vaginal bleeding.
Infants: Infections of the eyes and respiratory tract.
Prevention: Safer sexual practices; screening of young women under 25 years of age; and presumptive treatment for *Chlamydia* infection among people who are exposed.
Other Important Information: Approximately 70% of infected women are asymptomatic.

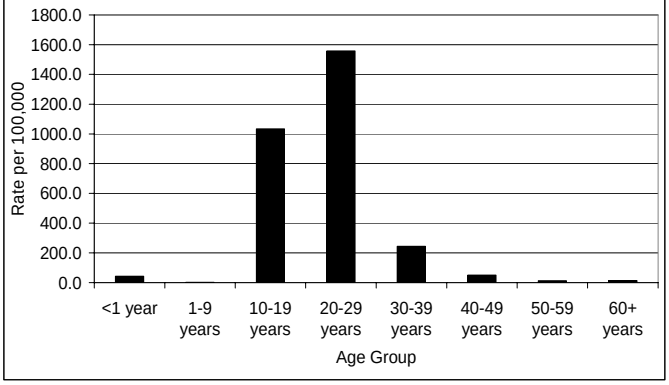
During 2008, a total of 31,205 cases of *C. trachomatis* infection were reported in Virginia (Figure 8). The overall incidence for 2008 (404.6 per 100,000 population) is a 39% increase over the average number of cases for the preceding 5 years and is more than double the 1999 rate. Nationwide, the number of reported cases continues to rise. The steady increase in reported *C. trachomatis* infections may be attributed to the use of testing technology with improved sensitivity and specificity, as well as increased infections. Despite the continuing increase in reported cases, the true number of annual infections remains underestimated. This underestimation is related to factors including the commonly asymptomatic nature of *C. trachomatis* infection, presumptive treatment for persons diagnosed with other sexually transmitted infections (e.g., gonorrhea) and screening programs that have historically been limited to high-risk females and male partners of infected women. While it is expected that more females will be tested than males because of current screening criteria, the number of males screened continues to increase. This increase in detection of disease among males is reflected in the increased incidence rates.

Figure 8. *Chlamydia trachomatis* Infection: Ten Year Trend, Virginia, 1999-2008



In 2008, the highest rates were seen in the 20-29 year age group (1,558.1 per 100,000) followed by the 10-19 year age group (1,034.2 per 100,000) (Figure 9). Among *C. trachomatis* infections in the less than 1 year age group, eight were ophthalmic (eye) infections due to perinatal exposure (see Ophthalmia Neonatorum section). Incidence in the black population (1,046.0 per 100,000) was more than nine times the rate in the white population (107.3 per 100,000) and three times the rate in the "other" population (348.6 per 100,000). The rate of *C. trachomatis* infection in females (589.9 per 100,000) was more than double the rate in males (210.9 per 100,000).

Figure 9. *Chlamydia trachomatis* Infection: Rate by Age Group, Virginia, 2008



Since 2001, the eastern region has experienced the highest *C. trachomatis* infection rates in Virginia (702.3 per 100,000 in 2008). The lowest rate in 2008 occurred in the northern region (207.6 per 100,000). No seasonal trend was observed.

Creutzfeldt-Jakob Disease

Agent: Believed to be caused by a prion protein.
Mode of Transmission: The majority of classic cases are sporadic, with no known source. A small percentage of cases (5%-15%) may be due to heredity or exposure to organ tissue contaminated with the prion. A form of the disease, variant CJD (vCJD), is thought to be transmitted through ingestion of beef from cattle infected with bovine spongiform encephalopathy (BSE, or mad cow disease).
Signs/Symptoms: Symptoms may begin with confusion, and they rapidly progress to a wide range of neurological signs and symptoms, including loss of coordination and dementia.
Prevention: Avoid organ and tissue transplants from infected individuals. For protection against vCJD, the federal government has regulations in place to prevent the spread of BSE in the United States.
Other Important Information: vCJD occurs in younger individuals, while sporadic CJD occurs more often in older individuals and has a slower progression. In Virginia, CJD is reportable when it occurs in persons under 55 years of age.

No cases of Creutzfeldt-Jakob disease in persons less than 55 years of age were reported in Virginia during 2008. The last reported case occurred in 2007 in a white male in the 30-39 year age group, and the infection was determined to be sporadic CJD. The individual died as a result of this condition. There have been six cases of classic CJD infection diagnosed in Virginia residents less than 55 years of age since 1998.

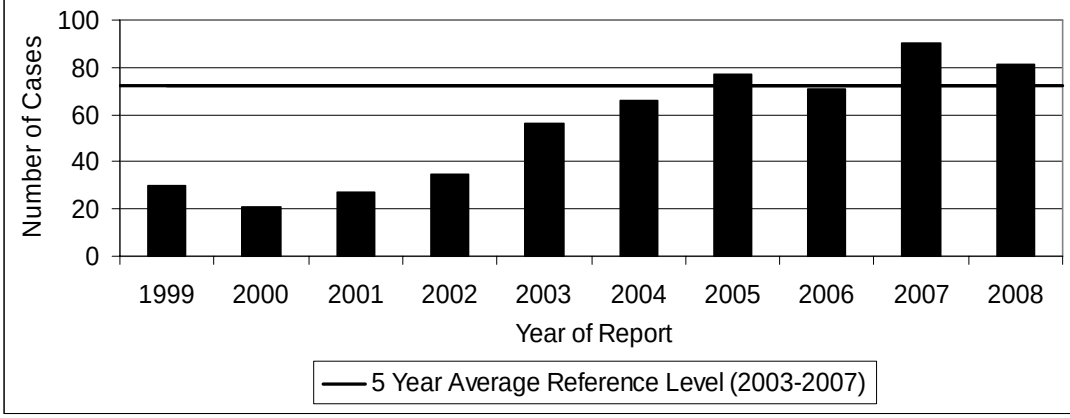
The only case of vCJD ever diagnosed in a Virginia resident occurred in 2006. Based on the patient's history, it was determined that the infection most likely occurred from contaminated cattle products consumed as a child when living in Saudi Arabia. It was the third case of vCJD reported in a U.S. resident. The two previously reported cases were born and raised in the United Kingdom, where they were believed to have been infected.

Cryptosporidiosis

Agent: *Cryptosporidium parvum* (parasite)
Mode of Transmission: Occurs via the fecal-oral route and can include person-to-person, animal-to-person, foodborne and waterborne transmission. *Cryptosporidium* oocytes can remain infectious for 2-6 months after being excreted from infected individuals. The oocytes are very resistant to chemicals used to purify drinking water.
Signs/Symptoms: Profuse watery diarrhea with cramping and abdominal pain. The diarrhea may be preceded by anorexia and vomiting in children. Asymptomatic infections are common.
Prevention: Careful hand hygiene after each toilet visit and before preparing and eating food. People with diarrhea should not enter public recreational water. Do not drink water from streams, lakes, springs or any unknown source. Water purification methods, including boiling water or filtration, should be considered when drinking water from natural or unknown sources.

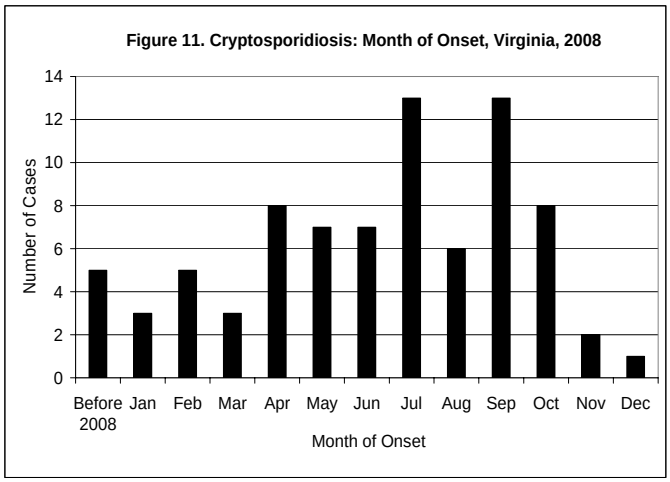
Eighty-one cases of cryptosporidiosis were reported in Virginia during 2008. This is a 10% decrease from the 90 cases reported in 2007 and a 12% increase from the five year average of 72 cases per year (Figure 10). The annual number of cryptosporidiosis cases increased between 2000 and 2007, with the exception of 2006.

Figure 10. Cryptosporidiosis: Ten Year Trend, Virginia, 1999-2008



In 2008, the highest incidence rates occurred in the 60 year and older age group (1.6 per 100,000), followed closely by the 1-9 year age group (1.5 cases per 100,000). The other age groups had rates between 0.0 and 1.0 per 100,000. Race was not reported for 35% of cases, but among those with information on race, the black and white populations had similar rates of infection (0.8 and 0.7 per 100,000, respectively). The rate of infection among females was

slightly higher than that among males (1.1 compared to 0.9 per 100,000). By region, the highest rate was reported from the southwest region (1.9 per 100,000). The other regions had rates between 0.5 and 1.3 per 100,000. A seasonal trend was observed, with 78% of the cases occurring from April through October (Figure 11). Among cases reported in 2008, one death was attributed to cryptosporidiosis in an adult male from the 60 year and older age group.



Cyclosporiasis

Agent: *Cyclospora cayetanensis* (parasite)
Mode of Transmission: Can be foodborne or waterborne. *Cyclospora* are resistant to chlorination. Direct person-to-person transmission has not been documented.
Signs/Symptoms: Profuse watery diarrhea commonly occurs, along with nausea, vomiting, anorexia, substantial weight loss, abdominal bloating or cramping and prolonged fatigue. Fever occurs in approximately half the patients.
Prevention: Fresh produce should be washed thoroughly before it is consumed.

Two cases of cyclosporiasis were reported during 2008. This is similar to the two cases reported in 2007 and the five year average of 1.8 cases per year. The reported cases included a male and a female in the 10-19 and 20-29 year age groups from the central and northern regions of the state. One reported international travel prior to disease onset.

Diphtheria

Agent: Toxin secreted by strains of the bacterium *Corynebacterium diphtheriae*
Mode of Transmission: Person-to-person via droplet spread. Rarely, transmission may occur from contact with skin lesions or articles soiled with discharges from the lesions of infected persons.
Signs/Symptoms: Sore throat, anorexia, nasal discharge, and formation of a bluish-white, grayish-green, or black adherent membrane in the throat. More severe cases can include swelling of the neck and airway passages.
Prevention: Diphtheria vaccination beginning at two months of age. Antibody levels wane over time making booster doses necessary every 10 years, beginning at age 11-12 years.
Other Important Information: The overall case-fatality rate for diphtheria is 5%-10%, with higher death rates in young children and those over 40 years of age.

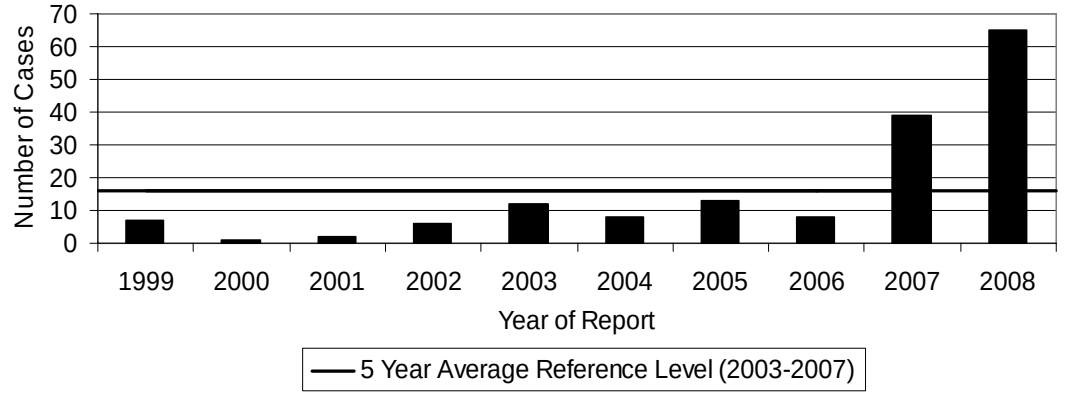
In Virginia, no cases of diphtheria were reported during 2008. The last reported case occurred in 1989. Nationally, zero to five cases of diphtheria are reported each year.

Ehrlichiosis

Agent(s): Bacteria belonging to the family *Anaplasmataceae*. *Ehrlichia chaffeensis* infects monocytes and causes an illness called human monocytic ehrlichiosis (HME). *Anaplasma phagocytophilum* infects granulocytes, causing an illness called human granulocytic anaplasmosis (HGA). *E. ewingii* also infects granulocytes and causes a disease referred to as *E. ewingii* infection.
Mode of Transmission: Through the bite of an infected tick. *Ehrlichia chaffeensis* and *E. ewingii* may infect adult or occasionally nymphal stage lone star ticks. *Anaplasma phagocytophilum* may infect nymphal stage blacklegged ticks (formerly known as deer ticks). Transmission of these pathogens occurs when an infected tick bites a person and stays attached while feeding for a period of more than 24 hours.
Signs/Symptoms: Symptoms are usually non-specific, but commonly include fever, headache, nausea, anorexia, vomiting, and muscle pain. Blood work may be characterized by anemia, leukopenia, thrombocytopenia, or elevated hepatic transaminases. Untreated infections may result in prolonged fever, renal failure, respiratory distress, seizures, coma and death. Inflammation of the brain and the lining around the brain and spinal cord develops in 20% of patients with HME, but is very rare with HGA.
Prevention: Avoid being bitten by ticks. Avoid likely tick habitats such as humid forest environments with dense undergrowth or heavy leaf litter, and tall weeds along forest margins, tree lines, forest trails and forest clearings. When in tick-prone habitats, wear light-colored clothing with pants legs tucked into socks. Apply permethrin-based repellants to clothing, socks and shoes and DEET, Picaridin, or Oil of Lemon Eucalyptus-based repellents to exposed areas of skin prior to entering tick habitats. Thoroughly check your body for ticks after visiting tick habitats and remove attached ticks as soon as possible.

Sixty-five cases of ehrlichiosis were reported in Virginia during 2008. This is a 67% increase from the 39 cases seen in 2007 and a 306% increase from the five year average of 16 cases per year (Figure 12). The reason for this considerable increase is not known, but one factor may be increases in deer populations resulting from the encroachment of suburban development on farms and forests where deer populations were previously kept in check by hunting. In addition, more people may seek medical care and laboratory testing when bitten by a tick because of

Figure 12. Ehrlichiosis: Ten Year Trend, Virginia, 1999-2008



increased awareness of tick-borne diseases. Adult lone star ticks and blacklegged ticks both depend on deer blood for their reproduction. Among cases reported in 2008, 63 were specified as HME, and 2 were specified as HGA.

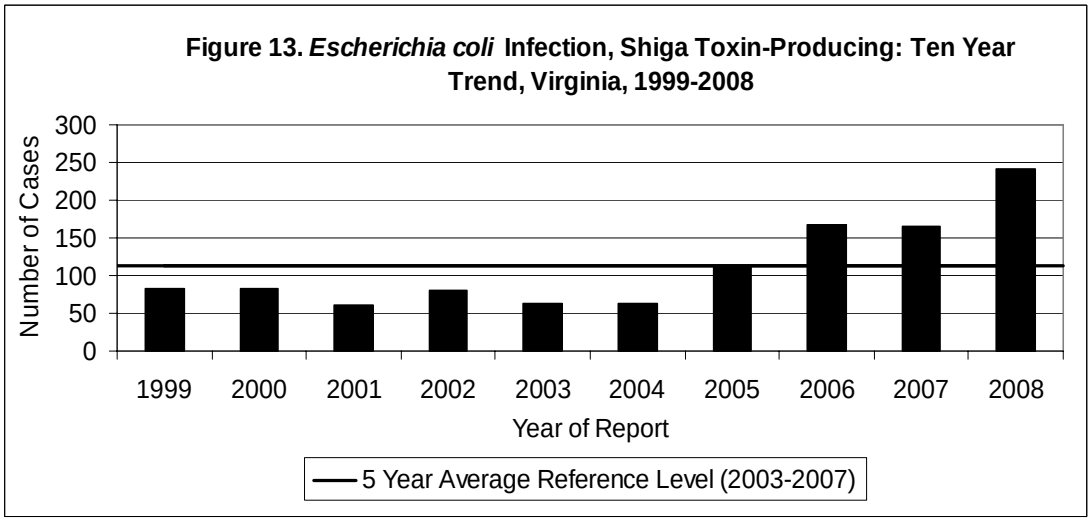
Ehrlichiosis incidence was highest in the 60 year and older age group (2.3 per 100,000) and decreased with age. This is similar to the expected age pattern for ehrlichiosis seen in other endemic areas of the United States. Typically, most cases are in persons over the age of 50 years. The white population had higher incidence (0.5 per 100,000) than the "other" population (0.2 per 100,000) or the black population (0.1 per 100,000). The rate in females was less than half the rate in males (0.5 and 1.2 per 100,000, respectively).

Cases occurred in all regions of the state. The highest incidence occurred in the southwest region (1.4 per 100,000), followed closely by the northwest region (1.3 per 100,000). Other regions in the state had rates ranging from 0.4 to 0.8 per 100,000. The vast majority of cases (93.8%) had onsets in the second and third quarters.

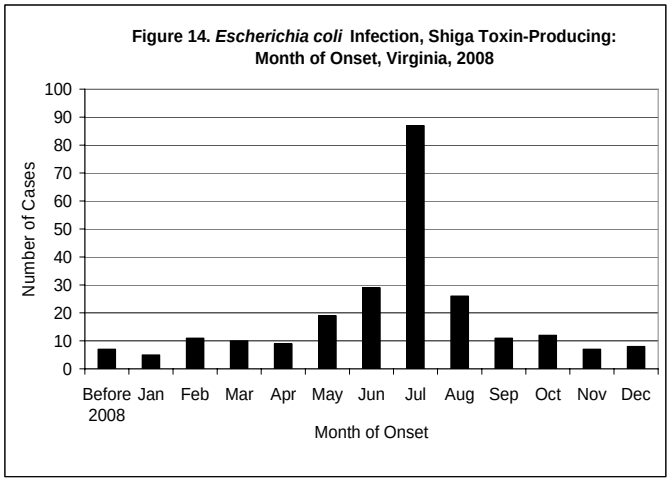
***Escherichia coli* Infection, Shiga Toxin-Producing**

Agent: Shiga toxin-producing *Escherichia coli* (bacteria).
Mode of Transmission: From food or water contaminated with human or animal feces, or person-to-person from infected symptomatic people or from carriers. Fomites and contaminated environment may also play a role in transmission.
Signs/Symptoms: Non-bloody to completely-bloody diarrhea and severe abdominal cramps with little or no fever. In some people, including children less than five years of age and older adults, the infection can cause a complication called hemolytic uremic syndrome (HUS), in which the red blood cells are destroyed and the kidneys fail.
Prevention: Careful hand hygiene after each toilet visit and before preparing and eating food. All ground beef should be cooked thoroughly to an internal temperature of at least 160°. Raw milk, unpasteurized dairy products, and unpasteurized juices should not be consumed.
Other Important Information: The most virulent serotype in the shiga toxin-producing pathotype is *E. coli* O157:H7. In the U.S., *E. coli* O157:H7 is the serotype most commonly associated with hemolytic uremic syndrome (HUS). See section on Hemolytic Uremic Syndrome for more information.

Shiga toxin-producing *E. coli* infection has been a reportable condition in Virginia since 1999. During 2008, 241 cases were reported in Virginia. This is a 46% increase from 2007, and a greater than 100% increase from the five year average of 113.8 cases per year (Figure 13). The increase in cases in 2008 is in part attributed to a large outbreak that occurred during the summer months.



The highest rate of infection was seen in the less than one year age group (15.4 per 100,000), followed by the 10-19 year age group (7.5 per 100,000) and the 1-9 year age group (7.1 per 100,000). The other age groups had incidence rates between 0.9 and 1.9 per 100,000. Forty-eight percent of cases did not have a reported race. Among those with race information, the rate for the white population was higher (1.8 per 100,000) than rates for the black and "other" populations (1.2 and 0.6 per 100,000, respectively). Females and males had similar incidence (2.9 and 3.3 per 100,000, respectively). The northern and northwest regions reported the highest incidence rates (5.2 and 4.9 per 100,000), while rates in the other regions ranged from 1.6 to 1.8 per 100,000, with the lowest rate observed in the central region. Cases occurred throughout the year, but peaked in the warmer months, between May and August (Figure 14). The large number of cases reported in July was associated with an outbreak that occurred at a summer camp. The outbreak was attributed to undercooked ground beef. Of the 59 camp attendees reporting signs or symptoms of illness, 34 had laboratory confirmation of *E. coli* O157:H7 infection.

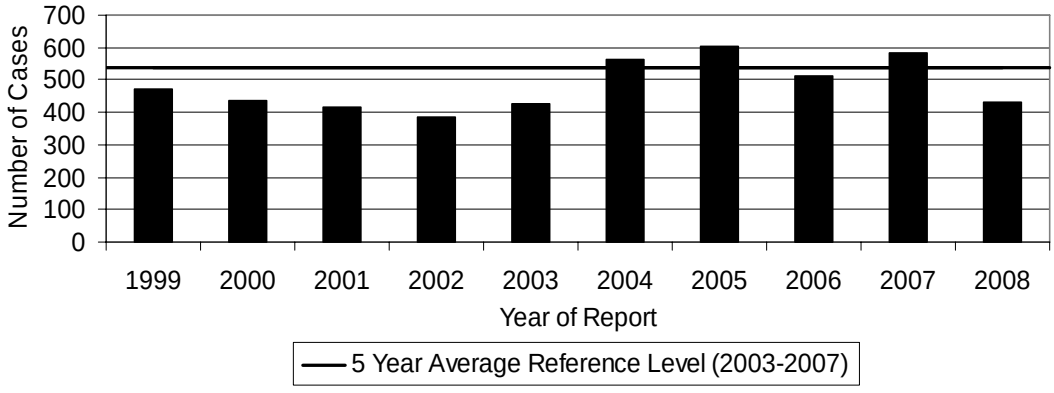


Giardiasis

Agent: *Giardia lamblia* (parasite)
Mode of Transmission: Person-to-person transmission by hand-to-mouth transfer of cysts from the feces of an infected person. Localized outbreaks are more often due to ingestion of cysts in fecally-contaminated drinking and recreational water than from fecally- contaminated food. Another source is unfiltered stream and lake waters open to contamination by human and animal feces.
Signs/Symptoms: Symptoms may include diarrhea, abdominal pain, bloating, nausea and vomiting. A person may be asymptomatic or develop chronic illness.
Prevention: Careful hand hygiene after each toilet visit and before preparing and eating food. Do not drink recreational water or untreated water from shallow wells, lakes, rivers, springs, ponds or streams.

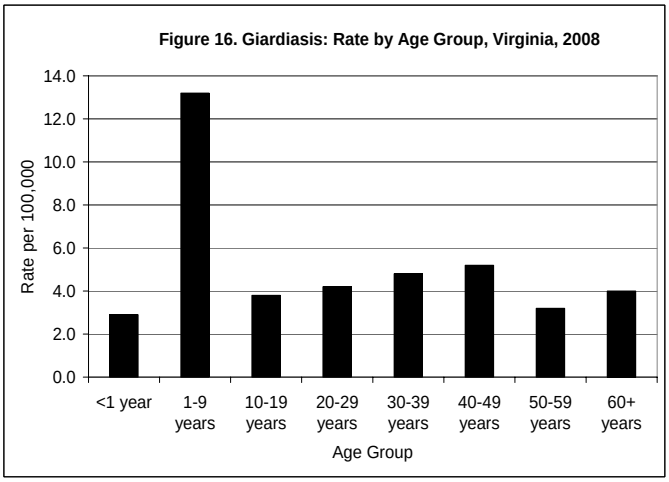
During 2008, 432 cases of giardiasis were reported in Virginia. This is a 26% decrease from the 582 cases reported in 2007, and a 20% decrease from the five year average of 537.4 cases per year (Figure 15). A study conducted by VDH in 2007 indicated that the increase in cases observed during 2004 through 2007 is at least partly attributed to infections identified through screening of refugees who had recently arrived in the U.S.

Figure 15. Giardiasis: Ten Year Trend, Virginia, 1999-2008

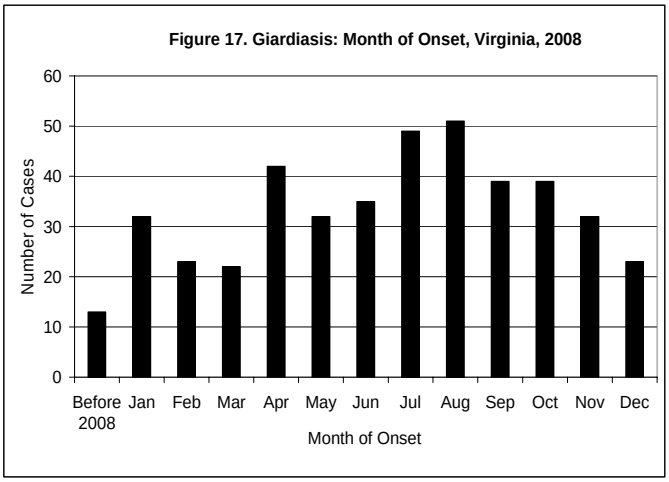


In 2008, the 1-9 year age group had the highest proportion of reported cases and the highest incidence rate (28%, 13.2 per 100,000, respectively) (Figure 16). Rates in the other age groups ranged from 2.9 to 5.2 per 100,000. Race was not reported for 56% of the cases, but among those with a reported race, rates were higher in the "other" populations (5.3 per 100,000) than among the black and white populations (2.9 and 2.1 per 100,000, respectively). A slightly higher rate was reported in the male population (6.6 per 100,000) than the female population (4.6 per 100,000).

Figure 16. Giardiasis: Rate by Age Group, Virginia, 2008

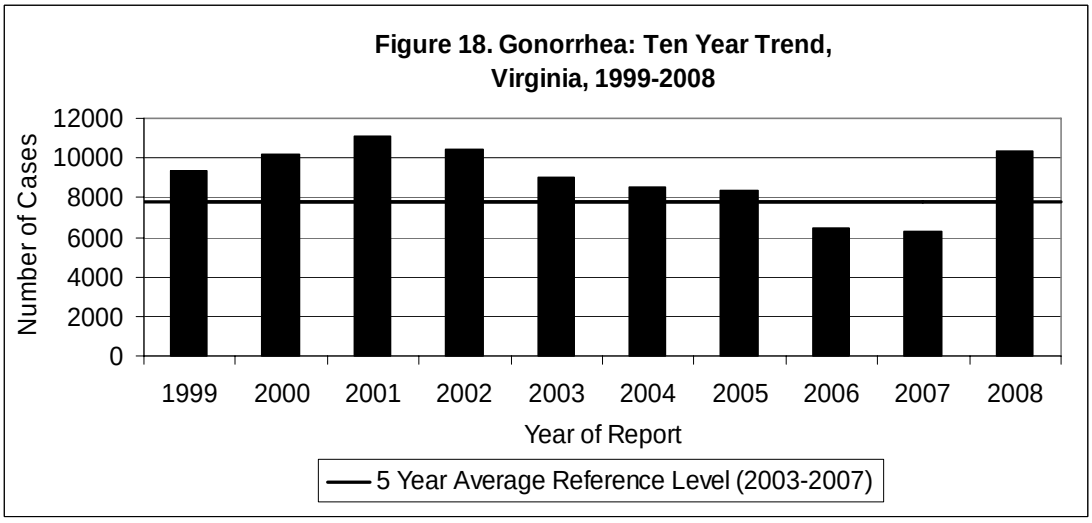


By region, the highest rate was seen in the northern region (7.8 per 100,000), followed by the northwest (6.8 per 100,000). Rates in the other regions ranged from 3.5 to 4.6 per 100,000. Illness onset peaked during April to October, with two-thirds of cases occurring during these three months (Figure 17).



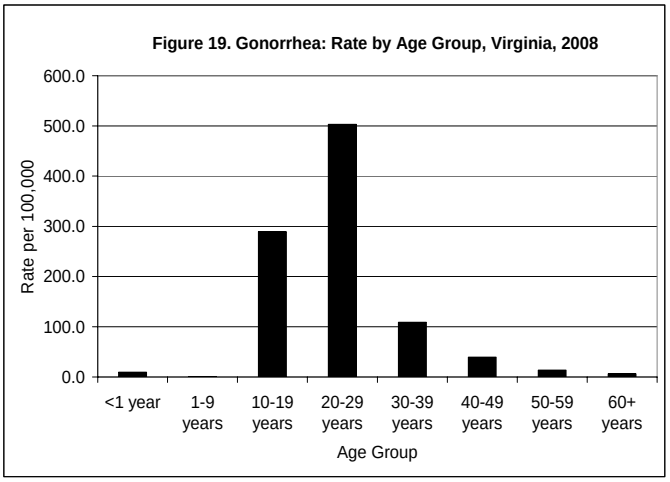
Gonorrhea

Agent: *Neisseria gonorrhoeae* (bacteria)
Mode of Transmission: Sexually transmitted through direct contact with infected areas.
Signs/Symptoms:
Men: Discharge from the urethra.
Women: Usually asymptomatic, although it may cause vaginal discharge or bleeding after intercourse.
Prevention: Safer sexual practices and ensuring that infected sexual contacts are treated.
Other Important Information: In 2004, the CDC stopped recommending fluoroquinolones as a first-line treatment of gonorrhea in men who have sex with men (MSM) because of an increase in fluoroquinolone resistance. Since April 2007, the CDC has advised providers not to use fluoroquinolones (e.g., ciprofloxacin, ofloxacin, and levofloxacin) for the treatment of gonorrhea. In April 2008, cefixime became available again for distribution in the United States. A single 400 mg dose of cefixime is the only oral treatment for uncomplicated gonorrhea of the cervix, urethra or rectum recommended by the CDC.



According to the CDC, gonorrhea is substantially under-diagnosed and underreported, and approximately twice as many new infections are estimated to occur as are reported each year. Gonorrhea rates in Virginia declined from 2001 to 2007. The 10,336 reported cases in 2008 were a 65% increase from the reported cases in 2007, and a 33% increase from the five year average of 7,742.8 cases per year (Figure 18). This increase is partly attributed to changes in data handling and data entry protocols which allowed for greater efficiency of data collection.

A comparison of age groups indicates that gonorrhea incidence is highest in the 20-29 year age group (503.2 per 100,000 population), followed by the 10-19 year age group (289.4 per 100,000 population) (Figure 19). The rate in the black population (483.5 per 100,000) was 23 times the rate in the white population (20.8 per 100,000), which is a decrease from 33 times the rate in the white population in 1998. However, gonorrhea remains the sexually transmitted disease with the most significant racial disparity in Virginia.



Gonorrhea incidence rates were higher among females compared to males (148.9 and 118.3 per 100,000, respectively). The eastern region had the highest incidence rate (285.8 per 100,000), followed by the central region (217.1 per 100,000). Among the other regions in the state, incidence ranged from 34.8 to 76.1 per 100,000. No seasonal trend was observed.

Granuloma Inguinale

Agent: *Calymmatobacterium granulomatis* (bacteria)
Mode of Transmission: Direct contact with lesions, presumably during sexual activity. Young children can be infected by contact with infectious secretions.
Signs/Symptoms: Skin lesions that eventually form fibrous tissue. This is a chronic condition that can lead to destruction of genital organs and spread to other parts of the body through autoinoculation.
Prevention: Sexual partners should be examined, counseled to practice safe sex, and offered antimicrobial therapy, when needed.

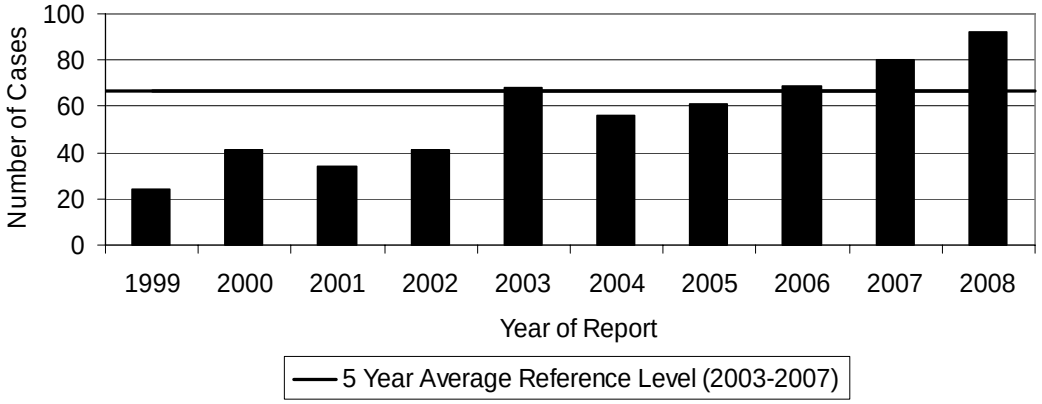
No cases of granuloma inguinale were reported in Virginia during 2008. The last reported case occurred in 2001.

Haemophilus influenzae Infection, Invasive

Agent: *Haemophilus influenzae* (bacteria)
Mode of Transmission: Person-to-person by inhalation of respiratory droplets or direct contact with nose and throat discharge during the infectious period.
Signs/Symptoms: Inflammation of the lining of the brain and spinal cord, inflammation of the epiglottis which may lead to blockage of upper airway and death, pneumonia, skin infection, arthritis, or bloodstream infection.
Prevention: Vaccination with conjugate *Haemophilus influenzae* type b (Hib) vaccine beginning at 2 months of age.
Other Important Information: Since the licensure of conjugate Hib vaccine in the late 1980s, the incidence of invasive Hib disease has declined by more than 99% compared with the pre-vaccine era.

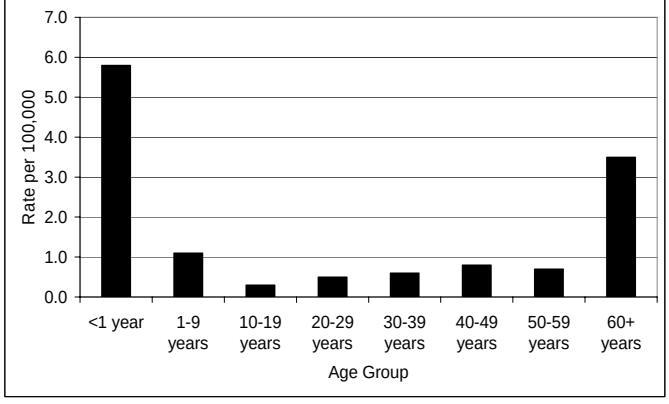
Ninety-two cases of invasive *H. influenzae* infection were reported in Virginia during 2008. This is a 15% increase from the 80 cases reported in 2007, and a 38% increase from the five year average of 66.8 cases per year (Figure 20).

Figure 20. *Haemophilus influenzae* Infection, Invasive: Ten Year Trend, Virginia, 1999-2008



Incidence was highest in the youngest and oldest age groups. Children less than 1 year of age had a rate of 5.8 per 100,000, while the 60 year and older age group had a rate of 3.5 per 100,000 (Figure 21). The other age groups had rates between 0.3 and 1.1 per 100,000. Among those for whom information on race was available, the black, "other" and white populations had similar rates, ranging from 1.0 to 1.2 per 100,000. Incidence in females was comparable to incidence in males (1.3 and 1.1 per 100,000, respectively). The northwest and central regions had the highest rate (1.7 per 100,000), followed by the southwest region (1.4 per 100,000). The other regions

Figure 21. *Haemophilus influenzae* Infection, Invasive: Rate by Age Group, Virginia, 2008



had rates between 0.7 and 0.9 per 100,000. Cases occurred throughout the year with the highest proportion (31%) occurring in the second quarter. Vaccination status at time of disease was known for 9 of the 12 children under five years of age (75%). Eight children had received at least one dose of Hib vaccine and one child was too young to be vaccinated. The serotype for individual isolates was reported for 37% of reported cases, and none of these isolates were confirmed as type B. Among the cases reported in 2008, seven deaths were attributed to invasive *H. influenzae* infection, all of which occurred in persons greater than fifty years of age.

Hansen's Disease (Leprosy)

Agent: *Mycobacterium leprae* (bacteria)
Mode of Transmission: Person-to-person, probably through nasal secretions from persons with untreated lepromatous disease (those with discolored spots on the skin).
Signs/Symptoms: A chronic disease with varying symptoms, including skin lesions (tuberculoid leprosy); discolored, flat spots on the skin (lepromatous leprosy); nasal congestion; nosebleeds; and nerve damage.
Prevention: Early diagnosis and treatment is important. Hand washing when in contact with patients with lepromatous leprosy and disinfection of surfaces contaminated with infectious nasal secretions should be performed until treatment is established.

No cases of Hansen's disease were reported in Virginia during 2008. The last reported case occurred in 2007 in an adult male immigrant from South America where the disease was likely to have been acquired. The five year average for the occurrence of this condition is less than one case per year.

Hantavirus Pulmonary Syndrome

Agent: Hantavirus family
Mode of Transmission: Several different types of hantaviruses have been identified and each is associated with a different rodent species. Rodents infected with hantavirus do not become ill but they can transmit the virus to humans when their urine or feces are aerosolized and inhaled.
Signs/Symptoms: Fever, muscle pain, and gastrointestinal complaints followed by an abrupt onset of respiratory distress and decreased blood pressure. Respiratory failure and shock follow quickly.
Prevention: Exclude rodents from houses and other buildings. Disinfect rodent-contaminated areas with a spray disinfectant solution prior to cleaning. Contaminated areas should be cleaned with a wet mop and not be vacuumed or swept. Use approved respirators to avoid inhalation of dust when cleaning or removing potentially infected materials.
Other Important Information: Although most common in the southwestern part of the country, hantavirus infections can occur anywhere.

No cases of hantavirus pulmonary syndrome (HPS) were reported in Virginia during 2008. The only hantavirus case reported in Virginia occurred in 1993. In 2004, a resident of southwest Virginia died due to HPS following an exposure that occurred in West Virginia. For surveillance purposes, that case was attributed to West Virginia.

Hemolytic Uremic Syndrome

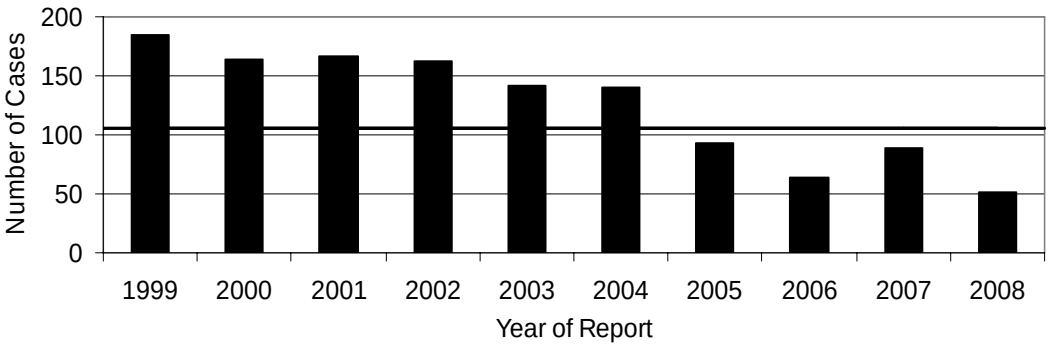
Agent: Serious sequelae associated with infection with Shiga toxin-producing bacteria, such as *Escherichia coli* or *Shigella*.
Mode of Transmission: See section on *E. coli* Infection, Shiga Toxin-Producing or Shigellosis.
Signs/Symptoms: Kidney failure, often requiring dialysis, as well as neurological impairment (e.g., stroke or seizures). Eight percent of persons with diarrhea caused by *E. coli* O157:H7 develop this syndrome, which occurs during the first two weeks after onset of diarrhea.
Prevention: See section on *E. coli* Infection, Shiga Toxin-Producing or Shigellosis.

Two cases of hemolytic uremic syndrome (HUS) were reported in 2008. This is slightly more than the five year average of 1.2 cases per year. Both occurred in children in the 1-9 year age group, one was female and the other male, and one occurred in the black population and the other in the white population. Both were reported from the southwest region and had onset during the second quarter of the year.

Hepatitis A

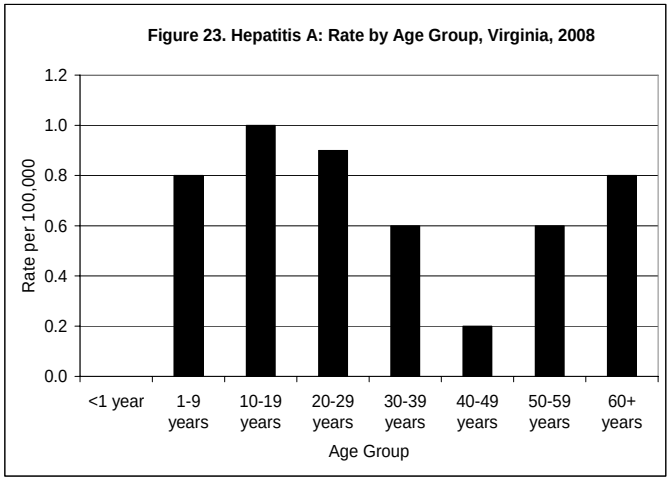
Agent: Hepatitis A virus (Picornaviridae family)
Mode of Transmission: Person-to-person by direct contact with fecal material from infected animals or people. Important vehicles for transmission include food or water contaminated by infected animals or people.
Signs/Symptoms: Fever, malaise, nausea, abdominal discomfort, and jaundice. In older children and adults, symptoms usually occur for several weeks, though prolonged or relapsing disease can last up to six months. Younger children often exhibit no symptoms.
Prevention: Safe food preparation, good personal hygiene (e.g., washing hands with soap after diaper changes in child care settings), and immunization. Administering immune globulin (IG) after exposure to hepatitis A can protect against symptomatic infection.
Other Important Information: This is an acute illness only; chronic infection does not occur. A vaccine was first introduced in 1995 and is currently recommended for all children at the age of one year, persons who are at increased risk of infection, and persons who are at increased risk for complications from hepatitis A.

Figure 22. Hepatitis A: Ten Year Trend, Virginia, 1999-2008

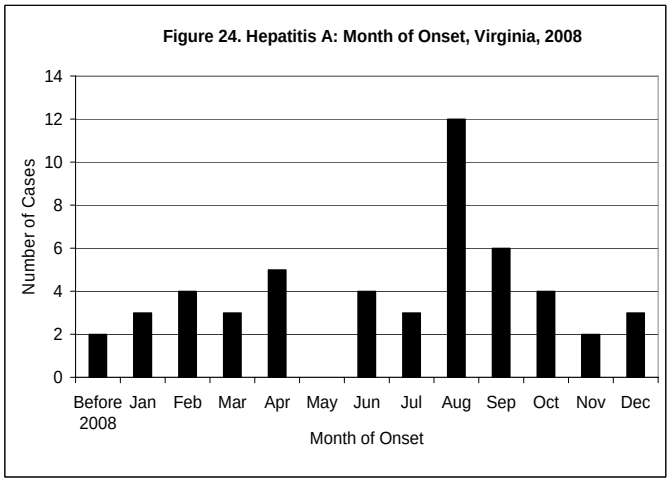


During 2008, 51 cases of hepatitis A infection were reported in Virginia, representing a 43% decrease from the 89 cases reported in 2007 and a 52% decrease from the five year average of 105.4 cases per year (Figure 22). Nationally, there has been an overall downward trend in reported hepatitis A infections which began in the late 1990s. There were 31,032 hepatitis A cases reported in the U.S. in 1996 and only 2,979 reported in 2007, the most recent year for which national data are available. Introduction of a hepatitis A vaccine in 1995 is most likely responsible for this decrease.

In Virginia in 2008, the highest incidence rate occurred in the 10-19 year age group (1.0 per 100,000) (Figure 23). Rates in the other age groups ranged from 0.0 (in infants) to 0.9 per 100,000 (20-29 year age group). Forty-one percent of cases were missing race data. Among cases with race reported, the rate in the "other" race group was highest (1.7 per 100,000), while the rate in the white and black populations was the same (0.3 per 100,000). Females had a rate of infection similar to males (0.7 and 0.6 per 100,000, respectively).



The incidence rate observed in the northern region (1.5 per 100,000) was more than twice the rate in the southwest region, which had the second highest rate (0.6 per 100,000). The rates in the other regions ranged from 0.2 to 0.3 per 100,000. Illness onset among cases was fairly evenly distributed throughout the year except for the third quarter, when 41% of cases occurred (Figure 24). The high number of cases reported in August is partly attributed to multiple ill individuals in several families who were likely exposed to hepatitis A while traveling outside the country.



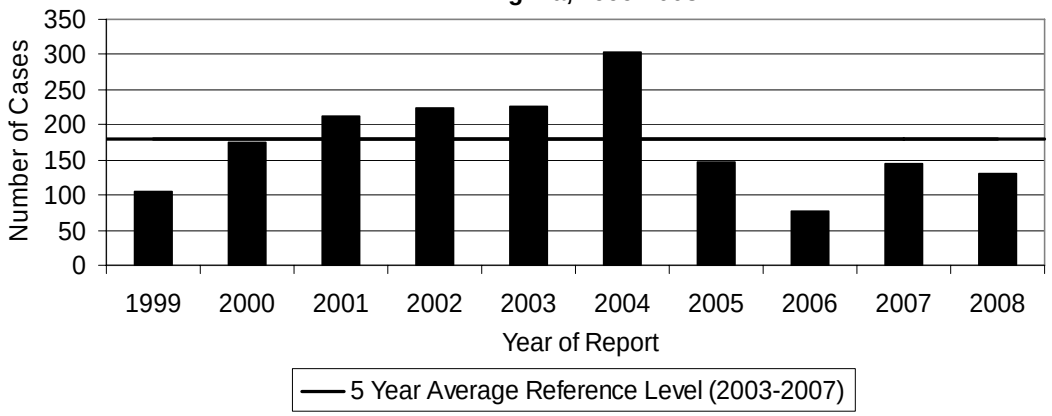
Hepatitis B, Acute

Agent: Hepatitis B virus (Hepadnavirus)
Mode of Transmission: Person-to-person transmission by blood or body fluid exposure (e.g., sexual, perinatal, or through the skin, such as during injection drug use).
Signs/Symptoms: Fever, general feeling of illness, nausea, abdominal pain, and jaundice. Infection can be asymptomatic. The likelihood of developing symptoms is age-dependent.

Prevention: Strategies include immunization of people at increased risk of infection; screening of all pregnant women and treatment of children born to positive women; routine immunization of infants; routine immunization of adolescents who have not previously been immunized; and screening of donated blood and organs.
Other Important Information: Infection with hepatitis B virus may lead to chronic (long-term) infection. Death from liver disease occurs in 15%-25% of those with chronic infection.

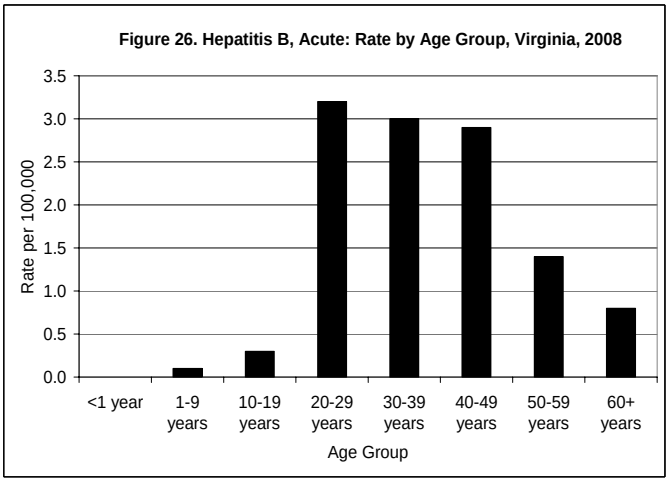
The 130 cases of acute hepatitis B infection reported in Virginia during 2008 represent a 10% decrease from the 144 cases reported in 2007, and a 28% decrease from the five year average of 179.6 cases per year (Figure 25).

Figure 25. Hepatitis B, Acute: Ten Year Trend, Virginia, 1999-2008



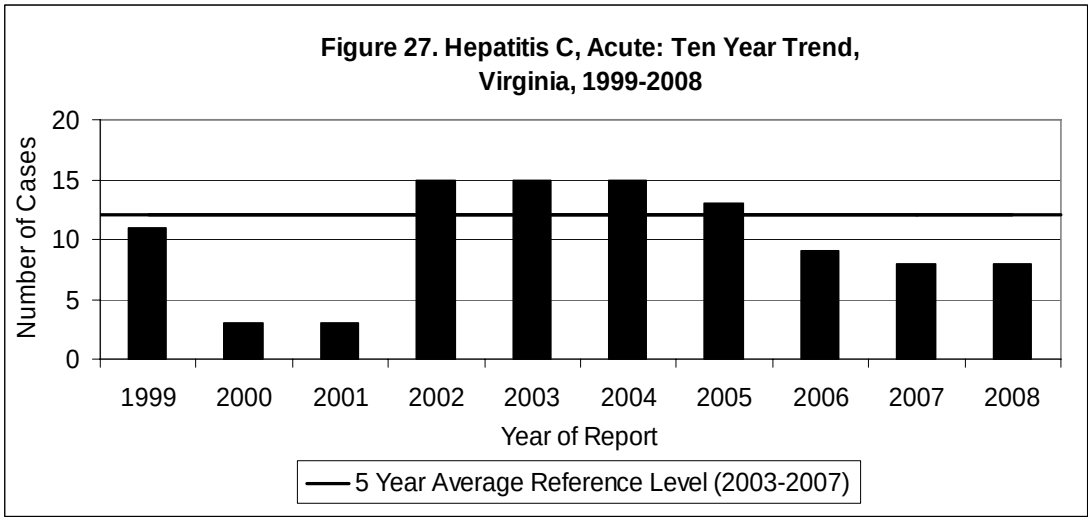
By age, the highest incidence rates were seen in the 20-29 and 30-39 year age groups (3.2 and 3.0 per 100,000, respectively), followed closely by the 40-49 year age group (2.9 per 100,000) (Figure 26). Only four cases (3%) were reported in individuals under the age of 20. Thirty-five percent of reports were missing race information. Among cases with race reported, the rate in the black population (2.1 per 100,000) was more than two times the rate in the white population (0.9 per 100,000), and ten times the rate in the "other" population (0.2 per 100,000). The rate of occurrence in males was more than double the rate in females (2.4 and 0.9 per 100,000, respectively). The southwest region had the highest rate of acute hepatitis B cases (3.5 per 100,000), followed by the central region (2.9 per 100,000). The other regions had rates between 0.5 and 1.4 per 100,000. Acute hepatitis B infections do not have a seasonal pattern. Information on risk factors was available for 43% of the reported cases. Multiple sex partners was the most frequently reported potential source of infection for hepatitis B and accounted for 30% of the cases with known risk factors. Among the cases reported in 2008, one death in an adult male was attributed to acute hepatitis B infection.

Figure 26. Hepatitis B, Acute: Rate by Age Group, Virginia, 2008

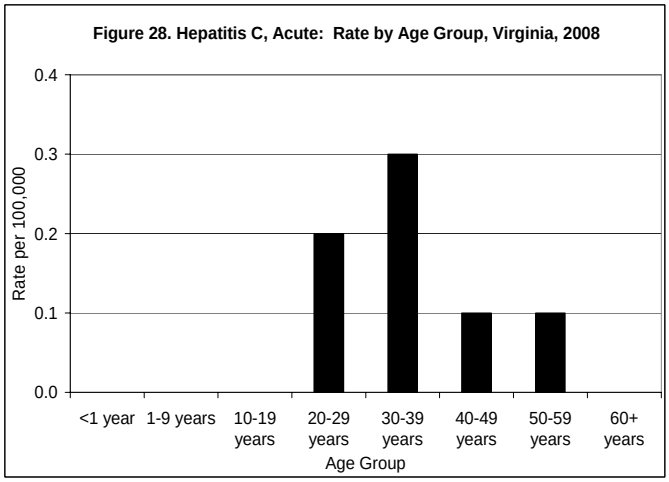


Hepatitis C, Acute

Agent: Hepatitis C virus (HCV) (Flaviviridae family)
Mode of Transmission: Person-to-person through perinatal transmission; through the skin, such as during injection drug use; or rarely through sexual exposure to blood or body fluids.
Signs/Symptoms: Loss of appetite, nausea, abdominal discomfort, or jaundice.
Prevention: Screening of donated blood and organs and avoidance of injection drug use.
Other Important Information: Only 10% of new infections cause symptoms, but 80% of new infections become chronic, resulting in carriers capable of spreading infection. As people with chronic HCV infection age, they are at higher risk for developing chronic liver disease, cirrhosis, and liver cancer.



Eight cases of acute hepatitis C infection were reported in Virginia during 2008 (Figure 27). This is 33% less than the five year average of 12 cases per year. The incidence rate was highest in the 30-39 year age group (0.3 per 100,000), followed closely by the 20-29 year age group (0.2 per 100,000). No cases were reported among individuals less than twenty years of age (Figure 28). Information on race was missing for almost 40% of the cases. Where race was reported, rates were the same among the black and white populations (0.1 per 100,000, for each). Females and males had the same rate (0.1 per 100,000). The highest number of cases and the highest incidence rate occurred in the southwest and central regions (3 cases, 0.2 per 100,000). Although 50% of reported cases had onset during the second quarter, no seasonality is expected for this condition. Among the cases reported in 2008, one death was attributed to acute hepatitis C infection in an adult male.

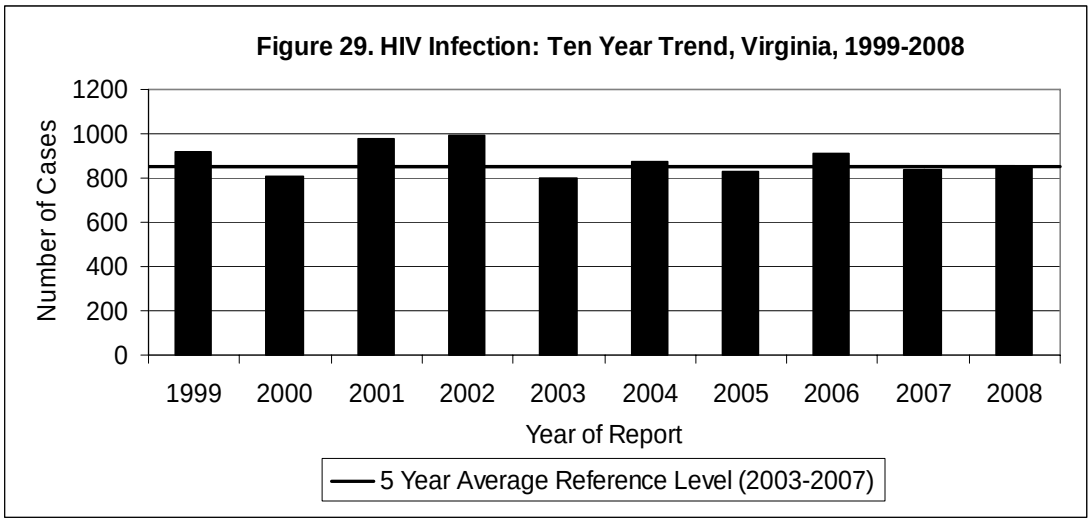


Human Immunodeficiency Virus (HIV) Infection and Acquired Immunodeficiency Syndrome (AIDS)

Agent: Human Immunodeficiency Virus (retrovirus)
Mode of Transmission: Person-to-person via unprotected intercourse, contact of cut or abraded skin with body secretions carrying the virus, use of contaminated needles, blood transfusions and transplants with organs from infected donors, or from mother to child before or during birth or through breastfeeding.
Signs/Symptoms: Initial infection with HIV can cause an acute illness of fever, muscle pain, and sore throat, after which the person can be asymptomatic for several years. Eventually the immune system is affected, causing AIDS.
Prevention: Safer sexual practices; screening of blood and plasma; and among infected mothers, antiretroviral prophylaxis, cesarean delivery before labor, and avoidance of breastfeeding.
Other Important Information: Rapid tests (which provide results within 30 minutes) are becoming more widely available and are used at various testing sites in Virginia. For more information, see: http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5524a2.htm, call your local health department or contact the Virginia Department of Health HIV/STD/Viral Hepatitis Hotline at 1-800-533-4148.

HIV

During 2008, 844 cases of HIV infection were reported in Virginia. This represents a slight increase from the 836 cases reported in 2007, but is very similar to the five year average of 851.0 cases per year (Figure 29).



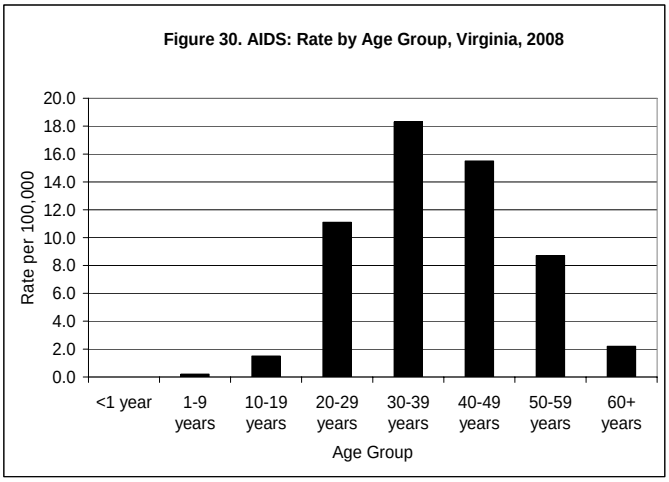
The highest HIV infection rates were in the 20-29 and 30-39 year age groups (24.0 and 19.7 per 100,000, respectively), followed by the 40-49 year age group (16.0 per 100,000). HIV diagnoses were reported in four infants in 2008. The incidence rate in the black population (36.5 per 100,000) was ten times the rate in the white population (3.5 per 100,000), and more than twice

the rate in the "other" population (15.8 per 100,000). Incidence rates among males have been consistently higher than rates among females. In 2008, males were twice as likely to be reported with HIV infection as females (15.9 and 6.2 per 100,000, respectively). Despite these disparities, HIV/AIDS rates among black males in Virginia and the U.S. have declined substantially since the early 1990s. In 2008, the eastern, central and northern regions reported the highest incidence rates (17.5, 17.1 and 9.7 per 100,000, respectively).

AIDS

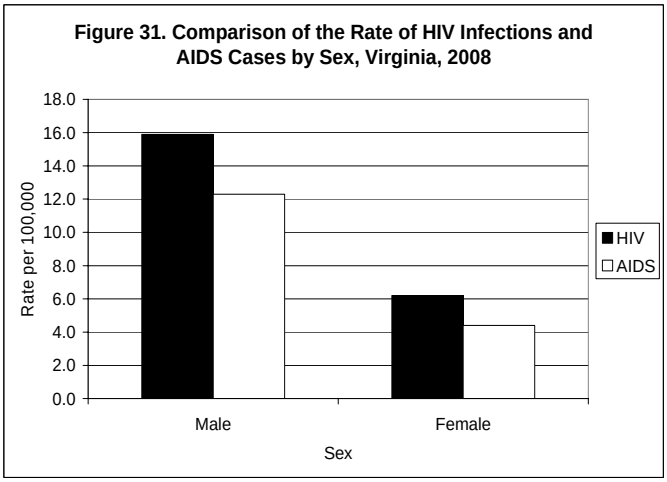
Prior to 1996, approximately 50% of those infected with HIV developed AIDS within 10 years; however, this interval increased with the introduction of anti-retroviral medications. In Virginia, the annual number of reported AIDS cases decreased steadily from 970 cases in 2001 to 589 cases in 2006; in 2007, there was a slight increase to 599 reported cases. The 638 cases reported in 2008 is a 6% increase from the previous year, but is less than the five year average of 676.2 cases per year. The highest incidence rates in 2008 were observed in the 30-39 year age group (18.3 per 100,000), followed by the 40-49 year age group (15.5 per 100,000) (Figure 30). No infants were reported with AIDS during 2008.

Figure 30. AIDS: Rate by Age Group, Virginia, 2008



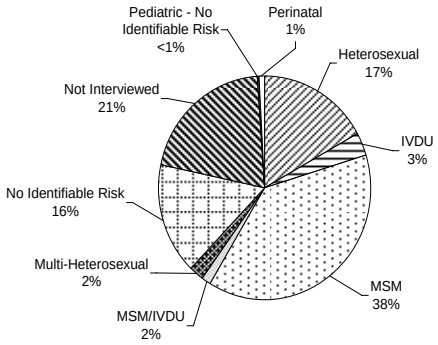
Similar to what has been observed for HIV, there are discrepancies in AIDS incidence by race and sex. The AIDS incidence rate in the black population (25.0 per 100,000) was eight times the rate in the white population (3.0 per 100,000), and nearly twice the rate in the "other" population (16.3 per 100,000). AIDS incidence in males was almost three times the rate in females (12.3 and 4.4 per 100,000, respectively) (Figure 31). In 2008, the central region had the highest incidence rate (14.9 per 100,000), followed by the northern region (9.0 per 100,000).

Figure 31. Comparison of the Rate of HIV Infections and AIDS Cases by Sex, Virginia, 2008



Men having sex with men (MSM) was the most common mode of transmission for AIDS and accounted for 38% of Virginia's cases in 2008. Among cases attributed to MSM, 63% were 25-39 years of age, and 50% were from the black population. Heterosexual contact was the mode of transmission for 17% of all AIDS cases, and 3% were attributed to intravenous drug use (Figure 32).

Figure 32. AIDS: Mode of Transmission, Virginia, 2008



Influenza

Agent: Influenza virus; Types A, B and (rarely) C cause human disease.
Mode of Transmission: Person-to-person primarily through inhalation of droplets released through coughing or sneezing.
Signs/Symptoms: Fever, headache, muscle pain, fatigue, sore throat and cough; influenza can also lead to pneumonia, especially in those with underlying medical conditions (e.g., lung or heart disease).
Prevention: Annual vaccination is the primary prevention strategy; antiviral medications are sometimes used with high-risk populations (e.g., nursing home residents) to prevent illness. Transmission may be reduced by frequent hand washing or using alcohol-based hand-sanitizers; avoidance of touching the eyes, nose, and mouth with contaminated hands; and covering the nose and mouth with a tissue or the bend of the elbow when coughing or sneezing.
Other Important Information: The influenza virus changes slightly from year to year (antigenic drift), making it necessary to prepare a new vaccine each year. Periodically, the virus will change to form a completely new subtype (antigenic shift) which can lead to pandemics.

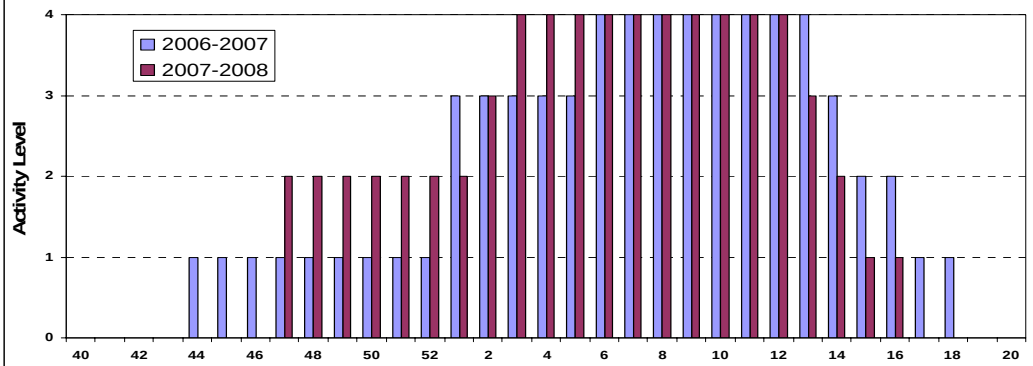
Influenza Surveillance

In Virginia, influenza activity generally begins to increase in November and starts to decrease in March or April, but VDH monitors influenza activity throughout the year. During the 2007-2008 season, information sources included information on patients presenting with influenza-like illness (ILI) at out-patient facilities, summary counts of individuals with influenza, positive laboratory findings for influenza, information from influenza outbreaks, and reports of influenza-associated deaths in the pediatric population. The data are used to determine weekly influenza activity levels, summarize the length and severity of the influenza season, and characterize circulating influenza types and subtypes.

Influenza-Like Illness (ILI) and Influenza Activity Levels

During the 2007-2008 season, VDH used patient visits for ILI to 73 hospital emergency departments and urgent care centers to monitor influenza activity. An ILI case is defined as any person with a fever and a cough or a sore throat, in the absence of another known cause of illness. Starting in July, six weeks of baseline data were collected to establish threshold levels. During the rest of the season, regions with ILI levels over their threshold were considered elevated. In combination with reports of laboratory-confirmed influenza and influenza-associated outbreaks, this information contributed to the determination of the overall activity level in the state. Each week, influenza activity was classified as one of five levels: no activity, sporadic, local, regional or widespread. During the 2007-2008 season, influenza activity was widespread from mid January through late March (Figure 33).

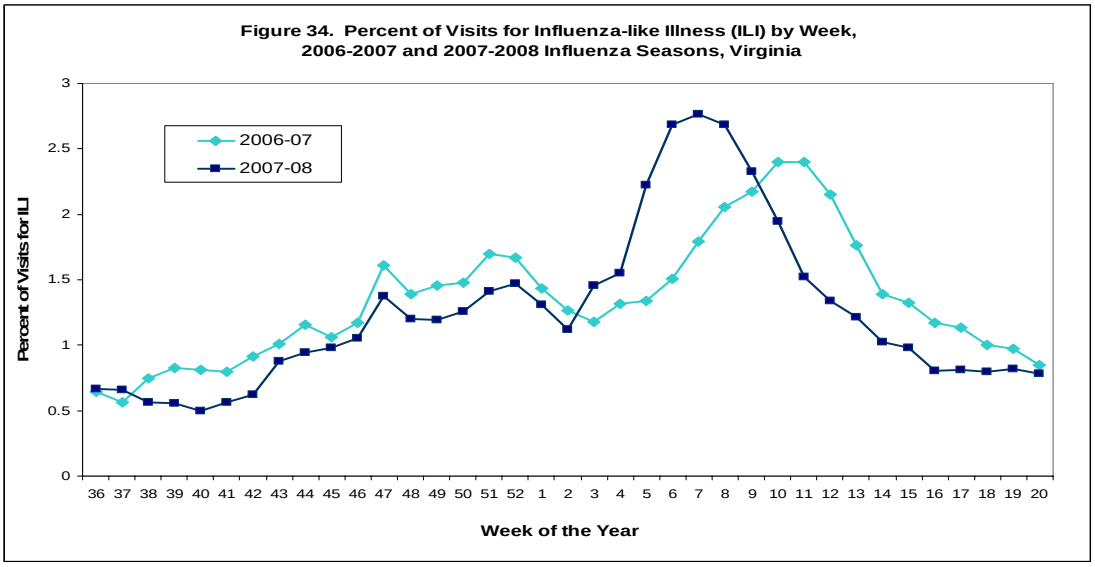
Figure 33. Comparison of Weekly Influenza Activity Levels in Virginia for the 2006-2007 and 2007-2008 Influenza Seasons: Based on Hospital ED and Urgent Care Data



Data are presented by week, with the first Sunday to Saturday week in January as week 1
Activity Levels: 0 = No Activity, 1 = Sporadic, 2 = Local, 3 = Regional, 4 = Widespread

ILI activity peaked during the week ending February 16, 2008 (week 7), with 2.8% of visits due to ILI. Significantly, this peak occurred approximately three weeks earlier than the peak in the previous year. Figure 34 compares ILI data for the two seasons based on emergency department and urgent care center data.

Figure 34. Percent of Visits for Influenza-like Illness (ILI) by Week, 2006-2007 and 2007-2008 Influenza Seasons, Virginia



Reports of Influenza Diagnoses

Summary counts of influenza cases were reported to local health departments by private practitioners, hospitals, schools and other facilities throughout the calendar year. The data are summary numbers and include results from rapid flu tests as well as confirmatory tests. This information is presented in tables at the front of the report. During 2008 24,580 cases of influenza were reported. This was a 192% increase from the 8,416 cases reported in 2007. A number of factors may have contributed to this increase, including a higher number of influenza outbreaks in 2008, more complete reporting and improved report handling practices. Similar to the other data sources, these reports suggest that influenza activity peaked in February during the 2007-2008 season.

Influenza Types and Subtypes in Virginia

Laboratory findings for influenza are used to monitor the seasonal emergence and decline of influenza throughout the state and to determine the subtypes that are circulating. As part of routine disease reporting, laboratories report positive influenza findings to VDH. In addition, influenza specimens are submitted to the Division of Consolidated Laboratory Services (DCLS) for speciation and to confirm outbreaks. Additional information on specimens from Virginia is obtained from the CDC's National Respiratory and Enteric Virus Surveillance System (NREVSS). Three laboratory testing procedures are considered sufficient for confirmation of influenza for surveillance purposes: DFA (direct fluorescent antibody), PCR (polymerase chain reaction), and viral culture.

During the 2007-2008 season, information on influenza type was available from 527 specimens with detectable influenza virus. Among them, 415 (79%) were type A and 112 (21%) were type B. Of the type A viruses reported, 310 (75%) were of unknown subtype, 96 (23%) were subtype A/H3, and 9 (2%) were subtype A/H1.

Outbreaks

A total of 55 influenza outbreaks were reported to the Virginia Department of Health during the 2007-2008 influenza season. In comparison, 6 were reported during the 2006-2007 season. Influenza was laboratory confirmed in 31 of the 2007-2008 season outbreaks and suspected in the remaining 24.

Among the outbreaks, 36 (65%) occurred in nursing homes or other long-term care facilities, 8 (15%) in assisted living facilities, 4 (7%) in colleges, universities or K-12 schools, and 7 (13%) in other facilities. Geographically, 11 outbreaks (20%) were reported from the central region, 17 (31%) from the eastern region, 4 (7%) from the northern region, 13 (24%) from the northwestern region and 10 (18%) from the southwestern region. The outbreaks ranged in size from 2 to 593 cases, with an average of 32 cases. The first outbreak was reported during the week ending November 27, 2007, and the last was reported during the week ending May 22, 2008.

Pediatric Deaths

Three influenza-associated pediatric deaths were reported to VDH during the 2007-2008 season. They involved a young school age child (5-12 years) from the eastern region, and a teenage child (13-17 years) and a preschool age child (0-4 years) from the southwest region. All three deaths occurred in February. Nationwide, CDC received a total of 72 reports of influenza-associated pediatric deaths during the 2007-2008 season.

Kawasaki Syndrome

Agent: Unknown – toxin or infectious agent suspected
Mode of Transmission: Unknown
Signs/Symptoms: High fever, rash, swelling of the hands and feet, irritability, conjunctivitis, swollen lymph nodes and inflammation of mouth, lips, or throat.
Prevention: Unknown
Other Important Information: Children less than five years of age make up approximately 80% of cases worldwide.

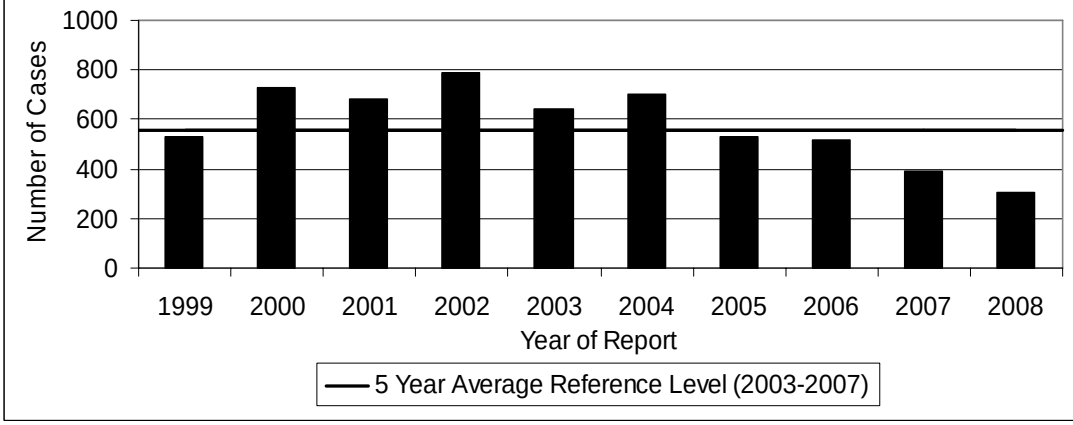
Three cases of Kawasaki syndrome were reported in Virginia during 2008. This is one more than the two cases reported in 2007, but well below the five year average of 10.8 annually. All cases were reported in male children less than ten years of age. Race was reported as white for two of the children, and unknown for the third child. Two cases were reported from the eastern region and one from the southwest. Illness onsets occurred in the first, second and fourth quarters of the year.

Lead - Elevated Blood Levels in Children

Agent: Lead (metal)
Mode of Transmission: Chewing objects painted with lead paint; ingesting contaminated dust, soil or water; or using glassware, healthcare products or folk remedies containing lead.
Signs/Symptoms: Even at low levels, lead in children can cause nervous system damage, learning disabilities, behavior problems, muscle weakness, decreased growth, hearing damage, or anemia.
Prevention: Avoid ingestion of lead-contaminated materials and use of lead-containing objects. Education of healthcare professionals and parents is important in reducing and detecting lead exposure.
Other Important Information: The primary source of lead for children is exposure to deteriorated paint in housing built before 1978. There is an increased awareness of new sources of lead exposures, including improper renovation of older homes; imported toys; candies popular among some ethnic groups; traditional Hispanic, Indian, and Middle Eastern folk remedies; and ceramics from foreign countries.

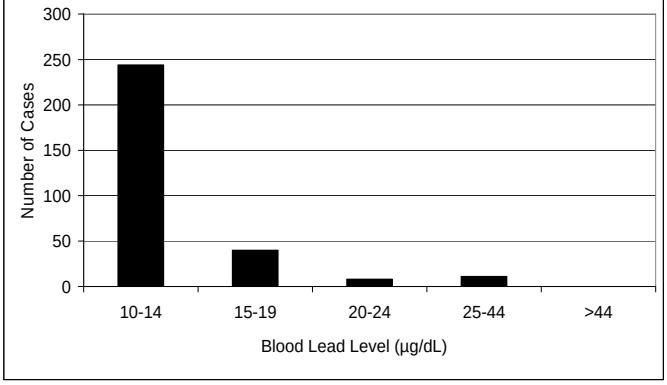
Virginia law requires reporting of elevated blood lead levels (≥10 µg/dL) in children age 15 years or younger. In 2008, there were 307 reported cases of elevated blood levels in children less than 16 years of age. This is a significant decrease (45%) from the five year average of 556.4 cases per year (Figure 35). This decrease in cases can partially be attributed to improved reporting of specimen type (e.g., capillary or venous) by physicians and laboratories. This has improved the ability to interpret test findings and has resulted in more accurate information on the number of children with confirmed elevated lead levels.

Figure 35. Elevated Blood Lead Levels in Children: Ten Year Trend, Virginia, 1999-2008



Blood lead levels in the 10-14 µg/dL range are above normal, but only require lead awareness education and follow-up monitoring. Blood lead levels in the 15-19 µg/dL range require nutritional and environmental education, as well as more frequent testing to ascertain if the blood lead level is increasing. Blood lead levels greater than 20 µg/dL require greater degrees of case management, the initiation of an environmental investigation to identify and eliminate lead hazards, and the possibility of medical intervention. Among children reported with elevated blood lead levels in 2008, 244 cases (79%) fell in the 10-14 µg/dL range, 40 cases (13%) fell in the 15-19 µg/dL range, 8 cases (3%) fell in the 20-24 µg/dL range, and 11 cases (4%) fell in the 25-44 µg/dL range. No child was reported with a confirmed lead level greater than 44 µg/dL (Figure 36).

Figure 36: Elevated Blood Lead Levels in Children: Range of Elevation, Virginia, 2008



The majority of elevated blood lead levels (90%) and the highest incidence rate occurred in 1-9 year olds (278 cases, 30.6 per 100,000). This was followed by infants (20.3 per 100,000) and 10-15 year olds (1.3 per 100,000). Fifty-three percent of reports were missing race data. Among reports with a race, the black population had an incidence rate seven times that of the white population (25.2 versus 3.6 per 100,000, respectively), while the "other" population had an

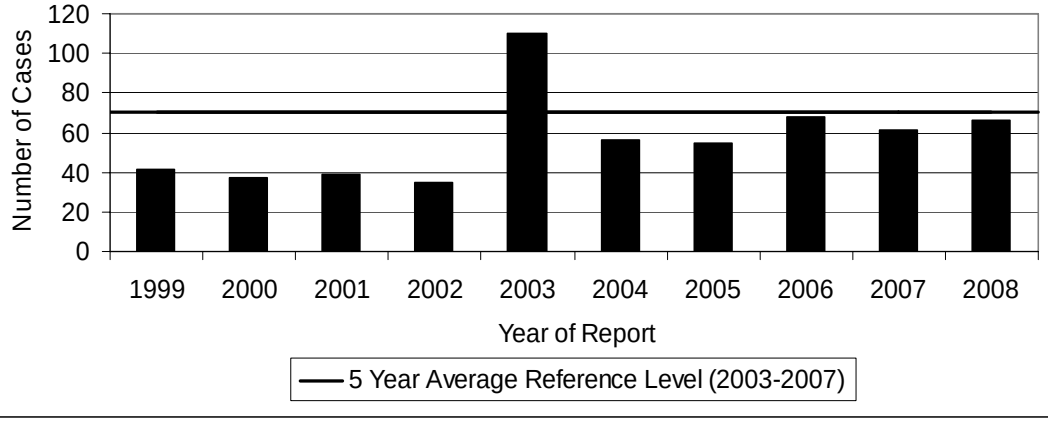
incidence rate of 7.9 per 100,000. The male population had a slightly higher incidence rate than the female population (19.4 and 18.6 per 100,000, respectively). The central region had the highest incidence rate of elevated blood lead levels in children, with 41.0 per 100,000. This was followed by the southwest, eastern and northwest regions with incidence rates ranging from 20.5 to 14.6 per 100,000. The northern region had the lowest rate at 8.4 per 100,000.

Legionellosis

Agent: *Legionella* species (bacteria); most infections in the United States are caused by *Legionella pneumophila*
Mode of Transmission: Inhalation of contaminated aerosols (e.g., water sprays, mists).
Signs/Symptoms: Infection with *L. pneumophila* causes two distinct illnesses: Legionnaires' disease, characterized by fever, muscle aches, headaches, malaise, cough, and pneumonia; and Pontiac fever, a mild influenza-like illness without pneumonia. Pontiac fever and Legionnaires' disease are referred to as "legionellosis", separately or together.
Prevention: For outbreaks, disinfection of contaminated water sources by chlorination or superheating of water from 160° - 170°F, and appropriate mechanical cleaning.
Other Important Information: Legionellosis is more common among people who smoke or have chronic medical conditions.

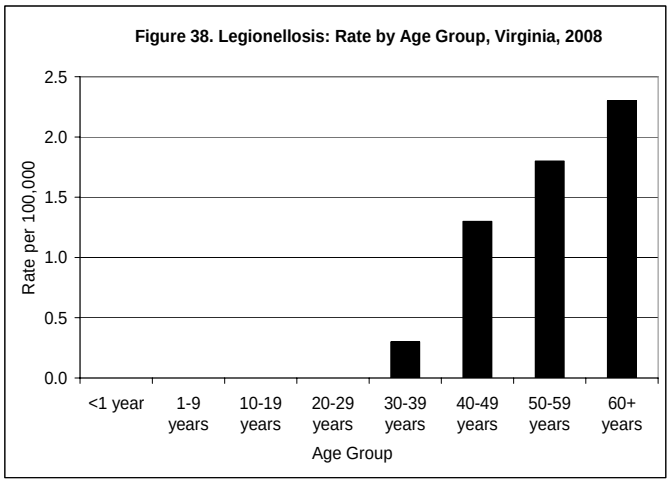
Sixty-six cases of legionellosis were reported in Virginia during 2008. This is an 8% increase from the 61 cases reported in 2007, and a 6% decrease from the five year average of 70 cases per year (Figure 37). This is consistent with a national pattern which showed a sudden increase in legionellosis cases in 2003, and higher incidence in the post-2003 period than in the pre-2003 period.

Figure 37. Legionellosis: Ten Year Trend, Virginia, 1999-2008



The highest incidence occurred among adults age 60 and over (2.3 per 100,000) and no cases were reported among persons younger than 30 years of age (Figure 38). By race, incidence was similar for the black and white populations (0.8 and 0.7 per 100,000, respectively). Males had a higher incidence than females (1.1 and 0.6 per 100,000, respectively). Regionally, the northwest

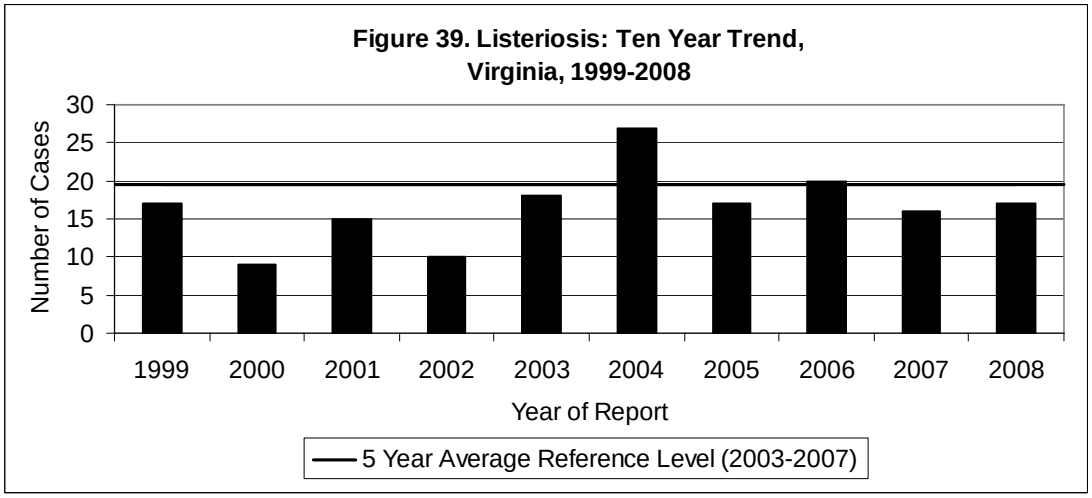
region had the highest incidence (1.3 per 100,000), followed closely by the southwest and central regions (1.1 per 100,000 each). Cases were fairly evenly distributed throughout the year. One outbreak attributed to *Legionella pneumophila* was reported in 2008. The outbreak was associated with the water system of an assisted living facility and involved two residents of the facility. Among cases reported in 2008, nine deaths were attributed to legionellosis and occurred in persons ranging in age from 36 to 91 years. Six were male and three were female.



Listeriosis

Agent: *Listeria monocytogenes* (bacteria)
Mode of Transmission: Ingestion of contaminated foods or beverages.
Signs/Symptoms: Typically, fever, headache, nausea, and vomiting. Infection can lead to serious disease, including shock and inflammation of the brain and the fluid surrounding the brain and spinal cord. Miscarriage may occur.
Prevention: Safe food preparation (e.g., thoroughly cooking raw food from animals and washing vegetables) and avoidance of high risk foods (e.g., unpasteurized dairy products).
Other Important Information: Persons at higher risk include pregnant women and persons with weakened immune systems.

The 17 cases of listeriosis reported in Virginia during 2008 represent a 13% decrease from the five year average of 19.6 cases per year (Figure 39). The 60 year and older age group had the highest number of cases (8 cases, 0.6 per 100,000), but the highest rate occurred among infants (4 cases, 3.9 per 100,000). The other age groups had consistently lower incidence, with rates between 0.0 and 0.2 per 100,000. Race information was missing from 35% of reported cases.

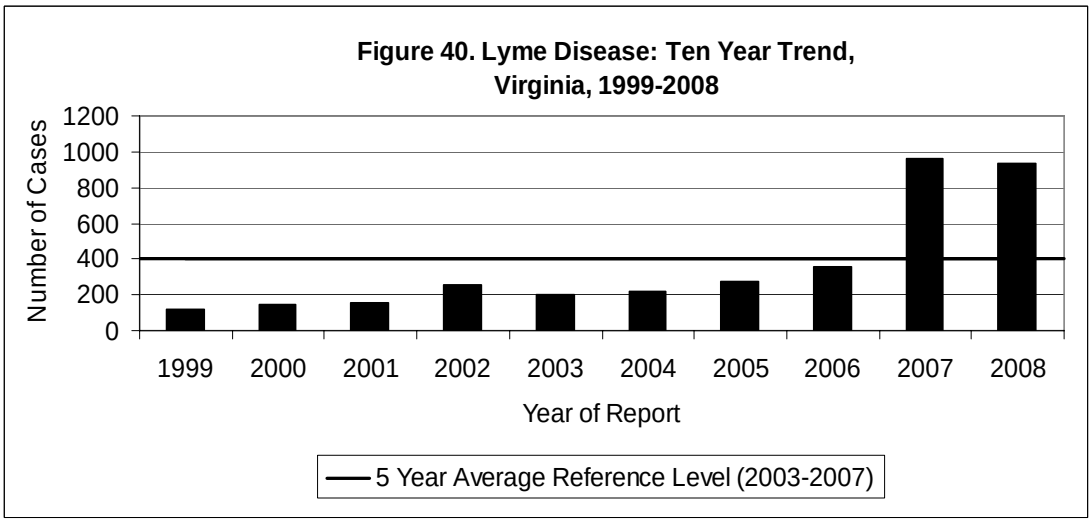


Among cases with race reported, incidence rates were similar in the black and white populations (0.2 and 0.1 per 100,000, respectively). The rate was slightly higher for females than for males (0.3 and 0.1 per 100,000, respectively). Incidence rates in the regions ranged from 0.1 to 0.4 per 100,000, with the highest rate in the southwest region. Cases occurred throughout the year, with peak activity (41%) occurring in the third quarter. The two cases reported as having meningitis due to listeriosis were both in the 60 year and over age group. Six of the reported cases were pregnancy-related, including two pregnant females and four neonates less than one month old. Among cases reported in 2008, one death was attributed to listeriosis in an adult female.

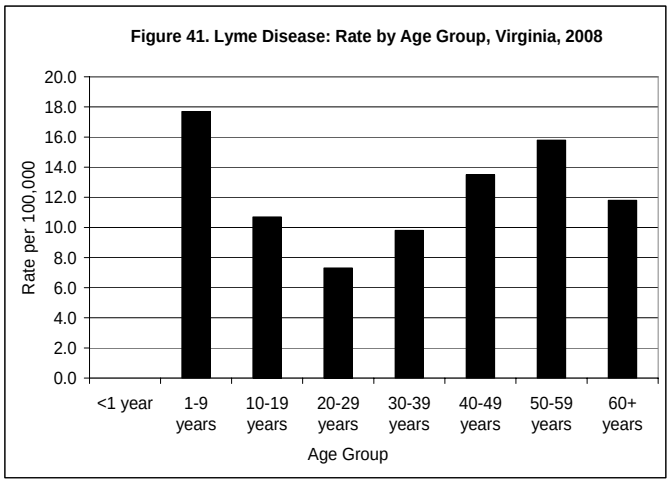
Lyme Disease

Agent: *Borrelia burgdorferi* (spirochete bacteria)
Mode of Transmission: Transmitted to humans through the bite of infected nymphal or adult blacklegged ticks (formerly known as deer ticks). No other tick species plays a role in Lyme disease transmission. Infected ticks must bite a human and remain attached while feeding for a minimum of 36 hours to be able to transmit the Lyme disease pathogen.
Signs/Symptoms: Initial symptoms include fever, headache, fatigue, joint pains, chills and a characteristic "bulls-eye" skin rash called erythema migrans, or EM rash. If untreated, infection can affect joints, heart, and nervous system.
Prevention: Avoid being bitten by ticks. Avoid likely tick habitats such as humid forest environments with dense undergrowth and/or heavy leaf litter, and tall weeds along forest margins, tree lines, forest trails and forest clearings. When in tick-prone habitats, wear light-colored clothing with pants legs tucked into socks. Apply permethrin-based repellents to clothing (shoes, pants, and socks). Apply DEET, Picaridin, or Oil of Lemon Eucalyptus-based repellents to exposed areas of skin (legs and arms) prior to entering tick habitats. Thoroughly check your body for ticks after visiting tick-prone habitats and remove attached ticks as soon as possible.
Other Important Information: Lyme disease is diagnosed based on symptoms, physical findings (e.g., rash), and the possibility of prolonged exposure to feeding by an infected blacklegged tick. The EM rash is the only physical manifestation that is distinctive enough to allow a definitive diagnosis without laboratory testing. The EM rash causes little or no sensation, and may be overlooked or absent in up to 30% of persons with Lyme disease.

The 933 cases reported in 2008 were similar to the 959 cases reported in 2007, but represent a 133% increase from the five year average of 401.6 cases per year (Figure 40). The dramatic increase in the number of reported cases of Lyme disease is likely due to a large increase in Lyme disease occurrence, but may also have resulted from increased case follow-up by local health departments and the introduction of electronic laboratory reporting of Lyme-related findings. The increased disease incidence occurred primarily in suburbanized areas of Virginia. Suburbanization may enhance the environment for white-tailed deer (which are crucial for tick reproduction) and white-footed mice (which play an important role in transmission of the Lyme disease agent to ticks). Deer hunting activity is minimal in suburbanized forest areas, bringing the resident human population into greater contact with the tick vector's natural habitat.

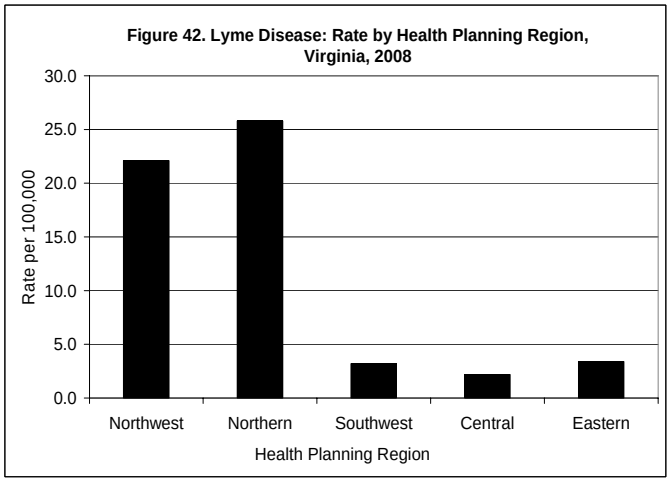


There was a bimodal peak in cases by age group, with the highest incidence in children aged 1 to 9 years (17.7 cases per 100,000 population), followed by adults aged 50 to 59 years (15.8 cases per 100,000) (Figure 41). This bimodal age distribution for Lyme disease is very typical of what is observed in Lyme-endemic regions of the United States.



Among cases for which race was recorded, the white population had the highest incidence (9.0 cases per 100,000), followed by the "other" population (3.8 per 100,000), and the black population (0.7 per 100,000). Racial differences may in part be related to differences in access to healthcare for diagnosis, in exposure to suburban and rural tick habitats, and in possibly easier detection of the EM rash in individuals with lighter skin pigmentation. The incidence rate was almost identical in females and males (11.9 and 12.0 per 100,000, respectively).

Cases were reported from all regions of the state; however, the incidence of Lyme disease was highest in the northern region (25.8 cases per 100,000) and northwest region (22.1 per 100,000). Rates in other regions ranged from 2.2 to 3.4 per 100,000 (Figure 42). Although Lyme disease cases were reported in every quarter during 2008, there was a seasonal pattern, with the majority of cases (75%) reported from April to September and a peak occurrence



in June and July. The seasonality of Lyme disease is strongly correlated to the period when nymphal black-legged ticks, the primary vectors of Lyme disease, are active. This period usually occurs from April through mid-July.

Lymphogranuloma Venereum

Agent: Specific immunotypes of the bacteria *Chlamydia trachomatis*
Mode of Transmission: Sexually transmitted through contact with the lesions of an infected person.
Signs/Symptoms: Small, painless lesions on the penis or vulva, which usually go unnoticed. Fever, chills, headache, anorexia, and joint pain may also be present.
Prevention: Safer sexual practices.
Other Important Information: This disease rarely occurs in most developed countries, but in September 2004, the Netherlands reported as many as 92 cases among men who have sex with men.

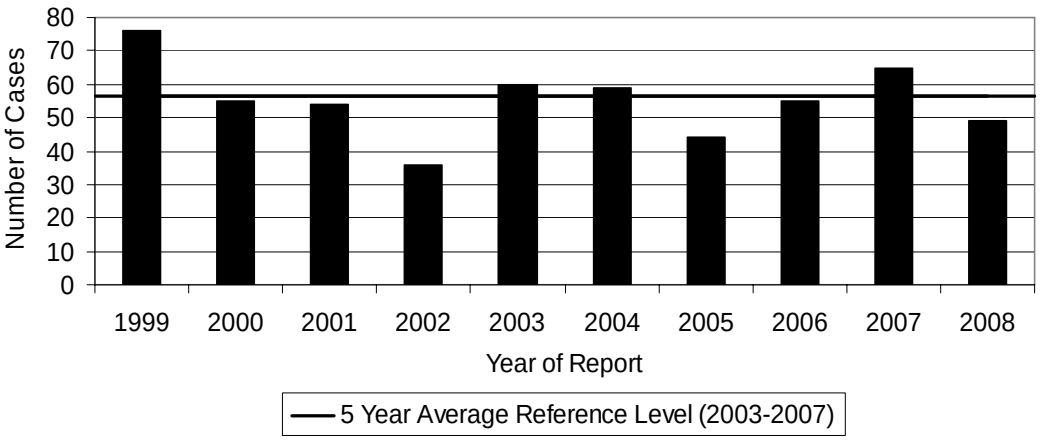
No cases of lymphogranuloma venereum were reported in Virginia in 2008. The last two reported cases occurred in 2005.

Malaria

Agent(s): Four different species of protozoan parasites: *Plasmodium falciparum, P. vivax, P. ovale,* and *P. malariae*.
Mode of Transmission: Malaria is transmitted through the bite of an infected, female *Anopheles* mosquito. Malaria may also be transmitted from infected mother to child during pregnancy or delivery, by blood transfusion or through transplanted organs from infected donors. Humans and certain *Anopheles* mosquito species are the only natural reservoirs for malaria
Signs/Symptoms: Typically, high fevers, shaking, chills, sweats, severe headache, muscle and joint pain, anorexia, nausea, flu-like illness, anemia and an enlarged spleen. *P. falciparum* infections may progress to severe malaria if not treated promptly; symptoms include acute alteration of brain structure and function, severe anemia, jaundice, renal failure and coma.
Prevention: Appropriate medication for malaria prophylaxis should be taken by travelers to malaria endemic countries. Anopheline mosquitoes bite only at dusk, dawn or during night-time hours and tend to enter buildings. Avoid mosquito bites at these times by staying in structures with adequate screening and equipped with bed nets, and when outdoors, by wearing longsleeved, loose fitting, light-colored clothing and mosquito repellents.
Other Important Information: Almost all infections reported in Virginia occur in individuals who were infected in other countries. Although malaria is not endemic to Virginia, it may be brought to this region by travelers or immigrants with dormant or unapparent infections. Malaria might also arrive in Virginia carried by infected mosquitoes transported in aircraft arriving from foreign destinations. There are two potential mosquito vectors for malaria in Virginia: *Anopheles quadrimaculatus* and *An. Punctipennis*.

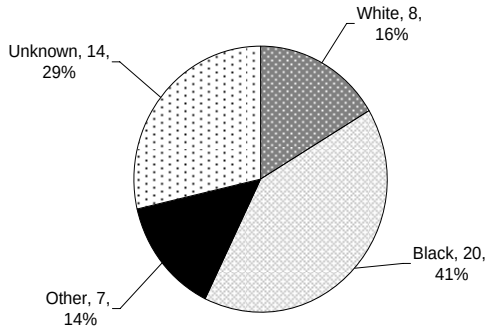
In 2008, 49 cases of malaria were reported in Virginia. This is a 25% decrease from the 65 cases reported in 2007, and a 13% decrease from the five year average of 56.6 cases per year (Figure 43).

Figure 43. Malaria: Ten Year Trend, Virginia, 1999-2008



Incidence rates were highest for the 30-39 year age group (1.6 per 100,000), followed by the 40-49 year age group (0.9 per 100,000). Race was missing for 29% of reported malaria cases (Figure 44). Among cases for which race was reported, more than half occurred in the black population; however, the incidence rate among the black and "other" populations was the same (1.3 per 100,000), and was thirteen times the incidence in the white population (0.1 per 100,000). Incidence in males was more than twice the rate among females (0.9 and 0.4 per 100,000, respectively). Among regions, the northern region had the highest incidence rate (1.4 per 100,000). Rates in other regions ranged between 0.3 and 0.7 per 100,000, and no cases were reported from the southwest region. No deaths due to malaria were reported in 2008.

Figure 44. Malaria: Proportion of Cases by Race, Virginia, 2008



All cases reported a history of travel outside of the United States within the four years prior to disease onset. Among cases where specific travel information was provided, more than half of the infections occurred in persons arriving from or returning from Africa. Information on malaria prophylaxis usage was obtained for 43 cases (88%). Of these, 17 (35%) reported receiving prophylaxis for malaria, although six of these cases reported missing at least one dose. The largest proportion of 2008 cases (41%) occurred in the third quarter of the year, which is a pattern historically seen in Virginia. However, cases of malaria are usually acquired outside of this country and any seasonality would be related to travel patterns to endemic countries where the disease is more common.

Measles

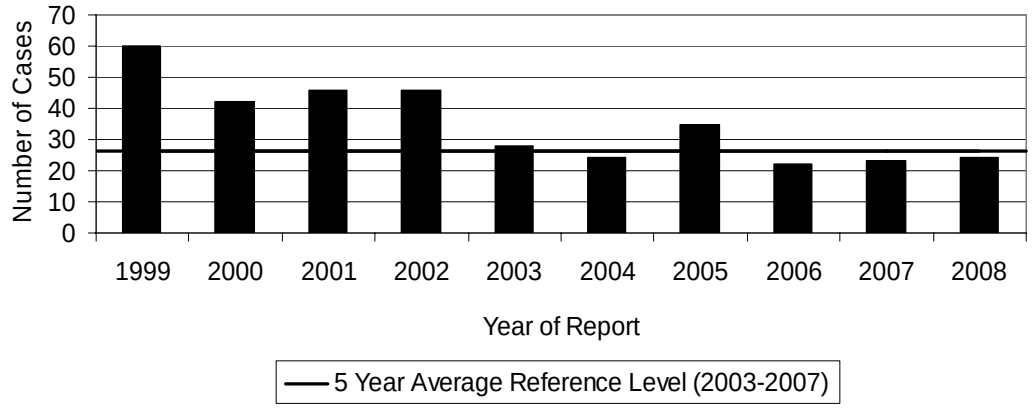
Agent: Measles virus
Mode of Transmission: Primarily person-to-person by inhalation of respiratory droplets or direct contact with nasal or throat secretions of infected people; however, airborne transmission via aerosolized droplet nuclei has been documented.
Signs/Symptoms: Fever, cough, conjunctivitis, coryza, and a typical rash on the third to seventh day after onset of symptoms.
Prevention: Measles vaccine should be given as part of the measles, mumps, and rubella (MMR) series beginning at 12-15 months of age followed by a second dose at age 4-6 years.
Other Important Information: Measles is highly communicable, with >90% secondary attack rates among susceptible people. Although measles is no longer endemic in the United States, infections acquired in other countries continue to cause occasional limited transmission of measles.

One case of measles was reported in Virginia during 2008 in a female child from the northern region. This measles case is linked to international travel and the disease was acquired out of the country. The last reported case in Virginia occurred in 2001.

Meningococcal Disease

Agent: *Neisseria meningitidis* (bacteria)
Mode of Transmission: Transmission occurs through contact with respiratory droplets from the nose or throat of infected people (e.g., through coughing or kissing).
Signs/Symptoms: Sudden onset of fever, headache, stiff neck, vomiting, and photophobia (fear of light). A rash may also be present.
Prevention: Vaccination protects against two of the three types of infection that are common in the United States.
Other Important Information: Crowding, exposure to tobacco smoke, and coexisting respiratory tract infections increase the risk of disease. Five to ten percent of people carry *N. meningitidis* in their nose without having any symptoms of disease; those who develop disease are usually infected by a carrier who does not have symptoms.

Figure 45. Meningococcal Disease: Ten Year Trend, Virginia, 1999-2008

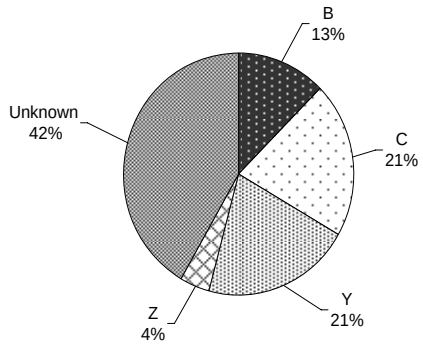


During 2008, 24 cases of meningococcal disease were reported in Virginia. This is a slight increase from the 23 cases reported in 2007, but a 9% decrease from the five year average of 26.4 cases per year (Figure 45).

The highest rate of infection occurred in the infant population (3.9 per 100,000). Rates in the other age groups ranged from 0.0 to 0.6 per 100,000. Among cases where race was reported, the rate in the black population was twice the rate in the white population (0.4 and 0.2 per 100,000, respectively). The incidence rate was the same for males and females (0.3 per 100,000).

Of the fourteen cases for which a serogroup was identified, three were group B, five were group C, five were group Y and one was group Z (Figure 46).

Figure 46. Meningococcal Serogroups, Virginia, 2008



The highest incidence rate was observed in the northwest region (0.6 per 100,000), with rates in the other regions ranging from 0.1 to 0.5 per 100,000. By onset date, the largest proportion (49%) of cases occurred in the first quarter of the year, and the smallest proportion (13%) occurred during the third quarter. Among 2008 cases, two deaths were reported in individuals whose infections developed into meningitis. One death occurred in a male in the 20–29 year age group, and the other occurred in a female in the 60 year and older age group.

Methicillin-Resistant *Staphylococcus aureus* Infection (MRSA)

See *Staphylococcus aureus* Infection, Invasive, Methicillin-Resistant (MRSA)

Monkeypox

Agent: Monkeypox virus (genus *Orthopoxvirus*)
Mode of Transmission: From the bite of or direct contact with lesions or body fluids of an infected animal. Though less common, infection can be transmitted from person to person by respiratory droplets or by direct contact with body fluids of an infected person, or with virus-contaminated objects such as bedding.
Signs/Symptoms: Similar to smallpox, though more mild. Initial symptoms include fever, headache, backache, sore throat, cough and swollen lymph nodes. Three days after fever onset, a rash develops.
Prevention: Avoid contact with exotic or wild mammals that originate from areas where monkeypox has occurred.

Other Important Information: In 2003, a monkeypox outbreak was reported in the United States among persons exposed to native prairie dogs that had contact with imported African rodents.

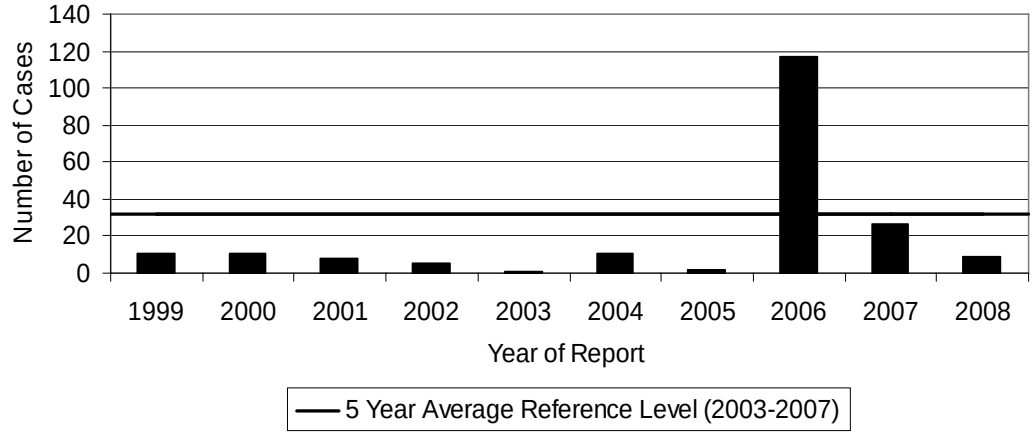
Monkeypox became a reportable disease in Virginia in 2004. No cases of monkeypox have ever been reported in Virginia.

Mumps

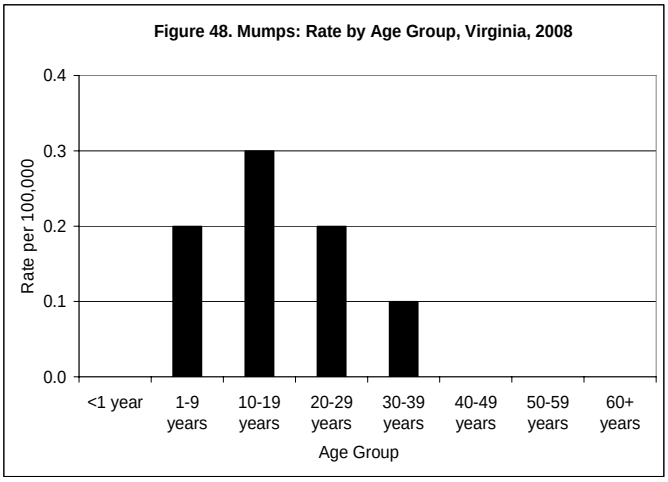
Agent: Mumps (virus)
Mode of Transmission: Person-to-person through respiratory droplets, as well as through direct contact with saliva of an infected person.
Signs/Symptoms: Fever, swelling and tenderness of one or more salivary glands. In children age less than five years, 40%-50% of cases are associated with respiratory symptoms. As many as 20% of mumps infections are asymptomatic.
Prevention: Vaccination, preferably administered as MMR vaccine, beginning at age 12 months. Two doses of mumps-containing vaccine are recommended for school-aged children, healthcare workers, international travelers, and college students.

The 9 cases of mumps reported in 2008 were a 67% decrease from the 27 cases reported in 2007, and a 71% decrease from the five-year average of 31.6 cases per year (Figure 47). However, these nine cases are in-line with the number of reported cases from years prior to 2006. The unusually high number of cases reported in 2006 was due primarily to elevated awareness of mumps following a large multi-state outbreak in the mid-western part of the country, coupled with a university-based outbreak in Virginia.

Figure 47. Mumps: Ten Year Trend, Virginia, 1999-2008



Of the 9 cases reported in 2008, the highest incidence rate was seen in the 10-19 year age group (0.3 per 100,000). Incidence rates for young children and adults to age 39 years were similar (Figure 48). No cases were reported in infants or adults forty years and older. Rates were similar among those of "other" races and whites (0.2 and 0.1 per 100,000, respectively). No cases were reported from the black population. Incidence among males was twice the rate among females (0.2 and 0.1 per 100,000). No cases were reported in the central or eastern regions. Among the northwest, northern and southwest regions, the rate was the same (0.2 per 100,000). Although the occurrence of mumps peaks predominantly in late winter and early spring, illness occurred in all four quarters of 2008.



Ophthalmia Neonatorum

Agent: *Chlamydia trachomatis* (bacteria) or *Neisseria gonorrhoeae* (bacteria), though *C. trachomatis* is most common.
Mode of Transmission: Infants are exposed to the organism in the birth canal during childbirth.
Signs/Symptoms: Redness or swelling of one or both eyes beginning five to fourteen days after birth.
Prevention: Screening of all pregnant women for chlamydia and gonorrhea infection, followed with appropriate treatment for infected women and their partner(s).

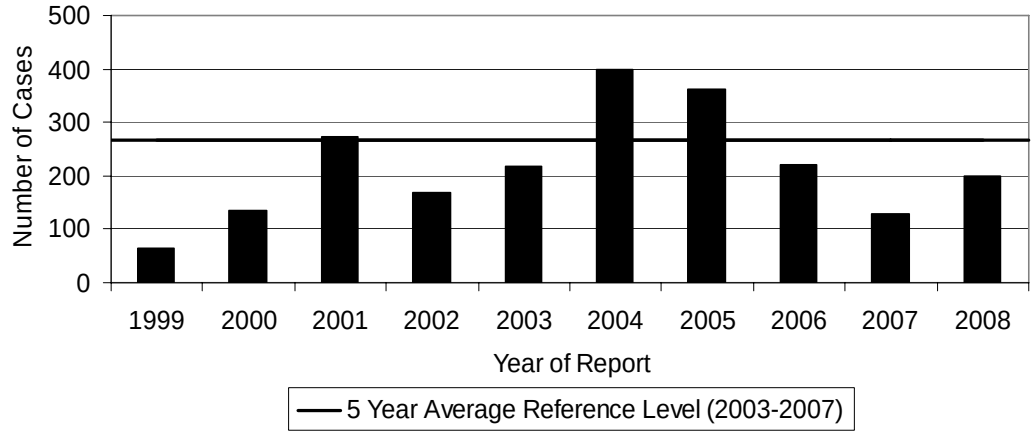
Ten infants were reported with ophthalmia neonatorum in 2008. Eight were caused by *C. trachomatis* and two by *Neisseria gonorrhoeae.*

Pertussis

Agent: *Bordetella pertussis* (bacteria)
Mode of Transmission: Contact with droplet respiratory secretions from infected patients.
Signs/Symptoms: Insidious cough that progresses to paroxysmal coughing (severe, sequential coughs with difficulty inhaling) and may be accompanied by post-cough vomiting.
Prevention: Vaccination beginning at 2 months of age.
Other Important Information: In vaccinated populations, the case-fatality rate is low. When deaths occur, they are generally in children less than six months old who are too young to have received the vaccine.

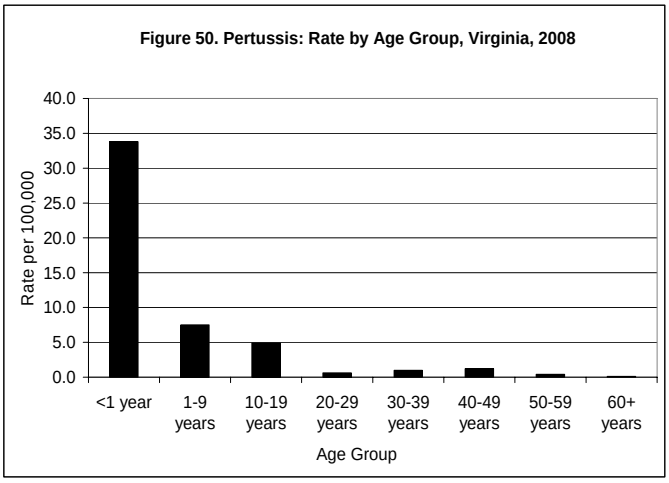
In 2008, 198 cases of pertussis were reported in Virginia. This is a 55% increase from the 128 cases reported in 2007 and a 26% decrease from the five year average of 266.2 per year (Figure 49). Cases of pertussis typically occur in waves, with peak numbers appearing every 3-4 years. A high of 400 cases was reported in 2004, followed by a downward trend occurring through 2007. This general downward trend in pertussis cases from 2004 to 2007 and the increase from 2007 to 2008 were also noted nationally.

Figure 49. Pertussis: Ten Year Trend, Virginia, 1999-2008



In Virginia, pertussis cases were reported from every age group. Those less than one year of age had the highest incidence rate, with 33.8 cases per 100,000. This was followed by the 1-9 and 10-19 year age groups, with 7.5 and 4.9 per 100,000, respectively (Figure 50). The incidence rate in the white population was more than three times the rate in the black population (2.2 and 0.7 per 100,000, respectively), while the rate in the "other" population was 0.2 per 100,000. Females had a slightly higher incidence rate than males (2.9 and 2.2 per 100,000, respectively).

Figure 50. Pertussis: Rate by Age Group, Virginia, 2008



Among regions, the northwest region had the highest incidence rate (3.4 per 100,000). This was followed by the eastern and northern regions, with 2.8 per 100,000 in each region. The remaining regions ranged from 1.1 to 2.5 per 100,000. The largest proportion of cases (60%) occurred in the third and fourth quarters of the year. Nine outbreaks were reported in 2008. The largest outbreak occurred in the northwest region during the fourth quarter and involved 16 cases. Among the cases reported in 2008, one death was attributed to pertussis in a female infant.

Plague

Agent: *Yersinia pestis* (bacteria)
Mode of Transmission: Transmitted to humans through the bite of infected fleas or through bites or scratches from infected animals (e.g., cats). If the disease attacks the lungs, it may be spread from person to person by droplets released when coughing.
Signs/Symptoms: Fever, chills, nausea, headache and body aches. Specific types of plague also lead to other symptoms, such as swollen lymph nodes ("buboes"), bloodstream infections, and pneumonia.
Prevention: In areas where plague occurs, travelers should avoid contact with rodents and fleas and avoid handling stray animals. Persons with plague that results in pneumonia should be isolated until 48 hours after antibiotics have been started.
Other Important Information: Fewer than 20 people in the United States are diagnosed with plague every year. Plague is considered to be one of the agents that could be used for bioterrorism because the disease can be spread from person to person and would cause increased illness and death in the population if used as a weapon.

No cases of plague have been reported in Virginia since the nineteenth century.

Poliomyelitis

Agent: Poliovirus
Mode of Transmission: Person-to-person through ingestion of contaminated food or direct contact with fecal material from infected people.
Signs/Symptoms: Ten percent of infections will develop into a non-specific syndrome with fever, malaise, headache, nausea, and vomiting. Flaccid paralysis occurs in 1% of poliovirus infections.
Prevention: Vaccination beginning at 2 months of age.
Other Important Information: Polio eradication programs have led to the elimination of the disease in the Western Hemisphere; however, at the beginning of 2008, four countries still had endemic polio: Afghanistan, India, Nigeria, and Pakistan.

The last reported case of poliomyelitis in Virginia occurred in 1978.

Psittacosis

Agent: *Chlamydophila psittaci* (formerly known as *Chlamydia psittaci*) (bacteria)
Mode of Transmission: Transmission occurs when the bacteria are inhaled from aerosolized dried feces, from respiratory tract secretions, or from dust from feathers of infected birds.
Signs/Symptoms: Most commonly fever, headache, weakness, loss of appetite, muscle aches, chills, sore throat, and cough. Symptoms can present as a mild flu-like illness or can be very severe, especially in older persons.

Prevention: Proper design and management of facilities that raise and sell birds and use of protective clothing (e.g., wearing of masks or respirators and gloves) by those working with birds. Bird cages should be cleaned regularly with disinfectants and the contents of the cage should be disposed of properly.
Other Important Information: Birds may or may not show signs of illness when infected. Birds in the parrot family (e.g., cockatiels, parakeets, parrots, macaws) are most commonly responsible for human infection, but any bird species can be infected and, thus, be a source for human disease.

No cases of psittacosis were reported in Virginia during 2008. One case was reported in 2003 and prior to that, one case was reported in 1998.

Q Fever

Agent: *Coxiella burnetii* (bacteria)
Mode of Transmission: Inhalation of air contaminated with dried placental material, birth fluids, or excreta of infected animals; direct exposure to infected animals or tissues; exposure to contaminated material, such as wool, straw, fertilizer, or laundry.
Signs/Symptoms: High fever, severe headache, malaise, muscle aches, confusion, non-productive cough, nausea, diarrhea, abdominal pain, and/or chest pain.
Prevention: Appropriate disposal of potentially infectious tissues and proper hygiene when handling animal birth material.
Other Important Information: Q fever is classified by the CDC as a potential bioterrorism agent because it could easily be disseminated and result in a moderate amount of illness.

Two cases of Q fever were reported in Virginia in 2008. Both cases occurred in adult white females. One case was associated with exposure to the still-birth of a calf prior to onset of symptoms. The other case had no obvious exposure. The five year average of reported cases in Virginia is 2.0 cases per year.

Rabies

Agent: Rabies virus, a rhabdovirus of the genus *Lyssavirus*.
Mode of Transmission: Most commonly transmitted through the bite of an infected animal, but may be transmitted through any method by which virus-infected saliva or central nervous system tissue enters the body.
Signs/Symptoms: Vary widely, but often include an initial headache, fever and apprehension which progresses to paralysis, spasms of the muscles used for swallowing, delirium and convulsions. Once symptoms appear, rabies is almost invariably fatal.
Prevention: Important prevention methods include vaccinating cats and dogs, eliminating stray animals, and avoiding handling wildlife. A pre-exposure vaccine should be given to people at

high risk of infection (e.g., veterinarians and laboratorians working with rabies virus). Post-exposure vaccine should be administered to anyone possibly exposed to a rabid animal.
Other Important Information: The main reservoir of rabies in the United States is wildlife. In most other countries, the main reservoir is dogs.

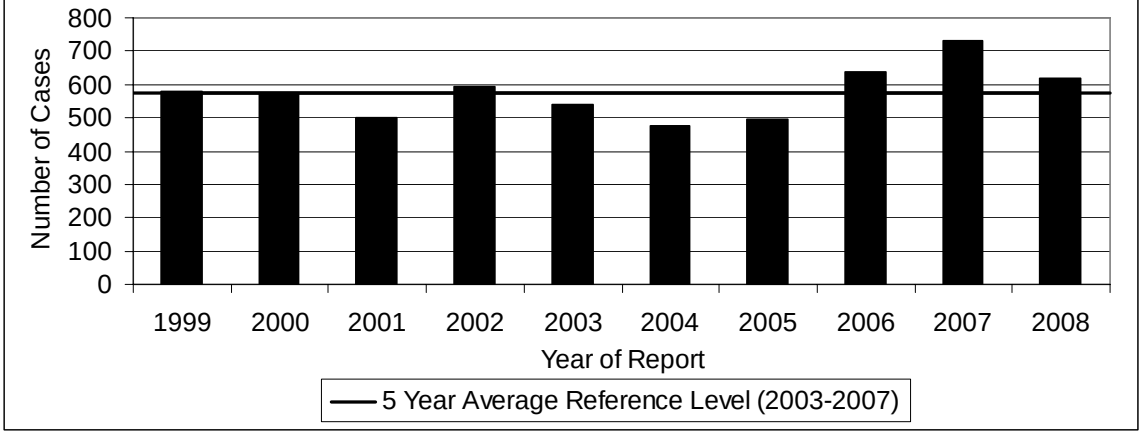
Human

No human cases of rabies were reported in Virginia during 2008. The last human case occurred in 2003 in an adult male from the northern region that was infected with a raccoon rabies variant. Though no specific exposure event could be determined, the case had lived and worked in an area with endemic raccoon rabies. This was the first instance in the United States of a human infected with raccoon-variant rabies.

Animal

A 15% decrease occurred in the number of animals testing positive for rabies, down from 730 in 2007 to 620 in 2008 (Figure 51). The proportion of tested animals that were positive decreased slightly from 16% in the previous year to 15% in 2008. The Central Shenandoah Health District reported the most positive animals (44 positives, slightly more than 7% of Virginia's positives), followed by the Rappahannock/Rapidan Health District (42 positives, 7%) and Fairfax Health District (39 positives, 6%).

Figure 51. Rabies in Animals: Ten Year Trend, Virginia, 1999-2008



Among the 4,168 specimens sent for analysis, the most commonly tested animals were cats (1,070), bats (758), raccoons (702), dogs (603), skunks (241), foxes (187) and opossums (143) (See Table 8) While skunks had the highest positivity rate (65%), followed by raccoons (44%), and foxes (42%), nearly half of all rabid animals identified in Virginia in 2008 were raccoons..

Table 8. Animals Testing Positive for Rabies by Species, Virginia, 2008

Animal Species	Number of Animals Tested	Animals Positive	
		Number	Percent
Bat	758	22	3%
Bobcat	1	0	0%
Cat	1,070	33	3%
Cow	62	6	10%
Dog	603	4	1%
Fox	187	79	42%
Goat	26	2	8%
Groundhog	122	5	4%
Horse	53	2	4%
Opossum	143	1	1%
Raccoon	702	309	44%
Sheep	5	0	0%
Skunk	241	157	65%
Other	195	0	0%
TOTAL	4,168	620	15%

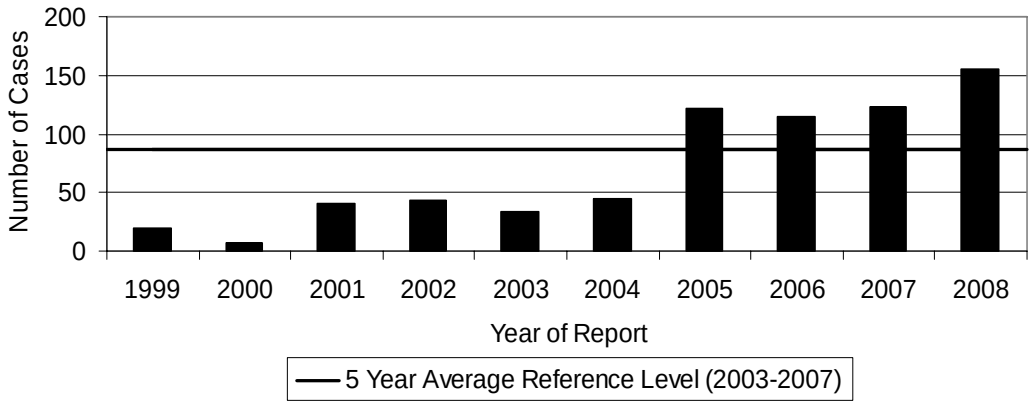
Rocky Mountain Spotted Fever

Agent: *Rickettsia rickettsi* (bacteria)
Mode of Transmission: Rocky Mountain spotted fever (RMSF) is transmitted to humans by the bite of an infected American dog tick. Ticks must be attached while feeding for at least 4 to 6 hours to transmit the infection.
Signs/Symptoms: Persons infected with RMSF may have a sudden onset of fever, severe headache, muscle pain, nausea and vomiting. Three to five days after onset of illness, a rash may develop that starts on the hands and feet then spreads to the rest of the body. The rash is seen in only 40% to 60% of cases. Fatalities from RMSF typically begin to occur on the fifth day of infection.
Prevention: Avoid being bitten by ticks. Avoid American dog tick-prone habitats such as open fields with tall brush and weeds, old fields with early succession forest growth, or brushy vegetation along forest margins and trails. Wear light-colored clothing with pants legs tucked into socks, apply a permethrin-based repellant to clothing (e.g., a clothing treatment to shoes, socks and pants) and an approved repellent to exposed skin. Thoroughly check your body for ticks after visiting tick-prone habitats and remove attached ticks as soon as possible. American dog ticks are frequently found feeding on the neck or head, or in hair at the base of the scalp.
Other Important Information: RMSF can be difficult to diagnose in the early stages, but without early intervention, may be fatal in up to 30% of untreated patients. Although the national case

fatality rates ranged from 3% to 8% of all reported cases in the United States in the period from 1970 to 1982, national case fatality rates have declined in recent years to <1% of cases reported from 2001 to 2007.

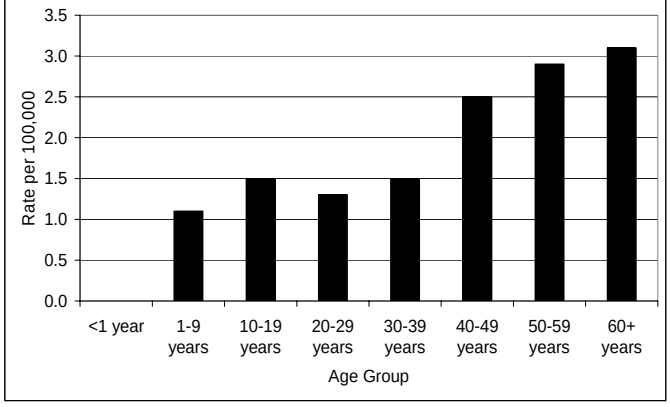
In 2008, 155 cases of RMSF were reported in Virginia. This is an increase of 26% from the 123 cases reported in 2007, and a 77% increase from the five year average of 87.4 cases per year (Figure 52). The recent increase in the number of reported cases may be attributed to the fact that more local health department resources are being devoted to following up on laboratory reports of RMSF, but it may also represent an actual increase in RMSF activity. The increased number of RMSF cases since 2004 has not been accompanied by an increase in human fatalities. Among the 513 human cases reported in Virginia from 2005 to 2008, no deaths were attributed to RMSF.

Figure 52. Rocky Mountain Spotted Fever: Ten Year Trend, Virginia, 1999-2008

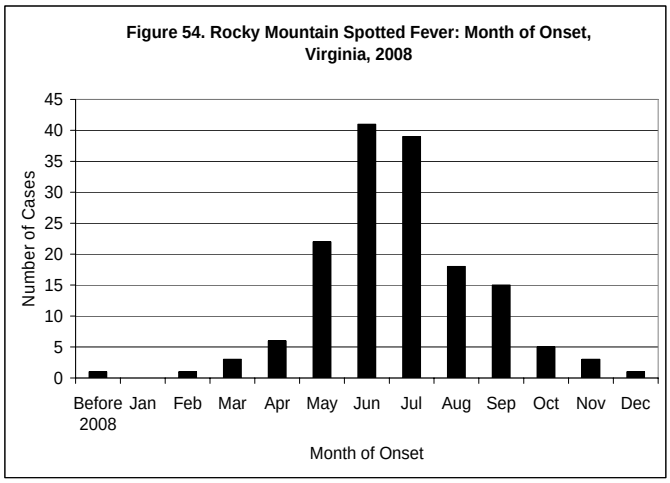


Incidence rates were highest in persons aged 40 years and older (2.5 to 3.1 per 100,000) (Figure 53). Although previous national studies have shown a higher incidence for RMSF occurring in children < 10 years of age, more recent data indicate a shift in pattern to a higher rate among adults aged 40-64 years.

Figure 53. Rocky Mountain Spotted Fever: Rate by Age Group, Virginia, 2008



Incidence in the white population (1.4 per 100,000) was more than twice the incidence in the black population (0.6 per 100,000.) Males had a slightly higher rate than females (2.1 and 1.8 per 100,000, respectively). The central and southwest regions of Virginia had the highest incidence (3.2 and 2.5 per 100,000, respectively.) The rates in other regions ranged from 1.1 to 1.9 per 100,000. The majority of cases (90%) had onsets from April through September (Figure 54) with the highest number of cases occurring in June and July. These months are consistent with the activity peaks for tick species in Virginia.



Rubella

Agent: Rubella virus
Mode of Transmission: Person-to-person through contact with nose and throat secretions from infected people. It may also be transmitted from mother to child during pregnancy, causing congenital rubella syndrome in the infant.
Signs/Symptoms: Fever and rash, with frequent occurrences of arthralgia, arthritis, and lymphadenopathy.
Prevention: Vaccination, preferably administered as MMR vaccine, beginning at 12 months of age.
Other Important Information: Since 2001 approximately half of the reported cases of rubella in the U.S. have occurred among persons born outside of the country, most of whom were born outside of the Western Hemisphere. In 2004, a panel convened by the Centers for Disease Control and Prevention concluded that sustained transmission of rubella has been interrupted and rubella is no longer endemic in the U.S.

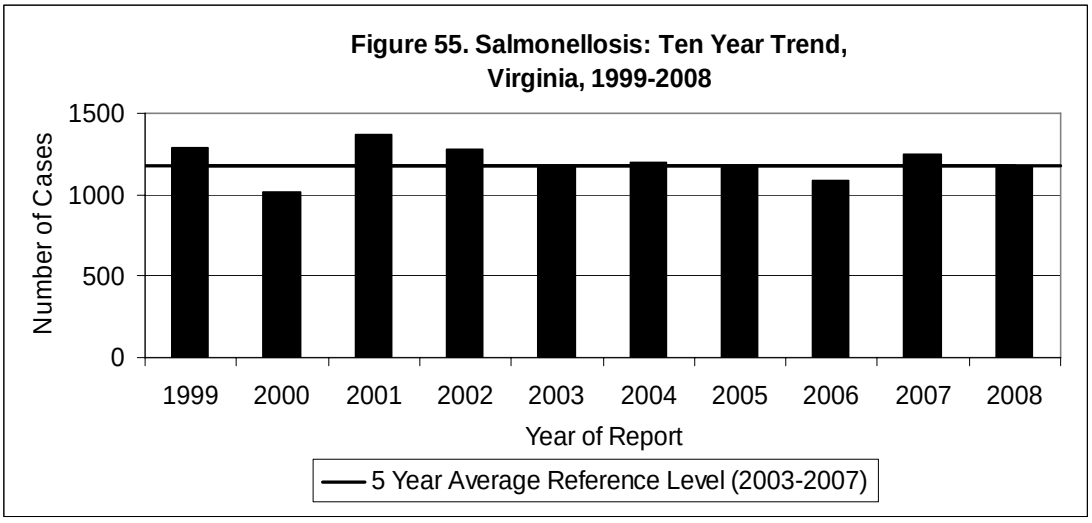
No cases of rubella were reported in Virginia during 2008. The last Virginia case was reported in 1998.

Salmonellosis

Agent: *Salmonella* (bacteria)
Mode of Transmission: Eating contaminated food or drinking contaminated water. Infected persons can spread the bacteria by not washing their hands after going to the bathroom and then handling food that other people will eat. This disease may also be acquired by having direct contact with feces from an infected person or animal and then transferring the bacteria to the mouth from the hands.
Signs/Symptoms: Sudden onset of headache, fever, abdominal pain, diarrhea and sometimes vomiting. Dehydration, especially in older adults and young children, can be a severe complication.
Prevention: Proper sanitation methods for food preparation including preventing cross-contamination of food preparation surfaces, sanitation of water supplies, proper hand hygiene, sanitary sewage disposal, exclusion of infected people from handling food or providing healthcare, prohibiting the sale of pet turtles and restricting the sale of other reptiles for pets. Eggs and other foods of animal origin should be cooked thoroughly.
Other Important Information: The incidence rate is highest among infants and young children. Mortality rates are higher in infants, older adults and people with immunosuppressive conditions.

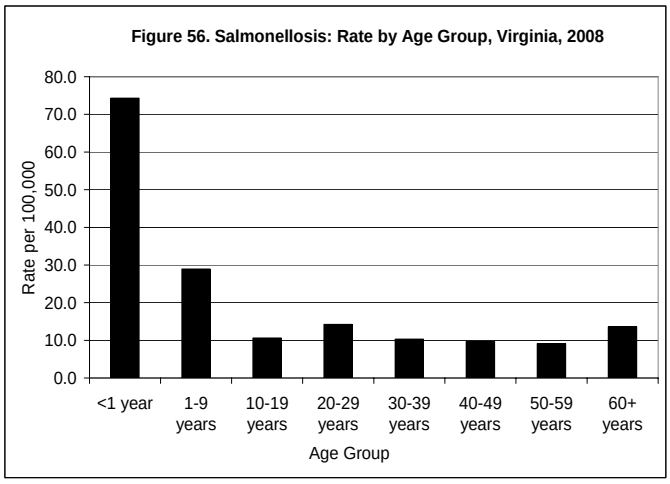
The 1,165 cases of salmonellosis reported in 2008 represent a 7% decrease from the 1,249 cases reported in 2007, and are very similar to the five year average of 1,176.2 cases per year (Figure 55).

Figure 55. Salmonellosis: Ten Year Trend, Virginia, 1999-2008



By far, the highest incidence rate was observed in the <1 year age group (74.3 per 100,000), followed by the 1-9 year age group (28.9 per 100,000) (Figure 56). Other age groups all showed similar rates of infection (between 9.1 and 14.2 per 100,000). Although information on race was missing for 45% of the cases, where race was known incidence was slightly higher in the white population (8.9 per 100,000) than the black and "other" populations (7.0 and 6.2 per 100,000, respectively). Rates were slightly higher among females than males (15.8 and 14.0 per 100,000, respectively).

The northwest region had the highest incidence rate with 18.9 cases per 100,000. However, the rates in all other regions were only slightly lower, ranging from 12.9 to 16.1 per 100,000. While salmonellosis occurred throughout the year, there was a notable increase (61% of the cases) in the second and third quarters, with increases in June, July, and August (Figure 57). Fourteen salmonellosis outbreaks were reported during 2008. Eleven of these outbreaks were foodborne and the number of cases per outbreak ranged from one to ninety-nine. One outbreak involved two cases and was associated with an environmental exposure in a college laboratory. Another outbreak was a statewide exposure attributed to contact with reptiles and involved 14 cases. An additional outbreak involved person-to-person exposure at a nursing home among 3 residents. Of all the outbreaks, four were multi-state in which Virginians were involved. Serogroups identified in the outbreaks included Typhimurium, Enteritidis, Heidelberg, Hartford, Saintpaul, Senftenberg, and Ealing. Among reported cases from 2008, one death in an adult female was attributed to salmonellosis. For Virginia salmonellosis cases reported in 2008, the most commonly identified serotype was *Salmonella* ser. Typhimurium (Table 9).



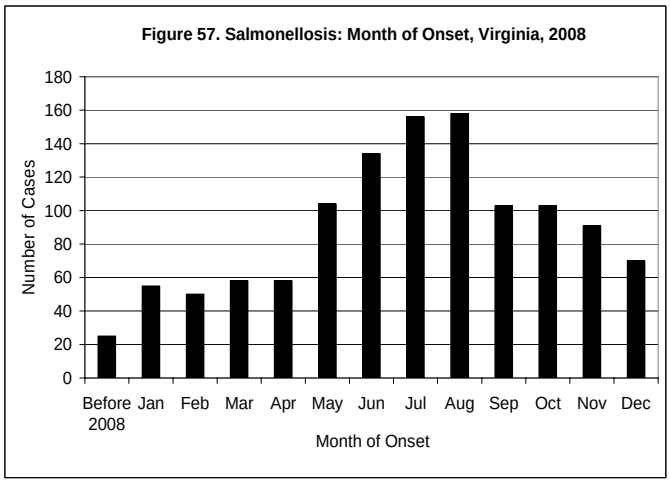


Table 9. Number and Percent of *Salmonella* Infections by Serotype, Virginia, 2008

Serotype Causing Infection	Number	Percent		Serotype Causing Infection	Number	Percent
S. ser. Typhimurium	262	22.4		*S.* ser. Saintpaul	35	3.0
S. ser. Enteritidis	207	17.7		*S.* ser. Hartford	19	1.6
S. ser. Newport	88	7.5		*S.* ser. Braenderup	16	1.4
S. ser. Heidelberg	50	4.3		All Others	219	18.7
S. ser. Javiana	38	3.2		Unspecified	234	20.0
				TOTAL*	1,168	

*The total number of serotypes (1,168) is larger than the total number of *Salmonella* infections (1,165) because a person may be infected with more than one serotype.

Severe Acute Respiratory Syndrome (SARS)

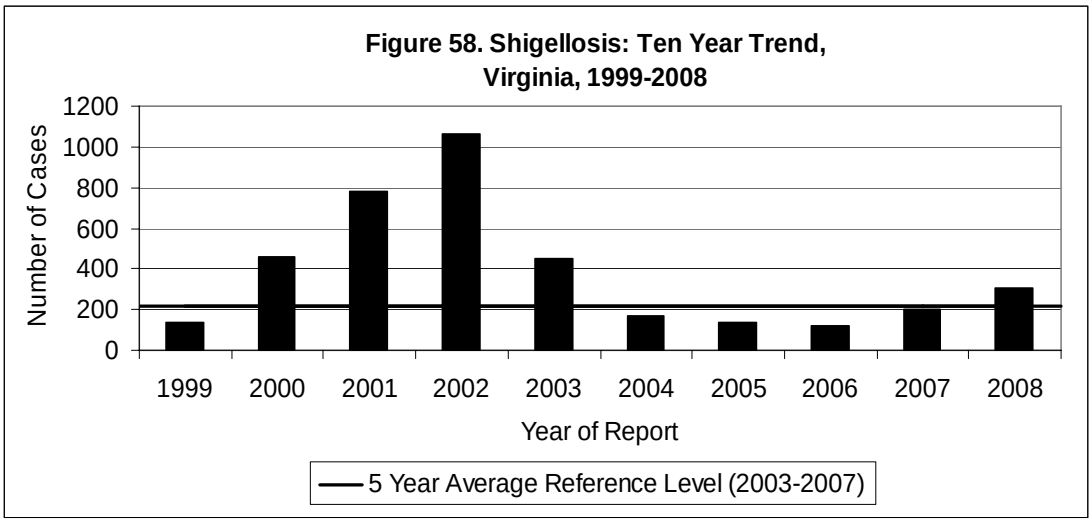
Agent: Severe acute respiratory syndrome-associated coronavirus (SARS-CoV)
Mode of Transmission: Most likely transmitted from person to person through coughing and sneezing; spreading can also occur by touching a contaminated surface or object and then touching the mouth, nose, or eyes. It is possible that SARS-CoV might be spread more broadly through the air or by other routes that are not yet known.
Signs/Symptoms: Weakness, muscle pain, and fever followed by respiratory symptoms, such as cough and shortness of breath. Diarrhea may occur.
Prevention: Factors that may reduce transmission include frequent hand washing, avoidance of touching the eyes, nose, and mouth with contaminated hands, and covering the nose and mouth with a tissue when coughing or sneezing.
Other Important Information: Major outbreaks of SARS occurred between November 2002 and July 2003 in Canada, China, Singapore and Vietnam. In the United States, eight people had laboratory evidence of SARS-CoV infection. SARS is thought to have originated in China.

No cases of SARS were reported in Virginia during 2008. Previously, one case of SARS was confirmed in Virginia during the international outbreaks in 2003. The case occurred in a female over age 50 who had traveled to Taiwan, Malaysia and Singapore in the four weeks before onset of symptoms. Her exposure most likely occurred in a Singapore hospital, where she had direct contact with patients being treated for SARS. Active global surveillance for SARS has detected no person-to-person transmission of SARS since July 2003.

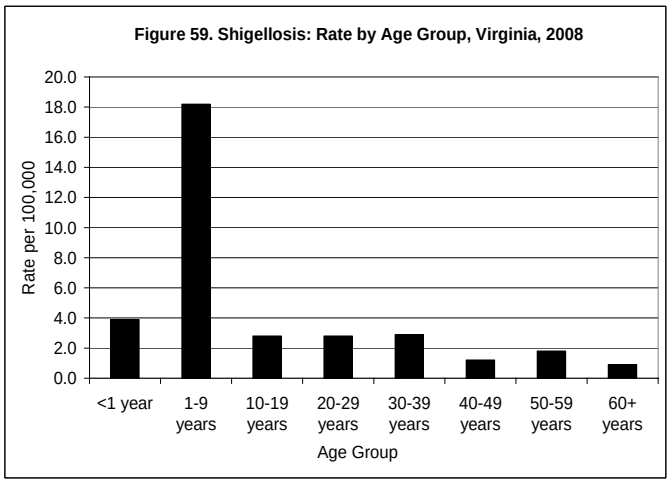
Shigellosis

Agent: *Shigella* (bacteria)
Mode of Transmission: The primary mode is fecal-oral via person-to-person contact. Additionally, contact with a contaminated inanimate object, ingestion of contaminated food or water and sexual contact may spread the disease.
Signs/Symptoms: Characterized by diarrhea ranging from watery and loose to mucoid with or without blood, fever and sometimes nausea, vomiting, abdominal cramps and painful straining at stool or urination. Mild and asymptomatic infections can occur.
Prevention: Strict attention to hand hygiene is essential to limit transmission. Additional control measures include improved sanitation, chlorination of drinking water, proper cooking and storage of food, the exclusion of infected persons as food handlers and measures to decrease contamination of food by houseflies.

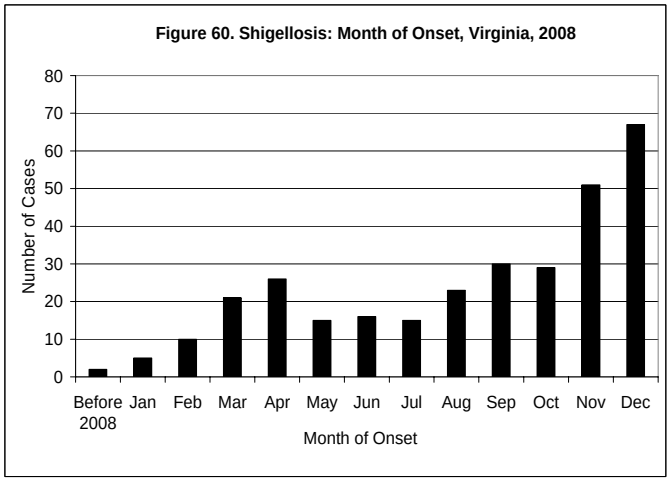
During 2008, 310 cases of shigellosis were reported in Virginia. This is a 55% increase from the 200 cases reported in 2007, and a 45% increase from the five year average of 214.4 cases per year (Figure 58).



The 1-9 year age group had the highest number of cases with 165 reported infections. The highest incidence rate was also in the 1-9 age group (18.2 per 100,000), followed by the <1 year age group with a rate of 3.9 per 100,000. The other age groups had rates between 0.9 and 2.9 per 100,000 (Figure 59). Race data were missing for 37% of reported cases. Among cases that included race information, the incidence rate in the black population (7.9 per 100,000) was more than six times the rate in the white population (1.2 per 100,000), and more than nine times the rate of the "other" population (0.9 per 100,000). This racial disparity was also seen nationally. The CDC summary data for 2007 reported the rate for the black population was more than four times the rate for the white population. Females had a slightly higher incidence rate than males (4.3 and 3.5 per 100,000, respectively).



Among regions, the central region had the highest incidence rate (9.5 per 100,000). This was followed by the eastern and northern regions with 4.5 and 4.4 per 100,000, respectively. The other regions had rates below 2.5 per 100,000. A seasonal trend was observed, with 64% of cases occurring from August through December (Figure 60). Five shigellosis outbreaks were identified during the year. All occurred in a daycare setting or school. Three of the five outbreaks were reported



from the central region and contributed to that region having the highest incidence in the state. The number of cases per outbreak ranged from six to fifty-three and the occurrence of each outbreak was a factor in the increases seen in March-April, August-October, and November-December. Among cases reported in 2008, one death was attributed to shigellosis and occurred in a male child.

Smallpox

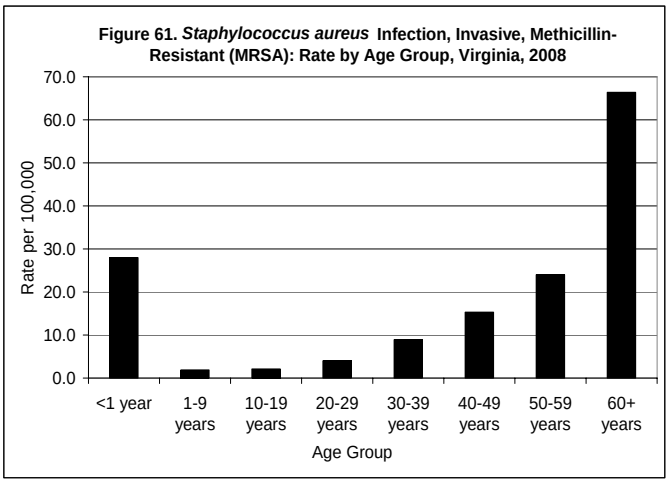
Agent: Variola virus
Mode of Transmission: Spread from person to person through contact with respiratory droplets, airborne particles (rare), and skin lesions of an infected person. Smallpox can also be transmitted through contact with contaminated clothing or bedding.
Signs/Symptoms: Sudden onset of fever, headache, weakness and exhaustion followed by development of a rash that first appears on the face and extremities.
Prevention: Routine vaccinations among the American public stopped in 1972.
Other Important Information: The last case of smallpox in the United States was in 1949; the last naturally occurring case in the world was in Somalia in 1977. Smallpox is considered to be one of the agents that could be used for bioterrorism because the disease can be spread from person to person and would cause increased illness and death in the population if used as a weapon.

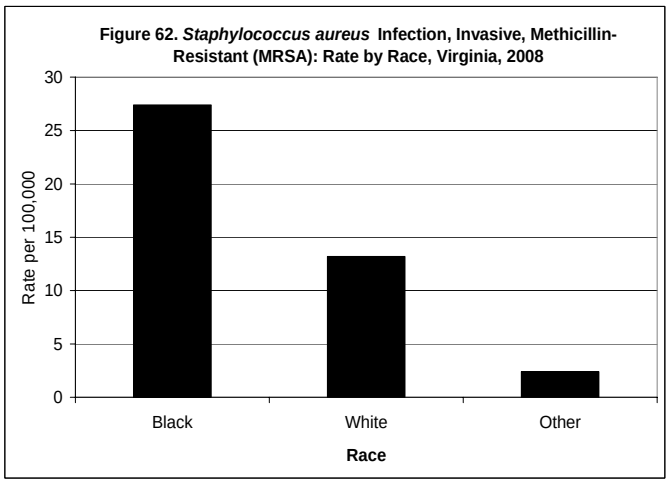
The last case of smallpox in Virginia occurred in 1944.

Staphylococcus aureus Infection, Invasive, Methicillin-Resistant (MRSA)

Agent: *Staphylococcus aureus* (bacteria) that has developed resistance to the class of beta-lactam antibiotics including penicillin, cloxacillin, oxacillin, nafcillin, and methicillin, as well as cephalosporins and carbapenems.
Mode of Transmission: Person-to-person via direct contact with colonized skin or skin lesions of an infected person, or by indirect contact with contaminated personal items or surfaces. Invasive infections occur when the bacteria penetrate to normally-sterile sites.
Signs/Symptoms: Invasive infections may affect the blood, bone, lung, and lining of the brain and spinal cord and may cause fever, difficulty breathing, chills, pain and other syndrome-specific signs and symptoms. Non-invasive skin and soft tissue infections most commonly cause swelling, tenderness, and redness and can manifest as abscesses, boils and other pus-filled lesions.
Prevention: Appropriate wound care; infection control techniques and practices such as the use of central line device 'bundles.'
Other Important Information: Only invasive MRSA infections are required to be reported in Virginia and only laboratories are required to report. Asymptomatic colonization and infections from non-sterile sites (e.g., skin and soft tissue) are not reportable. Reporting of this condition was implemented through Emergency Regulation and became effective on October 26, 2007.

During the approximately nine-week reporting time frame in 2007, 253 cases of MRSA infection were reported. In 2008, the first full reporting year, 1,524 cases were reported in Virginia. The highest incidence occurred in the 60 year and older age group (66.4 per 100,000), followed by infants (28.0 per 100,000) (Figure 61). Among the remaining age groups, there was an incremental increase in rates as age increased, ranging from 1.9 to 24.0 per 100,000. Incidence in the black population (27.4 per 100,000) was more than twice the rate in the white population (13.2 per 100,000), and more than 11 times the rate in the "other" population (2.4 per 100,000) (Figure 62). Incidence was higher in males than in females (22.8 and 16.3 per 100,000, respectively). By region, the central region had the highest incidence (32.7 per 100,000), while the other regions had rates ranging from 9.2 to 27.3 per 100,000. One MRSA outbreak was reported in 2008. The outbreak occurred among six members of a school athletic team through person-to-person or contaminated surface contact. Fifty-three (3%) of the 1,524 individuals with invasive MRSA infection reported in 2008 died from these infections. Forty-four (83%) of these fatal cases were in adults aged 60 years or older.





Staphylococcus aureus Infection, Vancomycin-Intermediate (VISA) or Vancomycin-Resistant (VRSA)

Agent: *Staphylococcus aureus* (bacteria) that has developed intermediate or complete resistance to the antibiotic vancomycin, based on susceptibility testing.
Mode of Transmission: Person-to-person spread through direct contact or through contact with contaminated materials or surfaces.
Signs/Symptoms: Depends on site of infection (e.g., skin, bone, urinary or respiratory tract). Infection may develop into toxic shock syndrome (see Toxic Shock Syndrome section). Asymptomatic colonization can occur.
Prevention: Appropriate use of antibiotics to treat infections, good hand hygiene, and proper cleaning of contaminated surfaces.

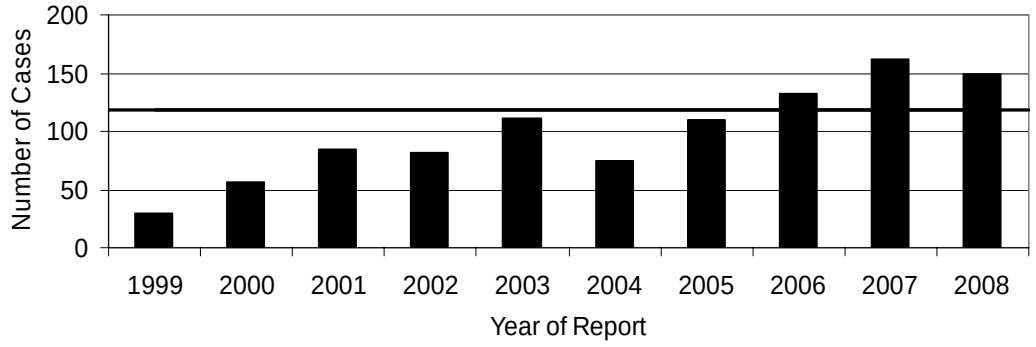
No cases of VISA or VRSA infection were reported in Virginia in 2008. The first reported case of VISA infection in Virginia occurred in 2007. The case occurred in a female in the 60 years or older age group from the eastern region of the state. The condition resulted in death.

Streptococcal Disease, Group A, Invasive

Agent: *Streptococcus pyogenes* (bacteria)
Mode of Transmission: Person-to-person through direct contact with mucus from the nose or throat of persons who are infected or through contact with infected wounds or sores.
Signs/Symptoms: Fever, dizziness, confusion and severe pain, swelling, redness and heat at wound site. Rarely, a flat red rash occurs over large areas of the body.
Prevention: Prompt identification and treatment of cases and temporary exclusion of infected healthcare employees from work for the first 24 hours of antibiotic therapy. Keep wounds clean and seek medical care at signs of infection.
Other Important Information: The two most severe group A streptococcal invasive infections are necrotizing fasciitis (NF) and streptococcal toxic shock syndrome (STSS). NF infections present with severe pain and rapid destruction of tissue. STSS infections are characterized by shock and rapid organ failure.

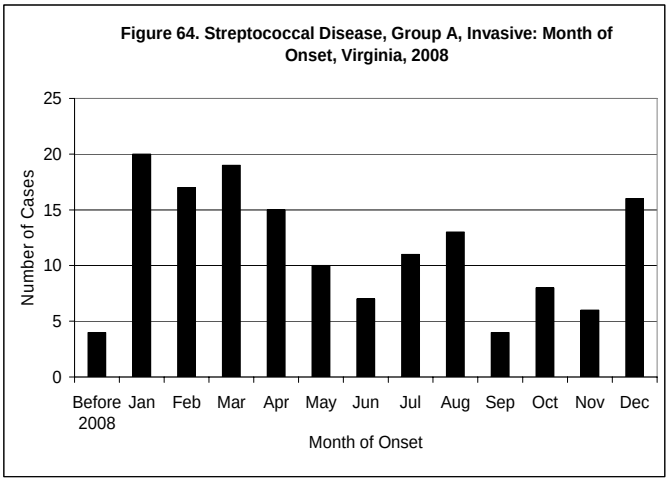
During 2008, 150 cases of invasive group A streptococcal (GAS) disease were reported in Virginia. This is a 7% decrease from the 162 cases reported in 2007, and a 27% increase above the five year average of 117.8 cases per year (Figure 63).

Figure 63. Streptococcal Disease, Group A, Invasive: Ten Year Trend, Virginia, 1999-2008



The highest incidence occurred in infants (6.8 per 100,000). This was followed by the 60 year and older age group (4.3 per 100,000). The other age groups had rates between 0.3 and 2.3 per 100,000. Race information was missing for 29% of reported cases. Among cases for which race was reported, the rate in the white population (1.5 per 100,000) was slightly higher than the rate in the black population (1.2 per 100,000), and was more than three times the rate of the "other" population (0.4 per 100,000). Females had slightly higher incidence than males (2.0 and 1.8 per

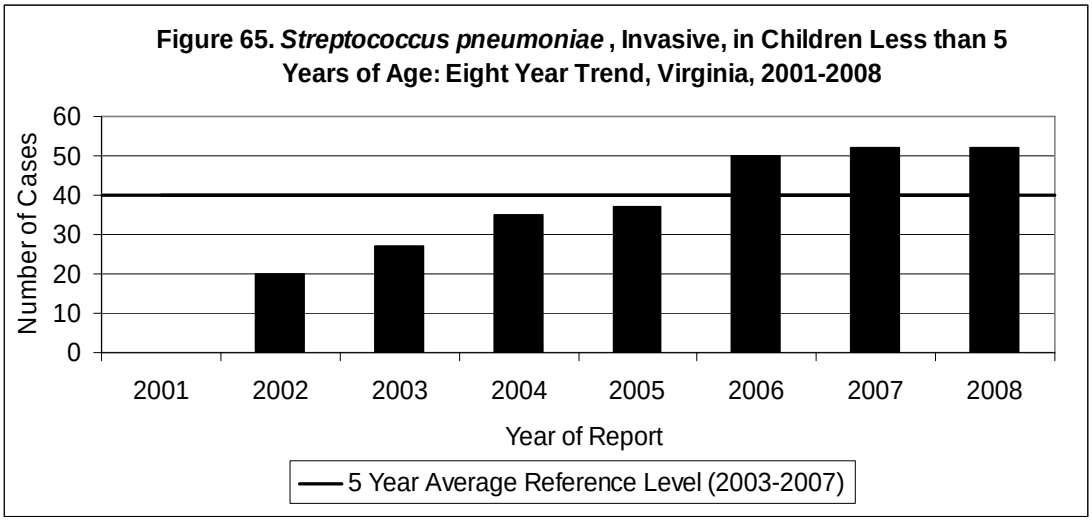
100,000, respectively). By region, the northwest region had the highest rate (3.4 per 100,000), while the other regions in the state had rates ranging from 1.4 to 2.3 per 100,000. A seasonal trend was noted with 37% of cases occurring during the first quarter of the year and with a peak in January (Figure 64). Among cases reported in 2008, eleven deaths were attributed to GAS infection. Eight (73%) of the deaths occurred in those aged 50 years and older, and six (55%) were in males. No cases of toxic shock due to group A streptococcal infection were reported.



***Streptococcus pneumoniae*, Invasive, in Children Less than 5 Years of Age**

Agent: *Streptococcus pneumoniae* (bacteria)
Mode of Transmission: Person-to-person via droplet or direct contact with oral secretions from persons carrying the bacteria in their upper respiratory tract.
Signs/Symptoms: Invasive infections may affect the blood, lung, and lining of the brain and spinal cord and may cause fever, chills, and irritability. Headache, stiff neck, confusion, sleepiness, vomiting, and poor feeding can occur with meningitis.
Prevention: Routine immunization with pneumococcal conjugate vaccine as a 4-dose series for infants at 2, 4, 6, and 12 to 15 months of age. Pneumococcal infections can be hard to treat because of antibiotic resistance thus making prevention through vaccination even more important. Vaccine is also recommended for adults age 65 years or older and other persons at increased risk for infection.
Other Important Information: With the decline of invasive *Haemophilus influenzae* infections, *S. pneumoniae* has become the leading cause of bacterial meningitis among children less than 5 years of age in the United States.

Fifty-two cases of invasive *S. pneumoniae* infection in children less than 5 years of age were reported in Virginia during 2008. This represents no change from the 52 cases reported in 2007, and is the first year the number of reported cases did not increase since becoming a reportable condition in 2001 (Figure 65). However, the 52 cases do represent a 29% increase over the five year average of 40.2 cases per year.



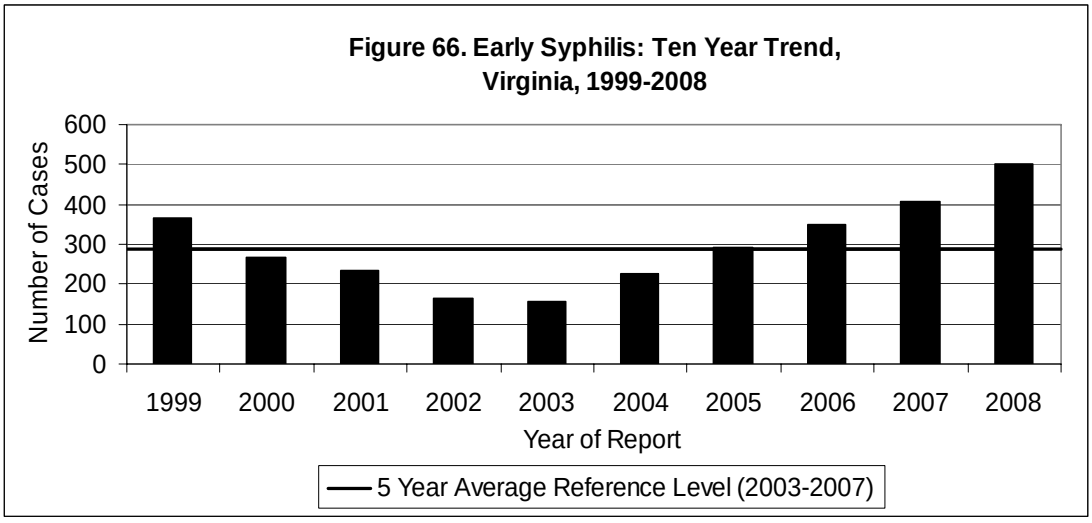
Twenty-nine percent of the reported cases occurred in infants less than one year of age, resulting in an incidence rate of 14.5 per 100,000 for this age group. Incidence in children from the 1-4 year age group was 8.9 per 100,000. Among cases where race was reported, incidence was higher in the black population (12.7 per 100,000) than among the white and "other" populations (7.1 and 5.9 per 100,000, respectively). The rate of *S. pneumoniae* infection among males (11.0 per 100,000) was higher than the rate of infection in females (8.7 per 100,000). Although cases were reported from all regions of the state, the highest incidence was seen in the southwest region (18.2 per 100,000). The rate in other regions ranged from 7.6 to 10.3 per 100,000. Cases occurred throughout the year, with the majority (67%) of illness having onset during the winter and early spring months, which is consistent with the pattern of pneumococcal infections. Among cases reported in 2008, one death was attributed to *S. pneumoniae* infection in a female child less than two years of age.

Syphilis

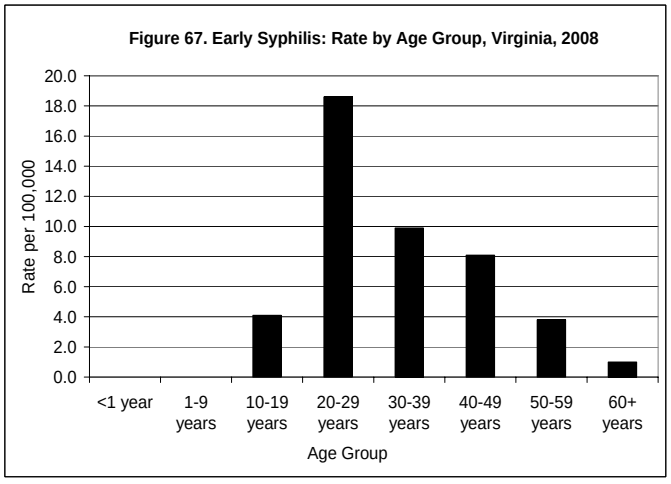
Agent: *Treponema pallidum* (bacteria)
Mode of Transmission: Through sexual intercourse, from mother to child through the placenta, and via blood transfusion from an infected donor in the early stage of disease.
Signs/Symptoms: The primary stage is characterized by a chancre. The secondary stage includes a skin rash and lesions of the mucous membranes. A latent period follows with no clinical symptoms. In late syphilis, the central nervous system may become sufficiently damaged, causing death.
Prevention: Safer sexual practices, screening of all women during early pregnancy to prevent infection of infants, and treatment of infected partners.
Other Important Information: Nationwide, the rate of primary and secondary syphilis is on the rise for two populations: men who have sex with men (MSM) and blacks.

Early Syphilis

Early syphilis includes the primary and secondary stages and early latent syphilis (cases diagnosed within one year from the time of infection). Mirroring national trends, syphilis continues to rise in Virginia. There were 500 cases of early syphilis reported in Virginia during 2008 (Figure 66). This is a 75% increase from the five year average of 285.8 cases per year. Since 2002, incidence has more than doubled from 2.3 to 6.5 per 100,000 in 2008.



The highest incidence occurred in the 20-29 year age group (18.6 per 100,000), followed by the 30-39 year age group (9.9 per 100,000) (Figure 67). The rate in the black population (21.9 per 100,000) was almost ten times the rate in the white population (2.2 per 100,000), and more than three times the rate in the "other" population (6.2 per 100,000). The rate in males was more than seven times the rate in females (11.7 and 1.5 per 100,000, respectively). The male to female ratio has risen from approximately 1:1 to 8:1 over the past ten years, which is indicative of a rising syphilis incidence among MSM. Since 2002, the rate of early syphilis has tripled in the southwest and central regions of Virginia.



Congenital Syphilis

Three cases of congenital syphilis were reported in Virginia in 2008, compared with one case in 2007.

Late Syphilis

In 2008, 281 cases of late syphilis were reported in Virginia, which was 14% less than the 328 cases reported in 2007. Incidence in the black population was 14 times the incidence in the white population (10.2 and 0.7 per 100,000, respectively), and the rate in males was slightly higher than in females (4.3 and 3.1 per 100,000, respectively). The highest incidence rate was reported in the 50-59 year age group (7.1 per 100,000). Incidence rates were highest in the central and eastern regions, at 5.1 and 4.6 per 100,000, respectively.

Tetanus

Agent: Toxin secreted by the bacteria *Clostridium tetani*
Mode of Transmission: Usually transmitted when a wound is infected by contaminated soil, dust, or animal or human feces.
Signs/Symptoms: A descending pattern of painful muscle contractions, particularly of the neck muscles, difficulty swallowing, and abdominal rigidity.
Prevention: Tetanus vaccine is available as part of the diphtheria/tetanus/pertussis (DTaP) vaccine for children and as a new combination tetanus/diphtheria/pertussis (Tdap) vaccine for adolescents and adults. One dose of Tdap should be given at 11 to 12 years of age with booster doses of tetanus/diphtheria (Td) every ten years.
Other Important Information: The case-fatality rate of tetanus ranges from 10% to 80% and depends on the length of incubation and the recognition of symptoms as indicative of tetanus.

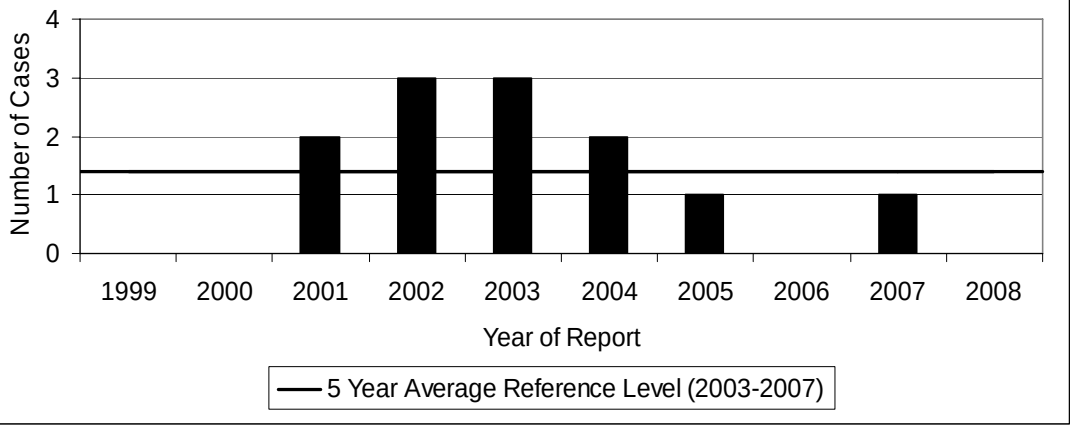
No cases of tetanus were reported in Virginia in 2008. Single cases were reported in 2005 and in 2004. Prior to 2004, the last reported case of tetanus in Virginia occurred in 1998.

Toxic Shock Syndrome

Agent: *Staphylococcus aureus* or beta-hemolytic streptococci (bacteria)
Mode of Transmission: Person-to-person spread through direct contact or through contact with contaminated materials or surfaces.
Signs/Symptoms: Sudden onset of high fever, rash, vomiting, watery diarrhea, and muscle pain, followed by a drop in blood pressure, and shock in severe cases.
Prevention: Practice good hand hygiene, clean skin abrasions, and eradicate *S. aureus* and *Streptococcus pyogenes* from draining wounds.
Other Important Information: The majority of early cases were reported in women during menses; however, in recent years, only 55% of cases have been reported among women of child-bearing age.

No cases of toxic shock syndrome due to *Staphylococcus aureus* were reported in Virginia during 2008. The last reported case occurred in 2007 in a white female adolescent from the northwest region. For the past five years, the average occurrence of this condition was 1.4 cases per year (Figure 68). This is substantially lower than the average of 7.7 cases per year observed from 1994 to1996.

Figure 68. Toxic Shock Syndrome: Ten Year Trend, Virginia, 1999-2008



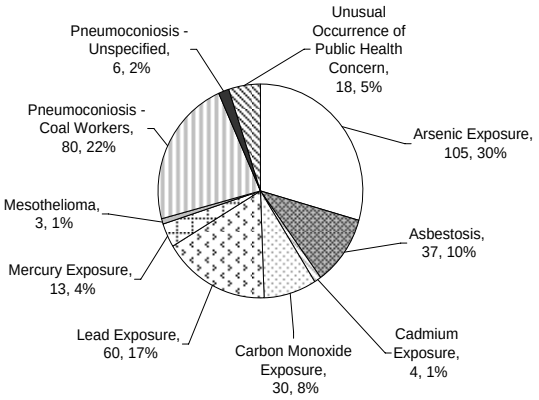
For information on toxic shock syndrome cases caused by infection with group A *Streptococcus*, see the "Streptococcal Disease, Group A, Invasive" section in this report.

Toxic Substance-Related Illness

Agent: Multiple, including pesticides, heavy metals (e.g., lead, cadmium, mercury, arsenic), occupational dusts or fibers (e.g., coal, silica, asbestos), gases (e.g., carbon monoxide, methane) or radioactive materials.
Mode of Transmission: Varies depending on agent; can include absorption through skin, ingestion, or inhalation.
Signs/Symptoms: Varies depending on agent, dose of exposure, and duration of exposure. Chronic occupational dust or fiber exposure may increase the risk of lung cancer, mesothelioma and nonmalignant lung disorders. Heavy metals, gases and pesticides may damage nervous, digestive, or reproductive systems.
Prevention: Do not eat, drink, or smoke in contaminated work areas. Wash hands and face after contacting toxic materials; after working with potential toxic substances, shower and change clothes at work, if possible. Always follow safety guidelines and requirements.
Other Important Information: Improving public and healthcare professional awareness and recognition of various toxic substance exposures can help reduce subsequent illness.

During 2008, 356 cases of toxic substance-related illness were reported in Virginia. An incidence of exposure is based on a physician's diagnosis or on a laboratory finding above expected normal values. The three most frequently reported toxic substance-related illnesses were arsenic exposure, pneumoconiosis, and lead exposure (Figure 69). Additional toxic substance-related illness reported during 2008 included mesothelioma and exposures to asbestos, cadmium, carbon monoxide, and mercury. In addition, occurrence of illness from exposure to rarely reported substances were captured. These unusual occurrences of public health concern included exposures to combustion products, ethylene glycol, ethyl alcohol, difluoroethane, herbicide, methanol, toxic inhalants/volatile substances, lye, and selenium. Many of these exposures were reported from death certificates.

Figure 69: Reported Adult Toxic Substance-Related Illness, by Illness Type, Virginia, 2008



The number of cases of arsenic exposure increased nearly six-fold from 2007 to 2008 going from 18 to 105 cases, respectively. This increase in reported arsenic exposure was the result of additional submissions of electronic laboratory reports for individuals with arsenic levels above normal laboratory values. Most of the arsenic reports resulted from elevated blood or urine levels for total arsenic. Further speciation for the more dangerous form of inorganic arsenic was not provided. Among other frequently reported conditions, 86% of those reported with pneumoconioses worked in the coal mining industry, and of these reported cases, 30% died from this condition. Among those with lead exposures, 37% worked in battery manufacturing. Those with reported carbon monoxide exposures worked in various industries. However, all but one of the exposures were reported from death certificates, and most resulted from accidental fires or deliberate exposure to vehicle exhaust. Although asbestosis accounted for 10% of all toxic substance related-illness in 2008, the number of reported cases has dropped steadily in the past decade. The average age reported for asbestosis was 79 years, which is reflective of the disease occurring in the population who had exposure before regulatory standards and guidelines became effective.

Among all toxic exposures, the highest percentage of cases (36%) occurred in the 60 year and over age group with an incidence rate of 10.0 per 100,000. Race information was not reported for 51% of all toxic substance-related cases. Where race information was provided, the white population had the highest incidence (2.7 per 100,000), followed by the black population (1.3 per 100,000). Eighty-six percent of all cases occurred in males and the incidence was more than six times that of females (8.1 and 1.2 per 100,000, respectively). The southwest region, where coal and battery manufacturing industries are concentrated, accounted for 38% of reported exposures and had an incidence of 10.2 per 100,000. Other regions of the state had incidence rates ranging from 1.6 to 5.1 per 100,000.

Children with exposure to lead are not discussed in this section. For this information, see the "Lead - Elevated Blood Levels in Children" section.

Trichinosis

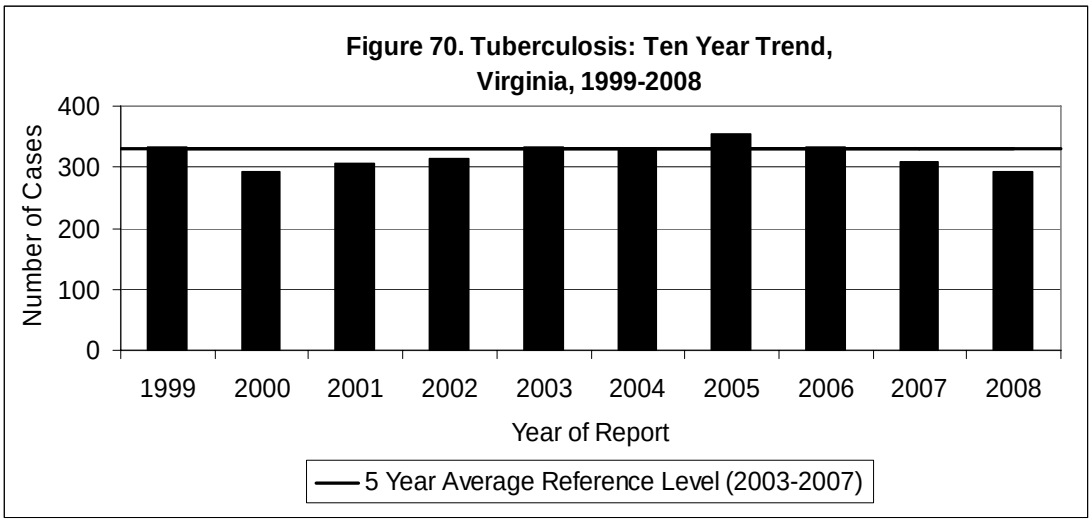
Agent: Roundworms of genus *Trichinella; T. spiralis* is the most common cause of human infection.
Mode of Transmission: Eating undercooked contaminated meat (including bear, pork, wild feline [such as cougar], fox, dog, wolf, horse, seal, or walrus).
Signs/Symptoms: Nausea, diarrhea, vomiting, fatigue, fever, and abdominal discomfort. Headaches, fevers, chills, cough, eye swelling, aching joints and muscle pains, itchy skin, diarrhea, or constipation may follow. Individuals may be asymptomatic, but severe infections can cause death.
Prevention: Cook all pork products and meat from wild animals to an internal temperature of at least 160 degrees Fahrenheit.
Other Important Information: Trichinosis is not transmitted from person to person. Infected meat will remain infective until it has been properly cooked, cured, frozen or irradiated.

One case of trichinosis was reported in Virginia in 2008. The condition occurred in an adult male with a recent history of consuming undercooked meat products, including wild elk. The last reported case of trichinosis in Virginia occurred in 2005.

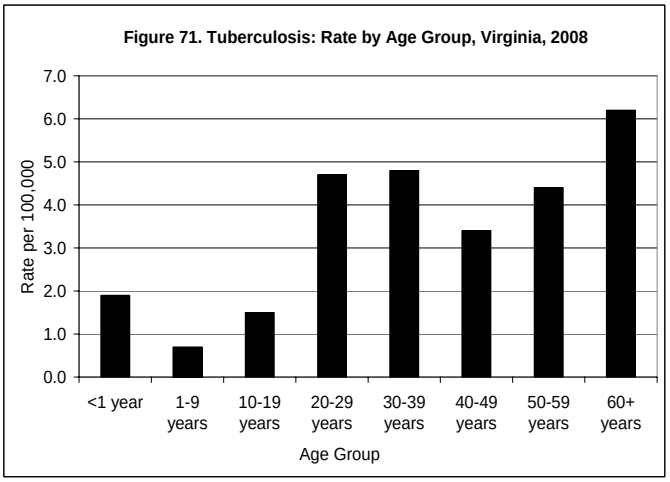
Tuberculosis

Agent: *Mycobacterium tuberculosis* (bacteria)
Mode of Transmission: Inhalation of tubercle bacilli via airborne droplet nuclei produced when patients with pulmonary or respiratory tract tuberculosis exhale the bacilli through coughing, singing, or sneezing.
Signs/Symptoms: Dependent on the organ(s) affected. General systemic signs and symptoms include fever, chills, night sweats, weight loss and fatigue. Symptoms of pulmonary tuberculosis may also include a prolonged (greater than 3 weeks) productive cough and coughing up blood.
Prevention: Prompt identification, diagnosis and treatment of persons with infectious tuberculosis. Timely contact investigations to identify and treat additional persons with active tuberculosis disease and persons with latent tuberculosis infection. Infection control measures in high-risk settings.
Other Important Information: About 10% of those infected with tuberculosis will develop active disease during their lifetime, with the greatest risk for disease progression during the two years following infection. Co-infection with HIV and other immune suppressing conditions represent the greatest risks for progression to active disease.

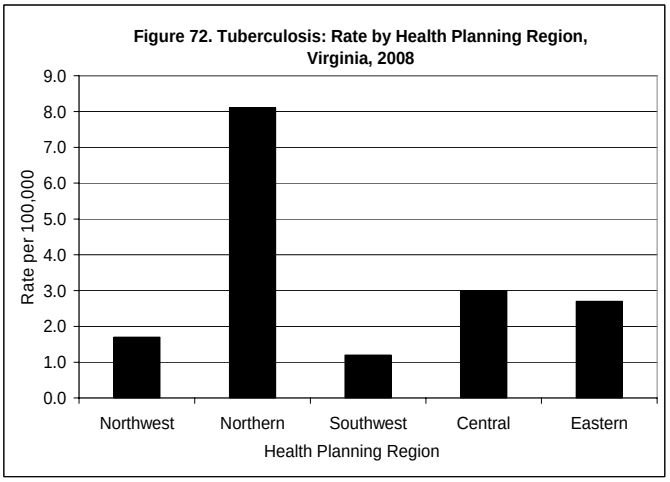
The 292 tuberculosis cases reported in 2008 were a 5% decrease from the 309 cases reported in 2007, and were 12% lower than the five year average of 331.4 cases per year (Figure 70). Drug resistance was found in 35 cases, two of which were multi-drug resistant (MDR). No cases of extensively drug resistant (XDR) tuberculosis were reported. The majority of cases (73%) were reported among foreign-born persons. The five most common countries of origin were the Philippines, Viet Nam, India, Ethiopia and Mexico.



Incidence rates in adults were higher than rates in children and adolescents. The highest incidence rate occurred among persons in the 60 year and older age group (6.2 per 100,000), followed by those in the 30-39 and 20-29 year age groups (4.8 and 4.7 per 100,000, respectively). The lowest rate (0.7 per 100,000) was reported among those aged 1-9 years (Figure 71). By race, the highest incidence by far was observed in the "other" race population (21.4 per 100,000) followed by the black population (4.9 per 100,000) and the white population (1.8 per 100,000). In 2008, all persons of "other" race with tuberculosis were Asian and Pacific Islanders.



Males had a higher rate (4.5 per 100,000) than females (3.1 per 100,000). The highest number of cases and highest incidence rate were reported from the northern region (169 cases, 8.1 per 100,000), and the lowest number and rate were seen in the southwest region (16 cases, 1.2 per 100,000) (Figure 72). The high rate in the northern region is attributed to 72% of the 212 foreign-born cases being reported from that area.



Tularemia

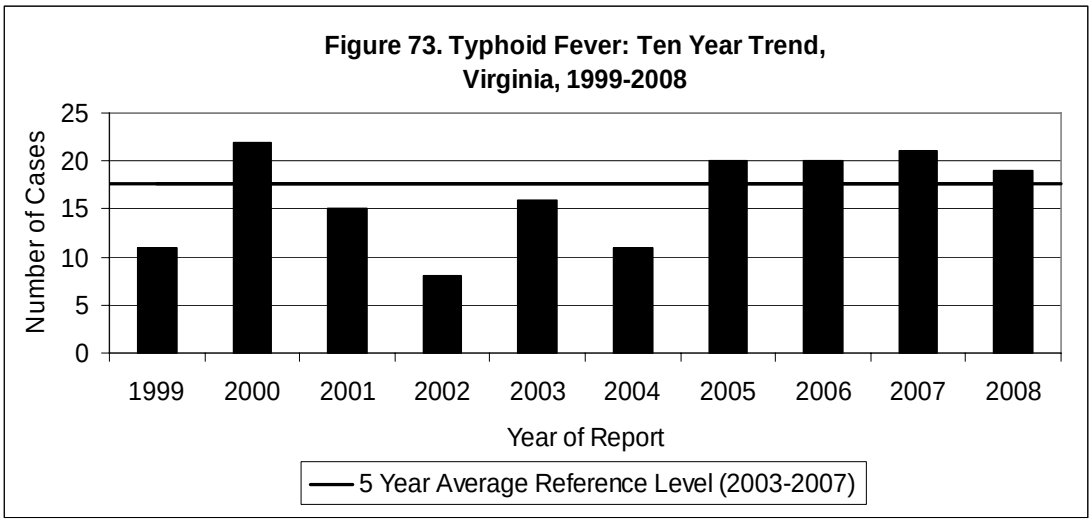
Agent: *Francisella tularensis* (bacteria)
Mode of Transmission: In the United States, by the bite of an infected tick such as the American dog tick, the lone star tick, the blacklegged tick or occasionally by the bite of an infected deer fly. Hunters can contract the disease while cleaning infected game or when eating poorly cooked, infected meat. Humans may also become infected by drinking water contaminated by infected animals, or by breathing *F. tularensis* spores from the dried carcasses or pelts of animals that died from tularemia.
Signs/Symptoms: Vary depending on the mode of transmission, but usually include sudden onset of high fever, chills, fatigue, general body aches, headache and nausea. Pneumonia may complicate the disease and requires prompt identification and specific treatment to prevent development of serious, life-threatening illness.
Prevention: Avoid the bites of ticks or deer flies and avoid untreated water in areas where tularemia is prevalent among wild animals. Use impervious protective gloves when skinning rabbits and other wild game. Avoid contaminating other food items with utensils used for preparing meat from game and do not eat undercooked meat.
Other Important Information: Tularemia is classified as a potential bioweapon because its spores are relatively easy to disseminate as a breathable aerosol or as a food and water contaminant.

One case of tularemia was reported in Virginia in 2008. This is slightly fewer than the three cases reported in 2007, but similar to the five year average of 1.4 cases per year. The case occurred in a white male in the 1-9 year age group from the central region. The infection was associated with a tick bite. Prior to 2007, the last reported cases of tularemia in Virginia occurred in 2003.

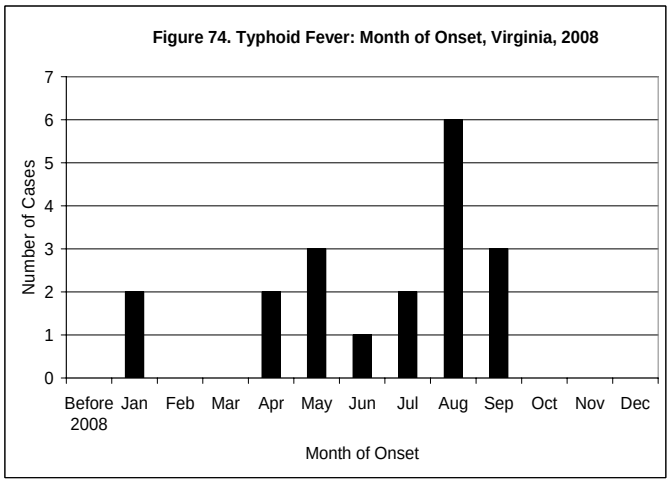
Typhoid Fever

Agent: *Salmonella* ser.Typhi (bacteria)
Mode of Transmission: Ingestion of food or water contaminated by feces or urine of patients and carriers. The bacteria live only in humans.
Signs/Symptoms: Include sustained fever, headache, malaise, a change in mental status, lethargy, anorexia, fast heart rate, enlarged spleen, a non-productive cough and constipation.
Prevention: Access to safe water and proper sanitation as well as following safe food handling practices are essential. Typhoid fever vaccine should be considered for travelers to a country where the disease is common.

During 2008, 19 cases of typhoid fever were reported in Virginia. This is a 9% decrease from the 21 cases reported in 2007, but an 8% increase from the five year average of 17.6 cases per year (Figure 73). Travel histories were obtained for all cases, and all but one had traveled outside of the United States in the 30 days prior to onset of illness. The countries included were Pakistan, India, Bangladesh, and Ethiopia. The one reported case with no travel history was epidemiologically linked to a family member with prior history of typhoid fever.



The 1-9 year age group had the highest incidence rate (1.0 per 100,000), followed by the 20-29 and 30-39 year age groups (0.3 per 100,000 each). Race information was not available for 53% of the cases, but among cases with a race reported, the "other" race category had the highest number of cases and the highest incidence rate (6 cases, 1.1 per 100,000). Incidence among females and males was the same (0.2 per 100,000). Fifteen cases (79%) were reported from the northern region, where the incidence rate was 0.7 per 100,000. The other regions in the state had incidence rates ranging from 0.0 to 0.2 per 100,000. In 2008, the largest proportion of cases (58%) had onset during the third quarter, with a peak in August (Figure 74).



Vaccinia, Disease or Adverse Event

Agent: Vaccinia virus, which is used in smallpox vaccine.
Mode of Transmission: Transmitted through injection with the smallpox vaccine or through direct contact with the vaccination site or contaminated materials.
Signs/Symptoms: Include rash, fever and head and body aches. Some individuals, especially those with certain skin conditions or weakened immune systems, may experience more serious effects such as a toxic or allergic reaction at the site of the vaccination or spread of the virus to other parts of the body.
Prevention: When smallpox is not circulating, in order to prevent serious reactions to the vaccine, only laboratory workers who handle smallpox and certain healthcare workers are recommended to receive the smallpox vaccine.

Other Important Information: The U.S. government has enough smallpox vaccine to vaccinate every person in the United States in the event of a smallpox emergency.

Vaccinia became a reportable condition in Virginia in 2003. Following this, the first report of vaccinia infection in Virginia was received in 2008. The infection occurred in a laboratory worker who handled vaccinia-infected mice.

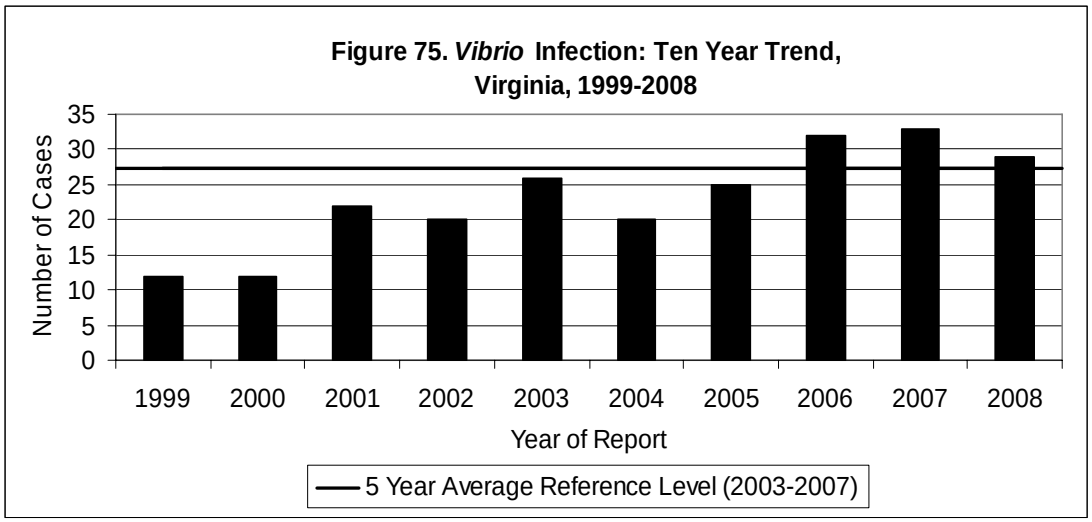
Vancomycin-Intermediate (VISA) or Vancomycin-Resistant (VRSA) *Staphylococcus aureus* Infection

See *Staphylococcus aureus* Infection, Vancomycin-Intermediate (VISA) or Vancomycin-Resistant (VRSA)

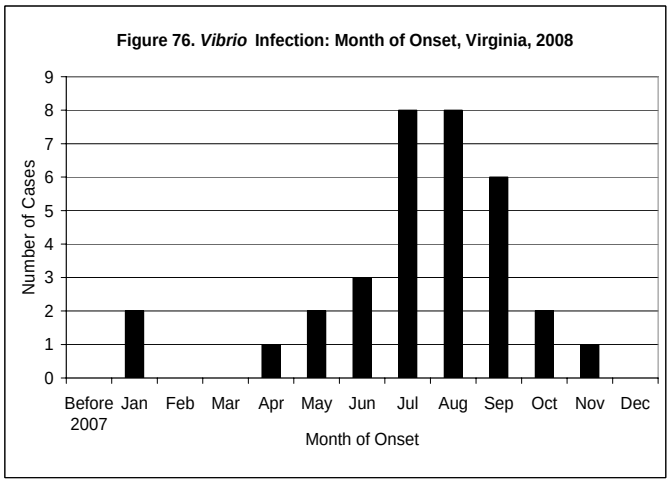
Vibrio Infection

Agent: *Vibrio* (bacteria)
Mode of Transmission: Gastroenteritis is usually related to the consumption of raw or undercooked seafood, particularly shellfish. Wound infections arise from environmental exposures, usually from brackish waters or from occupational injuries (e.g., among fishermen).
Signs/Symptoms: Syndromes associated with *Vibrio* infection include diarrhea, wound infection, and septicemia. Diarrheal illness is most common and includes watery stools, cramping, and abdominal pain. Low-grade fever, headache and chills are seen in half of those ill with diarrheal illness, while 30% of those with diarrheal illness will experience vomiting. Wound infection is usually severe in those who have liver disease or are immunosuppressed.
Prevention: Seafood should be cooked adequately and should be refrigerated. Abrasions suffered by ocean bathers should be rinsed with clean, fresh water. Children, immunosuppressed persons and those with chronic liver disease should not eat raw oysters or clams.
Other Important Information: Most *Vibrio* infections occur during summer and fall months, when levels of bacteria in brackish waters and estuaries are highest.

During 2008, 29 cases of *Vibrio* infection were reported in Virginia. This is similar to the 33 cases reported in 2007 and a 7% increase over the five year average of 27.2 cases per year (Figure 75). The species breakdown among the 29 *Vibrio* infections included 12 (41%) infections caused by *V. parahaemolyticus*, four (14%) caused by *V. alginolyticus*, three (10%) caused by *V. vulnificus*, three (10%) caused by *V. mimicus*, three (10%) caused by other various species of *Vibrio (cholera* non 01, non 0139 and *fluvialis)* and six (21%) cases with no species identified. Two cases were infected with multiple species of *Vibrio*. Illnesses included 12 gastrointestinal infections, 10 wound infections, three septicemic infections, three other types of infections (i.e., specimen collected from ear, urine and tonsil) and one case with multiple infection sites (i.e., wound and septicemic). *V. parahaemolyticus* was associated with causing gastrointestinal (7/12 cases) and wound infections (5/12 cases). *V. alginolyticus* was associated with wound (3/4 cases) and other infections (1/4 cases). *V. vulnificus* was associated with wound (2/3 cases) and septicemic infections (2/3 cases). *V. mimicus* was associated with septicemic (2/3 cases) and gastrointestinal (1/3 cases) infections.



Twenty-eight percent of reported cases occurred in the 60 year and older age group and the incidence rate was the second highest in this age group (0.6 per 100,000). The highest incidence rate was in the infant age group (1.0 per 100,000), which represented three percent of all cases. Incidence was the same (0.2 per 100,000) among whites (13 cases reported) and blacks (3 cases reported).



Among the 29 cases reported in Virginia in 2008, *Vibrio* infection predominantly affected males. Sixty-six percent of infections occurred among males and the incidence rate was almost double the rate for females (0.5 and 0.3 per 100,000). Geographically, the eastern region had the largest proportion of cases and the highest incidence rate (48%, 0.8 per 100,000), followed by the northern region (28%, 0.4 per 100,000) and central region (17%, 0.4 per 100,000). Fifty-nine percent of cases occurred during the third quarter, and onset peaked during the summer months of July and August (Figure 76). Among cases reported in 2008, no deaths were attributed to *Vibrio* infections.

Cholera

No cases of cholera were reported in Virginia in 2008. The last case of cholera in Virginia occurred in 1994.

Viral Hemorrhagic Fever

Agent(s): Multiple, including *Arenaviruses* (Argentinian, Bolivian, Venezuelan, and Brazilian hemorrhagic fevers, and Lassa fever), *Filoviruses* (Ebola and Marburg hemorrhagic fevers), *Bunyaviruses* (Crimean-Congo hemorrhagic fever [CCHF] and Rift Valley fever [RVF]), and *Flaviviruses* (Omsk hemorrhagic fever [OHF] and dengue hemorrhagic fever [DHF]).
Mode of Transmission: Varies by agent. *Arenaviruses* are carried by rodents and are contracted by breathing dust contaminated with saliva, feces or urine of infected rodents, but may also be transmitted person-to-person by infected patients. *Filovirus* hemorrhagic fevers are contracted through direct contact with blood or fluids from infected animals or persons. *Bunyaviruses* are typically transmitted by the bites of arthropods but may also be contracted through contact with the blood and body fluids of infected livestock or people. Hemorrhagic fevers caused by *Flaviviruses* are typically transmitted by the bites of arthropods. Among the viral hemorrhagic fevers, only DHF has been found to occur naturally in North America.
Signs/Symptoms: Vary by type, including but not limited to, malaise, headache, fever, bleeding from nose and gums, rash, appearance of blood in the eyes, or vomiting. Case-fatality rates can range from 1% (Dengue) to 90% (Ebola).
Prevention: Depending on agent, exposure to hemorrhagic diseases can be reduced by rodent control around the home in endemic areas, by isolation of infected persons during their febrile period, by preventing contact with blood or body fluids of sick or dead animals, and by avoiding the bites of mosquito or tick vectors.
Other Important Information: Viral hemorrhagic fevers are classified as potential bioweapons because they can cause high mortality, public panic, or social disruption.

Since it became a reportable condition in 2003, no cases of viral hemorrhagic fever have been reported in Virginia.

Yellow Fever

Agent: Yellow fever virus
Mode of Transmission: Through the bite of several species of *Aedes* mosquitoes, most notably the yellow fever mosquito (*Aedes aegypti*), which breeds in containers of water occurring around human habitations. Yellow fever mosquitoes occur in Virginia but have become uncommon after being displaced from their container breeding habitats by the arrival of the Asian tiger mosquito (*Aedes albopictus*) in Virginia in 1992. The Asian tiger mosquito is very common and is similar in behavior and appearance to the yellow fever mosquito, but is not currently known to be a competent vector of yellow fever.
Signs/Symptoms: Varying levels of severity; include a sudden onset of fever, chills, headache, backache, generalized muscle pain, prostration, nausea, and vomiting. Jaundice is usually mild in early disease but intensifies later. Among cases with jaundice, fatality is 20% to 50%.
Prevention: Vaccination against the yellow fever virus prior to visiting yellow fever endemic regions of the world.

No cases of yellow fever have been reported in Virginia since the nineteenth century.

Yersiniosis

Agent: *Yersinia* species (bacteria)
Mode of Transmission: Ingestion of contaminated foods particularly raw or incompletely cooked pork products and unpasteurized milk, or contaminated surface or well water, or by direct or indirect contact with infected people or animals.
Signs/Symptoms: Vary depending on age, but may include fever, abdominal pain, and bloody diarrhea.
Prevention: Safe food preparation and pasteurization of dairy products. People handling pork intestines should wash their hands and environmental surfaces thoroughly after contact and should not care for a young infant at the same time.
Other Important Information: Most infections occur during the winter.

Fourteen cases of yersiniosis were reported in Virginia during 2008. This is an increase from the 10 cases reported in 2007and to the five year average of 10.2 cases per year. The highest incidence among age groups was reported among infants (6.8 per 100,000). Race was not reported for 36% of the cases. Among those with a reported race, the rate was higher in the black population (4.2 per 100,000) than the rate in the white population (1.1 per 100,000). Incidence among males and females was similar (0.2 and 0.1 per 100,000, respectively). Cases occurred in all but the eastern region, and incidence rates ranged from 0.2 to 0.3 per 100,000. While cases are expected to be concentrated in the winter months, only five (36%) of the 14 cases occurred during the winter.

NUMBER OF REPORTED CASES

AND

RATE PER 100,000 POPULATION

FOR SELECTED DISEASES BY

LOCALITY, DISTRICT, AND REGION

Number of Cases and Rate for each Locality, District, and Region for these Diseases: 2008

LOCALITY/DISTRICT/REGION	2007 POPULATION	AIDS REPORTED CASES	AIDS RATE PER 100,000	Amebiasis REPORTED CASES	Amebiasis RATE PER 100,000	Campylobacteriosis REPORTED CASES	Campylobacteriosis RATE PER 100,000
VIRGINIA TOTAL	7,712,091	638	8.3	42	0.5	669	8.7
LOCALITY							
Accomack County	38,485	2	5.2	0	0.0	5	13.0
Albemarle Co., Charlottesville	134,345	13	9.7	3	2.2	11	8.2
Alleghany Co, Clifton Forge, Covington	22,555	1	4.4	0	0.0	2	8.9
Amelia County	12,686	0	0.0	0	0.0	2	15.8
Amherst County	32,223	1	3.1	0	0.0	6	18.6
Appomattox County	14,199	0	0.0	0	0.0	2	14.1
Arlington County	204,568	36	17.6	5	2.4	32	15.6
Augusta Co., Staunton	94,756	2	2.1	0	0.0	19	20.1
Bath County	4,635	0	0.0	1	21.6	0	0.0
Bedford County and City	73,036	1	1.4	0	0.0	8	11.0
Bland County	6,883	0	0.0	0	0.0	2	29.1
Botetourt County	32,005	2	6.2	0	0.0	1	3.1
Brunswick County	17,811	2	11.2	0	0.0	1	5.6
Buchanan County	23,900	0	0.0	0	0.0	1	4.2
Buckingham County	15,932	1	6.3	0	0.0	1	6.3
Campbell County	52,840	3	5.7	0	0.0	15	28.4
Caroline County	27,282	3	11.0	0	0.0	3	11.0
Carroll County	29,120	1	3.4	0	0.0	2	6.9
Charles City County	7,166	1	14.0	0	0.0	0	0.0
Charlotte County	12,333	1	8.1	0	0.0	1	8.1
Chesterfield County	299,689	21	7.0	0	0.0	20	6.7
Clarke County	14,361	1	7.0	0	0.0	10	69.6
Craig County	5,141	0	0.0	0	0.0	0	0.0
Culpeper County	45,723	3	6.6	0	0.0	1	2.2
Cumberland County	9,626	1	10.4	0	0.0	0	0.0
Dickenson County	16,168	0	0.0	0	0.0	1	6.2
Dinwiddie County	25,747	1	3.9	0	0.0	0	0.0
Essex County	10,862	0	0.0	0	0.0	2	18.4
Fairfax Co./City/Falls Church	1,044,538	72	6.9	17	1.6	101	9.7
Fauquier County	66,328	0	0.0	0	0.0	5	7.5
Floyd County	14,641	0	0.0	0	0.0	1	6.8
Fluvanna County	25,329	0	0.0	0	0.0	4	15.8
Franklin County	51,133	2	3.9	0	0.0	4	7.8
Frederick Co., Winchester	98,613	4	4.1	0	0.0	19	19.3
Giles County	17,228	1	5.8	0	0.0	1	5.8
Gloucester County	38,336	2	5.2	0	0.0	2	5.2
Goochland County	20,615	0	0.0	0	0.0	0	0.0
Grayson County	16,072	0	0.0	0	0.0	0	0.0
Greene County	17,860	0	0.0	0	0.0	0	0.0
Greensville Co., Emporia	17,531	3	17.1	0	0.0	0	0.0
Halifax County	35,530	2	5.6	0	0.0	7	19.7
Hanover County	98,946	4	4.0	0	0.0	3	3.0
Henrico County	289,822	33	11.4	2	0.7	20	6.9
Henry Co., Martinsville	70,122	3	4.3	0	0.0	2	2.9
Highland County	2,446	0	0.0	0	0.0	2	81.8
Isle of Wight County	35,035	2	5.7	0	0.0	6	17.1
James City County	61,195	2	3.3	0	0.0	6	9.8

Number of Cases and Rate for each Locality, District, and Region for these Diseases: 2008

LOCALITY/DISTRICT/REGION	2007 POPULATION	AIDS REPORTED CASES	AIDS RATE PER 100,000	Amebiasis REPORTED CASES	Amebiasis RATE PER 100,000	Campylobacteriosis REPORTED CASES	Campylobacteriosis RATE PER 100,000
VIRGINIA TOTAL	7,712,091	638	8.3	42	0.5	669	8.7
LOCALITY							
King and Queen County	6,882	0	0.0	0	0.0	1	14.5
King George County	22,630	0	0.0	0	0.0	2	8.8
King William County	15,689	0	0.0	0	0.0	0	0.0
Lancaster County	11,532	2	17.3	0	0.0	1	8.7
Lee County	23,461	0	0.0	0	0.0	4	17.0
Loudoun County	278,797	11	3.9	3	1.1	27	9.7
Louisa County	31,961	0	0.0	0	0.0	5	15.6
Lunenburg County	13,018	0	0.0	0	0.0	0	0.0
Madison County	13,719	0	0.0	0	0.0	0	0.0
Mathews County	9,041	0	0.0	0	0.0	0	0.0
Mecklenburg County	32,106	6	18.7	0	0.0	2	6.2
Middlesex County	10,637	0	0.0	0	0.0	2	18.8
Montgomery County	89,193	0	0.0	0	0.0	5	5.6
Nelson County	15,245	2	13.1	0	0.0	2	13.1
New Kent County	17,109	0	0.0	0	0.0	1	5.8
Northampton County	13,401	1	7.5	0	0.0	3	22.4
Northumberland County	12,897	1	7.8	0	0.0	1	7.8
Nottoway County	15,755	0	0.0	0	0.0	1	6.3
Orange County	32,492	0	0.0	0	0.0	1	3.1
Page County	24,142	0	0.0	0	0.0	2	8.3
Patrick County	18,870	0	0.0	0	0.0	3	15.9
Pittsylvania County	60,826	1	1.6	0	0.0	1	1.6
Powhatan County	27,817	1	3.6	0	0.0	1	3.6
Prince Edward County	21,360	2	9.4	0	0.0	0	0.0
Prince George County	35,886	0	0.0	0	0.0	3	8.4
Pr. William Co./Manassas/M. Park	407,249	39	9.6	2	0.5	23	5.6
Pulaski County	35,060	2	5.7	0	0.0	2	5.7
Rappahannock County	7,199	0	0.0	0	0.0	0	0.0
Richmond County	9,171	0	0.0	0	0.0	0	0.0
Roanoke County	90,420	0	0.0	0	0.0	3	3.3
Rockbridge Co., Lexington	28,524	1	3.5	0	0.0	5	17.5
Rockingham Co., Harrisonburg	117,563	7	6.0	0	0.0	20	17.0
Russell County	28,838	0	0.0	0	0.0	1	3.5
Scott County	22,787	0	0.0	0	0.0	4	17.6
Shenandoah County	40,403	0	0.0	0	0.0	15	37.1
Smyth County	32,050	0	0.0	0	0.0	1	3.1
Southampton County	17,654	1	5.7	0	0.0	1	5.7
Spotsylvania County	119,194	14	11.7	0	0.0	7	5.9
Stafford County	120,723	5	4.1	0	0.0	10	8.3
Surry County	7,089	1	14.1	0	0.0	1	14.1
Sussex County	12,222	3	24.5	0	0.0	0	0.0
Tazewell County	43,855	2	4.6	0	0.0	5	11.4
Warren County	36,294	2	5.5	0	0.0	3	8.3
Washington County	52,733	0	0.0	0	0.0	5	9.5
Westmoreland County	17,252	1	5.8	0	0.0	0	0.0
Wise Co., Norton	45,390	1	2.2	0	0.0	5	11.0
Wythe County	28,538	0	0.0	0	0.0	2	7.0
York Co., Poquoson	73,129	2	2.7	0	0.0	4	5.5

Number of Cases and Rate for each Locality, District, and Region for these Diseases: 2008

LOCALITY/DISTRICT/REGION	2007 POPULATION	AIDS REPORTED CASES	AIDS RATE PER 100,000	Amebiasis REPORTED CASES	Amebiasis RATE PER 100,000	Campylobacteriosis REPORTED CASES	Campylobacteriosis RATE PER 100,000
VIRGINIA TOTAL	7,712,091	638	8.3	42	0.5	669	8.7
LOCALITY							
Alexandria	140,024	28	20.0	6	4.3	14	10.0
Bristol	17,593	0	0.0	0	0.0	0	0.0
Buena Vista	6,482	0	0.0	0	0.0	1	15.4
Chesapeake	219,154	18	8.2	1	0.5	16	7.3
Colonial Heights	17,796	0	0.0	0	0.0	0	0.0
Danville	44,947	3	6.7	0	0.0	4	8.9
Franklin City	8,906	0	0.0	0	0.0	0	0.0
Fredericksburg	22,410	4	17.8	0	0.0	1	4.5
Galax	6,824	0	0.0	0	0.0	0	0.0
Hampton	146,439	18	12.3	0	0.0	9	6.1
Hopewell	23,028	4	17.4	0	0.0	2	8.7
Lynchburg	71,282	1	1.4	0	0.0	13	18.2
Newport News	179,153	13	7.3	0	0.0	10	5.6
Norfolk	235,747	38	16.1	1	0.4	9	3.8
Petersburg	32,885	18	54.7	0	0.0	0	0.0
Portsmouth	101,967	10	9.8	0	0.0	5	4.9
Radford	16,133	0	0.0	0	0.0	0	0.0
Richmond City	200,123	91	45.5	1	0.5	10	5.0
Roanoke City	92,600	21	22.7	0	0.0	5	5.4
Salem	25,233	1	4.0	0	0.0	3	11.9
Suffolk	81,332	6	7.4	0	0.0	5	6.1
Virginia Beach	434,743	27	6.2	0	0.0	36	8.3
Waynesboro	21,656	2	9.2	0	0.0	3	13.9
Williamsburg	12,434	0	0.0	0	0.0	7	56.3

Number of Cases and Rate for each Locality, District, and Region for these Diseases: 2008

LOCALITY/DISTRICT/REGION	2007 POPULATION	AIDS REPORTED CASES	AIDS RATE PER 100,000	Amebiasis REPORTED CASES	Amebiasis RATE PER 100,000	Campylobacteriosis REPORTED CASES	Campylobacteriosis RATE PER 100,000
VIRGINIA TOTAL	7,712,091	638	8.3	42	0.5	669	8.7
DISTRICT/REGION							

Central Shenandoah	276,062	12	4.3	1	0.4	50	18.1
Lord Fairfax	213,813	7	3.3	0	0.0	49	22.9
Rappahannock	312,239	26	8.3	0	0.0	23	7.4
Rappahannock/Rapidan	165,461	3	1.8	0	0.0	7	4.2
Thomas Jefferson	224,740	15	6.7	3	1.3	22	9.8
Northwest Region	1,192,315	63	5.3	4	0.3	151	12.7

Alexandria	140,024	28	20.0	6	4.3	14	10.0
Arlington	204,568	36	17.6	5	2.4	32	15.6
Fairfax	1,044,538	72	6.9	17	1.6	101	9.7
Loudoun	278,797	11	3.9	3	1.1	27	9.7
Prince William	407,249	39	9.6	2	0.5	23	5.6
Northern Region	2,075,176	186	9.0	33	1.6	197	9.5

Alleghany	175,354	4	2.3	0	0.0	9	5.1
Central Virginia	243,580	6	2.5	0	0.0	44	18.1
Cumberland Plateau	112,761	2	1.8	0	0.0	8	7.1
Lenowisco	91,638	1	1.1	0	0.0	13	14.2
Mount Rogers	189,813	1	0.5	0	0.0	12	6.3
New River	172,255	3	1.7	0	0.0	9	5.2
Pittsylvania/Danville	105,773	4	3.8	0	0.0	5	4.7
Roanoke City	92,600	21	22.7	0	0.0	5	5.4
West Piedmont	140,125	5	3.6	0	0.0	9	6.4
Southwest Region	1,323,899	47	3.6	0	0.0	114	8.6

Chesterfield	345,302	22	6.4	0	0.0	21	6.1
Chickahominy	143,836	5	3.5	0	0.0	4	2.8
Crater	154,388	30	19.4	0	0.0	6	3.9
Henrico	289,822	33	11.4	2	0.7	20	6.9
Piedmont	100,710	5	5.0	0	0.0	5	5.0
Richmond City	200,123	91	45.5	1	0.5	10	5.0
Southside	85,447	10	11.7	0	0.0	10	11.7
Central Region	1,319,628	196	14.9	3	0.2	76	5.8

Chesapeake	219,154	18	8.2	1	0.5	16	7.3
Eastern Shore	13,401	1	7.5	0	0.0	3	22.4
Hampton	146,439	18	12.3	0	0.0	9	6.1
Norfolk	235,747	38	16.1	1	0.4	9	3.8
Peninsula	325,911	17	5.2	0	0.0	27	8.3
Portsmouth	101,967	10	9.8	0	0.0	5	4.9
Three Rivers	142,299	6	4.2	0	0.0	9	6.3
Virginia Beach	434,743	27	6.2	0	0.0	36	8.3
Western Tidewater	142,927	9	6.3	0	0.0	12	8.4
Eastern Region	1,762,588	144	8.2	2	0.1	126	7.1

Number of Cases and Rate for each Locality, District, and Region for these Diseases: 2008		**Chickenpox**		***Chlamydia trachomatis* Infection**		***Escherichia coli* Infection, Shiga Toxin-Producing**	
LOCALITY/DISTRICT/REGION	2007 POPULATION	REPORTED CASES	RATE PER 100,000	REPORTED CASES	RATE PER 100,000	REPORTED CASES	RATE PER 100,000
VIRGINIA TOTAL	7,712,091	1,489	19.31	31,205	404.6	241	3.1
LOCALITY							
Accomack County	38,485	1	2.6	204	530.1	0	0.0
Albemarle Co., Charlottesville	134,345	24	17.9	439	326.8	2	1.5
Alleghany Co, Clifton Forge, Covington	22,555	2	8.9	34	150.7	0	0.0
Amelia County	12,686	0	0.0	38	299.5	0	0.0
Amherst County	32,223	1	3.1	119	369.3	1	3.1
Appomattox County	14,199	5	35.2	31	218.3	0	0.0
Arlington County	204,568	43	21.0	484	236.6	8	3.9
Augusta Co., Staunton	94,756	38	40.1	243	256.4	2	2.1
Bath County	4,635	0	0.0	5	107.9	1	21.6
Bedford County and City	73,036	12	16.4	101	138.3	0	0.0
Bland County	6,883	0	0.0	6	87.2	0	0.0
Botetourt County	32,005	8	25.0	56	175.0	0	0.0
Brunswick County	17,811	1	5.6	106	595.1	0	0.0
Buchanan County	23,900	3	12.6	20	83.7	2	8.4
Buckingham County	15,932	0	0.0	28	175.7	1	6.3
Campbell County	52,840	11	20.8	128	242.2	0	0.0
Caroline County	27,282	4	14.7	123	450.8	0	0.0
Carroll County	29,120	13	44.6	28	96.2	0	0.0
Charles City County	7,166	0	0.0	28	390.7	0	0.0
Charlotte County	12,333	1	8.1	38	308.1	1	8.1
Chesterfield County	299,689	96	32.0	1074	358.4	6	2.0
Clarke County	14,361	1	7.0	27	188.0	1	7.0
Craig County	5,141	2	38.9	5	97.3	1	19.5
Culpeper County	45,723	3	6.6	142	310.6	0	0.0
Cumberland County	9,626	0	0.0	36	374.0	1	10.4
Dickenson County	16,168	1	6.2	18	111.3	0	0.0
Dinwiddie County	25,747	24	93.2	130	504.9	0	0.0
Essex County	10,862	0	0.0	64	589.2	0	0.0
Fairfax Co./City/Falls Church	1,044,538	155	14.8	1577	151.0	59	5.6
Fauquier County	66,328	6	9.0	120	180.9	17	25.6
Floyd County	14,641	1	6.8	16	109.3	0	0.0
Fluvanna County	25,329	0	0.0	50	197.4	0	0.0
Franklin County	51,133	2	3.9	113	221.0	1	2.0
Frederick Co., Winchester	98,613	17	17.2	292	296.1	6	6.1
Giles County	17,228	2	11.6	26	150.9	0	0.0
Gloucester County	38,336	6	15.7	79	206.1	1	2.6
Goochland County	20,615	0	0.0	45	218.3	0	0.0
Grayson County	16,072	1	6.2	20	124.4	0	0.0
Greene County	17,860	4	22.4	26	145.6	0	0.0
Greensville Co., Emporia	17,531	3	17.1	138	787.2	3	17.1
Halifax County	35,530	0	0.0	149	419.4	0	0.0
Hanover County	98,946	28	28.3	180	181.9	0	0.0
Henrico County	289,822	86	29.7	1310	452.0	3	1.0
Henry Co., Martinsville	70,122	6	8.6	258	367.9	1	1.4
Highland County	2,446	0	0.0	2	81.8	0	0.0
Isle of Wight County	35,035	0	0.0	148	422.4	0	0.0
James City County	61,195	2	3.3	127	207.5	3	4.9

Number of Cases and Rate for each Locality, District, and Region for these Diseases: 2008		**Chickenpox**		***Chlamydia trachomatis* Infection**		***Escherichia coli* Infection, Shiga Toxin-Producing**	
LOCALITY/DISTRICT/REGION	2007 POPULATION	REPORTED CASES	RATE PER 100,000	REPORTED CASES	RATE PER 100,000	REPORTED CASES	RATE PER 100,000
VIRGINIA TOTAL	7,712,091	1,489	19.31	31,205	404.6	241	3.1
LOCALITY							
King and Queen County	6,882	1	14.5	21	305.1	0	0.0
King George County	22,630	0	0.0	56	247.5	1	4.4
King William County	15,689	6	38.2	52	331.4	0	0.0
Lancaster County	11,532	1	8.7	45	390.2	0	0.0
Lee County	23,461	4	17.0	54	230.2	1	4.3
Loudoun County	278,797	104	37.3	415	148.9	28	10.0
Louisa County	31,961	4	12.5	92	287.9	1	3.1
Lunenburg County	13,018	0	0.0	51	391.8	1	7.7
Madison County	13,719	0	0.0	13	94.8	0	0.0
Mathews County	9,041	28	309.7	13	143.8	0	0.0
Mecklenburg County	32,106	0	0.0	168	523.3	1	3.1
Middlesex County	10,637	5	47.0	26	244.4	0	0.0
Montgomery County	89,193	13	14.6	217	243.3	3	3.4
Nelson County	15,245	5	32.8	36	236.1	1	6.6
New Kent County	17,109	3	17.5	34	198.7	0	0.0
Northampton County	13,401	2	14.9	76	567.1	0	0.0
Northumberland County	12,897	0	0.0	42	325.7	0	0.0
Nottoway County	15,755	2	12.7	52	330.1	0	0.0
Orange County	32,492	0	0.0	70	215.4	4	12.3
Page County	24,142	4	16.6	27	111.8	2	8.3
Patrick County	18,870	1	5.3	33	174.9	1	5.3
Pittsylvania County	60,826	27	44.4	200	328.8	1	1.6
Powhatan County	27,817	9	32.4	50	179.7	1	3.6
Prince Edward County	21,360	1	4.7	73	341.8	0	0.0
Prince George County	35,886	11	30.7	267	744.0	1	2.8
Pr. William Co./Manassas/M. Park	407,249	75	18.4	1314	322.7	9	2.2
Pulaski County	35,060	0	0.0	60	171.1	0	0.0
Rappahannock County	7,199	1	13.9	22	305.6	0	0.0
Richmond County	9,171	1	10.9	26	283.5	0	0.0
Roanoke County	90,420	10	11.1	194	214.6	1	1.1
Rockbridge Co., Lexington	28,524	1	3.5	43	150.8	0	0.0
Rockingham Co., Harrisonburg	117,563	75	63.8	223	189.7	9	7.7
Russell County	28,838	28	97.1	8	27.7	2	6.9
Scott County	22,787	1	4.4	34	149.2	1	4.4
Shenandoah County	40,403	5	12.4	65	160.9	0	0.0
Smyth County	32,050	10	31.2	53	165.4	0	0.0
Southampton County	17,654	0	0.0	84	475.8	0	0.0
Spotsylvania County	119,194	1	0.8	344	288.6	2	1.7
Stafford County	120,723	2	1.7	374	309.8	6	5.0
Surry County	7,089	0	0.0	34	479.6	0	0.0
Sussex County	12,222	0	0.0	70	572.7	0	0.0
Tazewell County	43,855	10	22.8	45	102.6	2	4.6
Warren County	36,294	4	11.0	87	239.7	2	5.5
Washington County	52,733	13	24.7	51	96.7	1	1.9
Westmoreland County	17,252	0	0.0	80	463.7	0	0.0
Wise Co., Norton	45,390	14	30.8	110	242.3	1	2.2
Wythe County	28,538	13	45.6	49	171.7	1	3.5
York Co., Poquoson	73,129	9	12.3	168	229.7	0	0.0

Number of Cases and Rate for each Locality, District, and Region for these Diseases: 2008		**Chickenpox**		***Chlamydia trachomatis* Infection**		***Escherichia coli* Infection, Shiga Toxin-Producing**	
LOCALITY/DISTRICT/REGION	2007 POPULATION	REPORTED CASES	RATE PER 100,000	REPORTED CASES	RATE PER 100,000	REPORTED CASES	RATE PER 100,000
VIRGINIA TOTAL	7,712,091	1,489	19.31	31,205	404.6	241	3.1
LOCALITY							
Alexandria	140,024	26	18.6	518	369.9	4	2.9
Bristol	17,593	1	5.7	29	164.8	0	0.0
Buena Vista	6,482	0	0.0	11	169.7	0	0.0
Chesapeake	219,154	52	23.7	1315	600.0	3	1.4
Colonial Heights	17,796	5	28.1	92	517.0	0	0.0
Danville	44,947	20	44.5	376	836.5	0	0.0
Franklin City	8,906	0	0.0	124	1392.3	0	0.0
Fredericksburg	22,410	1	4.5	187	834.4	0	0.0
Galax	6,824	4	58.6	10	146.5	0	0.0
Hampton	146,439	14	9.6	1415	966.3	4	2.7
Hopewell	23,028	1	4.3	201	872.9	0	0.0
Lynchburg	71,282	8	11.2	298	418.1	3	4.2
Newport News	179,153	29	16.2	2083	1162.7	1	0.6
Norfolk	235,747	22	9.3	2528	1072.3	3	1.3
Petersburg	32,885	8	24.3	474	1441.4	0	0.0
Portsmouth	101,967	8	7.8	1114	1092.5	0	0.0
Radford	16,133	0	0.0	61	378.1	0	0.0
Richmond City	200,123	8	4.0	2466	1232.2	2	1.0
Roanoke City	92,600	5	5.4	789	852.1	0	0.0
Salem	25,233	5	19.8	65	257.6	0	0.0
Suffolk	81,332	0	0.0	577	709.4	4	4.9
Virginia Beach	434,743	146	33.6	2153	495.2	10	2.3
Waynesboro	21,656	4	18.5	82	378.6	1	4.6
Williamsburg	12,434	5	40.2	85	683.6	1	8.0

Number of Cases and Rate for each Locality, District, and Region for these Diseases: 2008		**Chickenpox**		***Chlamydia trachomatis* Infection**		***Escherichia coli* Infection, Shiga Toxin-Producing**	
LOCALITY/DISTRICT/REGION	2007 POPULATION	REPORTED CASES	RATE PER 100,000	REPORTED CASES	RATE PER 100,000	REPORTED CASES	RATE PER 100,000
VIRGINIA TOTAL	7,712,091	1,489	19.31	31,205	404.6	241	3.1
DISTRICT/REGION							

Central Shenandoah	276,062	118	42.7	609	220.6	13	4.7
Lord Fairfax	213,813	31	14.5	498	232.9	11	5.1
Rappahannock	312,239	8	2.6	1084	347.2	9	2.9
Rappahannock/Rapidan	165,461	10	6.0	367	221.8	21	12.7
Thomas Jefferson	224,740	37	16.5	643	286.1	4	1.8
Northwest Region	1,192,315	204	17.1	3,201	268.5	58	4.9

Alexandria	140,024	26	18.6	518	369.9	4	2.9
Arlington	204,568	43	21.0	484	236.6	8	3.9
Fairfax	1,044,538	155	14.8	1577	151.0	59	5.6
Loudoun	278,797	104	37.3	415	148.9	28	10.0
Prince William	407,249	75	18.4	1314	322.7	9	2.2
Northern Region	2,075,176	403	19.4	4,308	207.6	108	5.2

Alleghany	175,354	27	15.4	354	201.9	2	1.1
Central Virginia	243,580	37	15.2	677	277.9	4	1.6
Cumberland Plateau	112,761	42	37.2	91	80.7	6	5.3
Lenowisco	91,638	19	20.7	198	216.1	3	3.3
Mount Rogers	189,813	55	29.0	246	129.6	2	1.1
New River	172,255	16	9.3	380	220.6	3	1.7
Pittsylvania/Danville	105,773	47	44.4	576	544.6	1	0.9
Roanoke City	92,600	5	5.4	789	852.1	0	0.0
West Piedmont	140,125	9	6.4	404	288.3	3	2.1
Southwest Region	1,323,899	257	19.4	3,715	280.6	24	1.8

Chesterfield	345,302	110	31.9	1216	352.2	7	2.0
Chickahominy	143,836	31	21.6	287	199.5	0	0.0
Crater	154,388	47	30.4	1314	851.1	4	2.6
Henrico	289,822	86	29.7	1310	452.0	3	1.0
Piedmont	100,710	4	4.0	316	313.8	4	4.0
Richmond City	200,123	8	4.0	2466	1232.2	2	1.0
Southside	85,447	1	1.2	423	495.0	1	1.2
Central Region	1,319,628	287	21.7	7,332	555.6	21	1.6

Chesapeake	219,154	52	23.7	1315	600.0	3	1.4
Eastern Shore	51,886	3	5.8	280	539.6	0	0.0
Hampton	146,439	14	9.6	1415	966.3	4	2.7
Norfolk	235,747	22	9.3	2528	1072.3	3	1.3
Peninsula	325,911	45	13.8	2463	755.7	5	1.5
Portsmouth	101,967	8	7.8	1114	1092.5	0	0.0
Three Rivers	142,299	48	33.7	448	314.8	1	0.7
Virginia Beach	434,743	146	33.6	2153	495.2	10	2.3
Western Tidewater	142,927	0	0.0	933	652.8	4	2.8
Eastern Region	1,801,073	338	18.8	12,649	702.3	30	1.7

Number of Cases and Rate for each Locality, District, and Region for these Diseases: 2008

LOCALITY/DISTRICT/REGION	2007 POPULATION	Giardiasis REPORTED CASES	Giardiasis RATE PER 100,000	Gonorrhea REPORTED CASES	Gonorrhea RATE PER 100,000	*H. influenzae* Infection, Invasive REPORTED CASES	*H. influenzae* Infection, Invasive RATE PER 100,000
VIRGINIA TOTAL	7,712,091	432	5.6	10,336	134.0	92	1.2
LOCALITY							
Accomack County	38,485	0	0.0	48	124.7	0	0.0
Albemarle Co., Charlottesville	134,345	22	16.4	124	92.3	2	1.5
Alleghany Co, Clifton Forge, Covington	22,555	0	0.0	2	8.9	0	0.0
Amelia County	12,686	0	0.0	10	78.8	0	0.0
Amherst County	32,223	1	3.1	34	105.5	1	3.1
Appomattox County	14,199	1	7.0	9	63.4	0	0.0
Arlington County	204,568	27	13.2	89	43.5	2	1.0
Augusta Co., Staunton	94,756	8	8.4	43	45.4	1	1.1
Bath County	4,635	0	0.0	3	64.7	0	0.0
Bedford County and City	73,036	4	5.5	22	30.1	1	1.4
Bland County	6,883	0	0.0	1	14.5	0	0.0
Botetourt County	32,005	2	6.2	4	12.5	0	0.0
Brunswick County	17,811	0	0.0	23	129.1	0	0.0
Buchanan County	23,900	2	8.4	2	8.4	0	0.0
Buckingham County	15,932	0	0.0	9	56.5	0	0.0
Campbell County	52,840	0	0.0	36	68.1	0	0.0
Caroline County	27,282	2	7.3	23	84.3	0	0.0
Carroll County	29,120	0	0.0	2	6.9	0	0.0
Charles City County	7,166	0	0.0	9	125.6	0	0.0
Charlotte County	12,333	0	0.0	8	64.9	0	0.0
Chesterfield County	299,689	10	3.3	349	116.5	3	1.0
Clarke County	14,361	1	7.0	6	41.8	0	0.0
Craig County	5,141	0	0.0	0	0.0	0	0.0
Culpeper County	45,723	0	0.0	11	24.1	1	2.2
Cumberland County	9,626	0	0.0	5	51.9	0	0.0
Dickenson County	16,168	0	0.0	0	0.0	0	0.0
Dinwiddie County	25,747	0	0.0	29	112.6	1	3.9
Essex County	10,862	0	0.0	34	313.0	0	0.0
Fairfax Co./City/Falls Church	1,044,538	78	7.5	224	21.4	6	0.6
Fauquier County	66,328	4	6.0	7	10.6	2	3.0
Floyd County	14,641	0	0.0	1	6.8	1	6.8
Fluvanna County	25,329	0	0.0	27	106.6	0	0.0
Franklin County	51,133	2	3.9	20	39.1	1	2.0
Frederick Co., Winchester	98,613	4	4.1	42	42.6	3	3.0
Giles County	17,228	0	0.0	3	17.4	1	5.8
Gloucester County	38,336	0	0.0	13	33.9	0	0.0
Goochland County	20,615	2	9.7	9	43.7	0	0.0
Grayson County	16,072	1	6.2	1	6.2	0	0.0
Greene County	17,860	2	11.2	6	33.6	0	0.0
Greensville Co., Emporia	17,531	0	0.0	33	188.2	0	0.0
Halifax County	35,530	0	0.0	27	76.0	0	0.0
Hanover County	98,946	6	6.1	33	33.4	3	3.0
Henrico County	289,822	26	9.0	468	161.5	8	2.8
Henry Co., Martinsville	70,122	2	2.9	74	105.5	1	1.4
Highland County	2,446	0	0.0	0	0.0	1	40.9
Isle of Wight County	35,035	1	2.9	57	162.7	0	0.0
James City County	61,195	2	3.3	30	49.0	0	0.0

Number of Cases and Rate for each Locality, District, and Region for these Diseases: 2008

LOCALITY/DISTRICT/REGION	2007 POPULATION	Giardiasis REPORTED CASES	Giardiasis RATE PER 100,000	Gonorrhea REPORTED CASES	Gonorrhea RATE PER 100,000	*H. influenzae* Infection, Invasive REPORTED CASES	*H. influenzae* Infection, Invasive RATE PER 100,000
VIRGINIA TOTAL	7,712,091	432	5.6	10,336	134.0	92	1.2
LOCALITY							
King and Queen County	6,882	0	0.0	4	58.1	0	0.0
King George County	22,630	0	0.0	7	30.9	0	0.0
King William County	15,689	1	6.4	14	89.2	1	6.4
Lancaster County	11,532	0	0.0	12	104.1	0	0.0
Lee County	23,461	0	0.0	4	17.0	0	0.0
Loudoun County	278,797	19	6.8	62	22.2	5	1.8
Louisa County	31,961	2	6.3	11	34.4	0	0.0
Lunenburg County	13,018	0	0.0	15	115.2	0	0.0
Madison County	13,719	0	0.0	4	29.2	0	0.0
Mathews County	9,041	0	0.0	2	22.1	0	0.0
Mecklenburg County	32,106	1	3.1	50	155.7	0	0.0
Middlesex County	10,637	0	0.0	9	84.6	0	0.0
Montgomery County	89,193	4	4.5	16	17.9	1	1.1
Nelson County	15,245	0	0.0	3	19.7	0	0.0
New Kent County	17,109	3	17.5	14	81.8	0	0.0
Northampton County	13,401	0	0.0	9	67.2	0	0.0
Northumberland County	12,897	0	0.0	12	93.0	0	0.0
Nottoway County	15,755	0	0.0	14	88.9	0	0.0
Orange County	32,492	5	15.4	21	64.6	1	3.1
Page County	24,142	0	0.0	4	16.6	0	0.0
Patrick County	18,870	0	0.0	4	21.2	0	0.0
Pittsylvania County	60,826	0	0.0	57	93.7	2	3.3
Powhatan County	27,817	1	3.6	10	35.9	0	0.0
Prince Edward County	21,360	0	0.0	28	131.1	0	0.0
Prince George County	35,886	0	0.0	76	211.8	0	0.0
Pr. William Co./Manassas/M. Park	407,249	19	4.7	243	59.7	2	0.5
Pulaski County	35,060	0	0.0	8	22.8	0	0.0
Rappahannock County	7,199	0	0.0	4	55.6	0	0.0
Richmond County	9,171	0	0.0	15	163.6	0	0.0
Roanoke County	90,420	5	5.5	46	50.9	0	0.0
Rockbridge Co., Lexington	28,524	2	7.0	2	7.0	1	3.5
Rockingham Co., Harrisonburg	117,563	8	6.8	43	36.6	2	1.7
Russell County	28,838	0	0.0	1	3.5	1	3.5
Scott County	22,787	0	0.0	2	8.8	1	4.4
Shenandoah County	40,403	1	2.5	1	2.5	1	2.5
Smyth County	32,050	0	0.0	6	18.7	1	3.1
Southampton County	17,654	0	0.0	23	130.3	0	0.0
Spotsylvania County	119,194	3	2.5	62	52.0	3	2.5
Stafford County	120,723	5	4.1	60	49.7	2	1.7
Surry County	7,089	0	0.0	12	169.3	0	0.0
Sussex County	12,222	0	0.0	30	245.5	0	0.0
Tazewell County	43,855	0	0.0	5	11.4	0	0.0
Warren County	36,294	3	8.3	13	35.8	0	0.0
Washington County	52,733	0	0.0	7	13.3	1	1.9
Westmoreland County	17,252	1	5.8	21	121.7	0	0.0
Wise Co., Norton	45,390	0	0.0	5	11.0	0	0.0
Wythe County	28,538	0	0.0	10	35.0	0	0.0
York Co., Poquoson	73,129	3	4.1	40	54.7	0	0.0

Number of Cases and Rate for each Locality, District, and Region for these Diseases: 2008

LOCALITY/DISTRICT/REGION	2007 POPULATION	Giardiasis REPORTED CASES	Giardiasis RATE PER 100,000	Gonorrhea REPORTED CASES	Gonorrhea RATE PER 100,000	*H. influenzae* Infection, Invasive REPORTED CASES	*H. influenzae* Infection, Invasive RATE PER 100,000
VIRGINIA TOTAL	7,712,091	432	5.6	10,336	134.0	92	1.2
LOCALITY							
Alexandria	140,024	18	12.9	104	74.3	0	0.0
Bristol	17,593	0	0.0	11	62.5	0	0.0
Buena Vista	6,482	0	0.0	1	15.4	0	0.0
Chesapeake	219,154	5	2.3	521	237.7	2	0.9
Colonial Heights	17,796	0	0.0	20	112.4	0	0.0
Danville	44,947	3	6.7	137	304.8	2	4.4
Franklin City	8,906	1	11.2	37	415.5	0	0.0
Fredericksburg	22,410	8	35.7	49	218.7	0	0.0
Galax	6,824	0	0.0	1	14.7	0	0.0
Hampton	146,439	7	4.8	633	432.3	2	1.4
Hopewell	23,028	1	4.3	89	386.5	1	4.3
Lynchburg	71,282	7	9.8	146	204.8	0	0.0
Newport News	179,153	20	11.2	977	545.3	2	1.1
Norfolk	235,747	8	3.4	1154	489.5	3	1.3
Petersburg	32,885	1	3.0	216	656.8	0	0.0
Portsmouth	101,967	1	1.0	565	554.1	0	0.0
Radford	16,133	0	0.0	9	55.8	1	6.2
Richmond City	200,123	10	5.0	1279	639.1	6	3.0
Roanoke City	92,600	11	11.9	303	327.2	2	2.2
Salem	25,233	1	4.0	18	71.3	0	0.0
Suffolk	81,332	6	7.4	171	210.2	0	0.0
Virginia Beach	434,743	23	5.3	731	168.1	7	1.6
Waynesboro	21,656	1	4.6	17	78.5	0	0.0
Williamsburg	12,434	4	32.2	16	128.7	0	0.0

Number of Cases and Rate for each Locality, District, and Region for these Diseases: 2008

LOCALITY/DISTRICT/REGION	2007 POPULATION	Giardiasis REPORTED CASES	Giardiasis RATE PER 100,000	Gonorrhea REPORTED CASES	Gonorrhea RATE PER 100,000	*H. influenzae* Infection, Invasive REPORTED CASES	*H. influenzae* Infection, Invasive RATE PER 100,000
VIRGINIA TOTAL	7,712,091	432	5.6	10,336	134.0	92	1.2
DISTRICT/REGION							

Central Shenandoah	276,062	19	6.9	109	39.5	5	1.8
Lord Fairfax	213,813	9	4.2	66	30.9	4	1.9
Rappahannock	312,239	18	5.8	201	64.4	5	1.6
Rappahannock/Rapidan	165,461	9	5.4	47	28.4	4	2.4
Thomas Jefferson	224,740	26	11.6	171	76.1	2	0.9
Northwest Region	1,192,315	81	6.8	594	49.8	20	1.7

Alexandria	140,024	18	12.9	104	74.3	0	0.0
Arlington	204,568	27	13.2	89	43.5	2	1.0
Fairfax	1,044,538	78	7.5	224	21.4	6	0.6
Loudoun	278,797	19	6.8	62	22.2	5	1.8
Prince William	407,249	19	4.7	243	59.7	2	0.5
Northern Region	2,075,176	161	7.8	722	34.8	15	0.7

Alleghany	175,354	8	4.6	70	39.9	0	0.0
Central Virginia	243,580	13	5.3	247	101.4	2	0.8
Cumberland Plateau	112,761	2	1.8	8	7.1	1	0.9
Lenowisco	91,638	0	0.0	11	12.0	1	1.1
Mount Rogers	189,813	1	0.5	39	20.5	2	1.1
New River	172,255	4	2.3	37	21.5	4	2.3
Pittsylvania/Danville	105,773	3	2.8	194	183.4	4	3.8
Roanoke City	92,600	11	11.9	303	327.2	2	2.2
West Piedmont	140,125	4	2.9	98	69.9	2	1.4
Southwest Region	1,323,899	46	3.5	1,007	76.1	18	1.4

Chesterfield	345,302	11	3.2	379	109.8	3	0.9
Chickahominy	143,836	11	7.6	65	45.2	3	2.1
Crater	154,388	2	1.3	485	314.1	2	1.3
Henrico	289,822	26	9.0	468	161.5	8	2.8
Piedmont	100,710	0	0.0	89	88.4	0	0.0
Richmond City	200,123	10	5.0	1,279	639.1	6	3.0
Southside	85,447	1	1.2	100	117.0	0	0.0
Central Region	1,319,628	61	4.6	2,865	217.1	22	1.7

Chesapeake	219,154	5	2.3	521	237.7	2	0.9
Eastern Shore	51,886	0	0.0	57	109.9	0	0.0
Hampton	146,439	7	4.8	633	432.3	2	1.4
Norfolk	235,747	8	3.4	1,154	489.5	3	1.3
Peninsula	325,911	29	8.9	1,063	326.2	2	0.6
Portsmouth	101,967	1	1.0	565	554.1	0	0.0
Three Rivers	142,299	2	1.4	136	95.6	1	0.7
Virginia Beach	434,743	23	5.3	731	168.1	7	1.6
Western Tidewater	142,927	8	5.6	288	201.5	0	0.0
Eastern Region	1,801,073	83	4.6	5,148	285.8	17	0.9

Number of Cases and Rate for each Locality, District, and Region for these Diseases: 2008

LOCALITY/DISTRICT/REGION	2007 POPULATION	Hepatitis A REPORTED CASES	Hepatitis A RATE PER 100,000	Hepatitis B, Acute REPORTED CASES	Hepatitis B, Acute RATE PER 100,000	Hepatitis C, Acute REPORTED CASES	Hepatitis C, Acute RATE PER 100,000
VIRGINIA TOTAL	7,712,091	51	0.7	130	1.7	8	0.1
LOCALITY							
Accomack County	38,485	0	0.0	0	0.0	0	0.0
Albemarle Co., Charlottesville	134,345	1	0.7	1	0.7	0	0.0
Alleghany Co, Clifton Forge, Covington	22,555	0	0.0	0	0.0	0	0.0
Amelia County	12,686	0	0.0	0	0.0	0	0.0
Amherst County	32,223	0	0.0	0	0.0	0	0.0
Appomattox County	14,199	0	0.0	0	0.0	0	0.0
Arlington County	204,568	2	1.0	0	0.0	0	0.0
Augusta Co., Staunton	94,756	0	0.0	0	0.0	0	0.0
Bath County	4,635	0	0.0	0	0.0	0	0.0
Bedford County and City	73,036	0	0.0	0	0.0	0	0.0
Bland County	6,883	0	0.0	0	0.0	0	0.0
Botetourt County	32,005	0	0.0	0	0.0	0	0.0
Brunswick County	17,811	0	0.0	0	0.0	0	0.0
Buchanan County	23,900	1	4.2	6	25.1	0	0.0
Buckingham County	15,932	0	0.0	0	0.0	0	0.0
Campbell County	52,840	0	0.0	0	0.0	0	0.0
Caroline County	27,282	0	0.0	0	0.0	1	3.7
Carroll County	29,120	0	0.0	0	0.0	0	0.0
Charles City County	7,166	0	0.0	1	14.0	0	0.0
Charlotte County	12,333	0	0.0	0	0.0	0	0.0
Chesterfield County	299,689	0	0.0	11	3.7	0	0.0
Clarke County	14,361	0	0.0	0	0.0	0	0.0
Craig County	5,141	0	0.0	0	0.0	0	0.0
Culpeper County	45,723	0	0.0	0	0.0	0	0.0
Cumberland County	9,626	0	0.0	1	10.4	0	0.0
Dickenson County	16,168	0	0.0	1	6.2	0	0.0
Dinwiddie County	25,747	0	0.0	0	0.0	0	0.0
Essex County	10,862	0	0.0	0	0.0	0	0.0
Fairfax Co./City/Falls Church	1,044,538	24	2.3	10	1.0	0	0.0
Fauquier County	66,328	0	0.0	1	1.5	0	0.0
Floyd County	14,641	0	0.0	1	6.8	0	0.0
Fluvanna County	25,329	0	0.0	0	0.0	0	0.0
Franklin County	51,133	1	2.0	1	2.0	0	0.0
Frederick Co., Winchester	98,613	0	0.0	3	3.0	0	0.0
Giles County	17,228	0	0.0	0	0.0	0	0.0
Gloucester County	38,336	0	0.0	0	0.0	0	0.0
Goochland County	20,615	0	0.0	1	4.9	0	0.0
Grayson County	16,072	0	0.0	0	0.0	0	0.0
Greene County	17,860	0	0.0	0	0.0	0	0.0
Greensville Co., Emporia	17,531	0	0.0	1	5.7	0	0.0
Halifax County	35,530	0	0.0	0	0.0	0	0.0
Hanover County	98,946	0	0.0	0	0.0	2	2.0
Henrico County	289,822	2	0.7	6	2.1	0	0.0
Henry Co., Martinsville	70,122	1	1.4	1	1.4	0	0.0
Highland County	2,446	0	0.0	0	0.0	0	0.0
Isle of Wight County	35,035	0	0.0	0	0.0	0	0.0
James City County	61,195	0	0.0	0	0.0	0	0.0

Number of Cases and Rate for each Locality, District, and Region for these Diseases: 2008

LOCALITY/DISTRICT/REGION	2007 POPULATION	Hepatitis A REPORTED CASES	Hepatitis A RATE PER 100,000	Hepatitis B, Acute REPORTED CASES	Hepatitis B, Acute RATE PER 100,000	Hepatitis C, Acute REPORTED CASES	Hepatitis C, Acute RATE PER 100,000
VIRGINIA TOTAL	7,712,091	51	0.7	130	1.7	8	0.1
LOCALITY							
King and Queen County	6,882	0	0.0	0	0.0	0	0.0
King George County	22,630	0	0.0	0	0.0	0	0.0
King William County	15,689	0	0.0	1	6.4	0	0.0
Lancaster County	11,532	0	0.0	0	0.0	0	0.0
Lee County	23,461	0	0.0	1	4.3	0	0.0
Loudoun County	278,797	0	0.0	1	0.4	0	0.0
Louisa County	31,961	0	0.0	0	0.0	0	0.0
Lunenburg County	13,018	0	0.0	0	0.0	0	0.0
Madison County	13,719	0	0.0	0	0.0	0	0.0
Mathews County	9,041	0	0.0	0	0.0	0	0.0
Mecklenburg County	32,106	0	0.0	0	0.0	0	0.0
Middlesex County	10,637	0	0.0	0	0.0	0	0.0
Montgomery County	89,193	2	2.2	3	3.4	0	0.0
Nelson County	15,245	0	0.0	0	0.0	0	0.0
New Kent County	17,109	0	0.0	0	0.0	0	0.0
Northampton County	13,401	0	0.0	1	7.5	0	0.0
Northumberland County	12,897	0	0.0	0	0.0	0	0.0
Nottoway County	15,755	0	0.0	0	0.0	0	0.0
Orange County	32,492	0	0.0	0	0.0	0	0.0
Page County	24,142	0	0.0	0	0.0	0	0.0
Patrick County	18,870	0	0.0	0	0.0	0	0.0
Pittsylvania County	60,826	0	0.0	0	0.0	0	0.0
Powhatan County	27,817	0	0.0	0	0.0	0	0.0
Prince Edward County	21,360	0	0.0	0	0.0	0	0.0
Prince George County	35,886	0	0.0	0	0.0	0	0.0
Pr. William Co./Manassas/M. Park	407,249	2	0.5	2	0.5	0	0.0
Pulaski County	35,060	0	0.0	16	45.6	0	0.0
Rappahannock County	7,199	0	0.0	0	0.0	0	0.0
Richmond County	9,171	0	0.0	0	0.0	0	0.0
Roanoke County	90,420	0	0.0	1	1.1	1	1.1
Rockbridge Co., Lexington	28,524	0	0.0	0	0.0	0	0.0
Rockingham Co., Harrisonburg	117,563	0	0.0	0	0.0	0	0.0
Russell County	28,838	1	3.5	0	0.0	0	0.0
Scott County	22,787	0	0.0	1	4.4	0	0.0
Shenandoah County	40,403	1	2.5	0	0.0	0	0.0
Smyth County	32,050	0	0.0	1	3.1	0	0.0
Southampton County	17,654	0	0.0	1	5.7	0	0.0
Spotsylvania County	119,194	0	0.0	0	0.0	0	0.0
Stafford County	120,723	0	0.0	0	0.0	0	0.0
Surry County	7,089	0	0.0	0	0.0	0	0.0
Sussex County	12,222	0	0.0	1	8.2	0	0.0
Tazewell County	43,855	0	0.0	4	9.1	2	4.6
Warren County	36,294	0	0.0	1	2.8	0	0.0
Washington County	52,733	0	0.0	1	1.9	0	0.0
Westmoreland County	17,252	0	0.0	0	0.0	0	0.0
Wise Co., Norton	45,390	0	0.0	1	2.2	0	0.0
Wythe County	28,538	0	0.0	3	10.5	0	0.0
York Co., Poquoson	73,129	0	0.0	0	0.0	0	0.0

Number of Cases and Rate for each Locality, District, and Region for these Diseases: 2008

LOCALITY/DISTRICT/REGION	2007 POPULATION	Hepatitis A REPORTED CASES	Hepatitis A RATE PER 100,000	Hepatitis B, Acute REPORTED CASES	Hepatitis B, Acute RATE PER 100,000	Hepatitis C, Acute REPORTED CASES	Hepatitis C, Acute RATE PER 100,000
VIRGINIA TOTAL	7,712,091	51	0.7	130	1.7	8	0.1
LOCALITY							
Alexandria	140,024	3	2.1	2	1.4	0	0.0
Bristol	17,593	0	0.0	0	0.0	0	0.0
Buena Vista	6,482	0	0.0	0	0.0	0	0.0
Chesapeake	219,154	0	0.0	4	1.8	0	0.0
Colonial Heights	17,796	0	0.0	0	0.0	0	0.0
Danville	44,947	0	0.0	0	0.0	0	0.0
Franklin City	8,906	0	0.0	0	0.0	0	0.0
Fredericksburg	22,410	0	0.0	0	0.0	0	0.0
Galax	6,824	0	0.0	0	0.0	0	0.0
Hampton	146,439	1	0.7	4	2.7	0	0.0
Hopewell	23,028	0	0.0	0	0.0	0	0.0
Lynchburg	71,282	0	0.0	0	0.0	0	0.0
Newport News	179,153	1	0.6	4	2.2	1	0.6
Norfolk	235,747	0	0.0	7	3.0	0	0.0
Petersburg	32,885	1	3.0	2	6.1	0	0.0
Portsmouth	101,967	0	0.0	1	1.0	0	0.0
Radford	16,133	0	0.0	4	24.8	0	0.0
Richmond City	200,123	1	0.5	14	7.0	1	0.5
Roanoke City	92,600	2	2.2	0	0.0	0	0.0
Salem	25,233	0	0.0	0	0.0	0	0.0
Suffolk	81,332	0	0.0	1	1.2	0	0.0
Virginia Beach	434,743	2	0.5	1	0.2	0	0.0
Waynesboro	21,656	2	9.2	0	0.0	0	0.0
Williamsburg	12,434	0	0.0	0	0.0	0	0.0

Number of Cases and Rate for each Locality, District, and Region for these Diseases: 2008

LOCALITY/DISTRICT/REGION	2007 POPULATION	Hepatitis A REPORTED CASES	Hepatitis A RATE PER 100,000	Hepatitis B, Acute REPORTED CASES	Hepatitis B, Acute RATE PER 100,000	Hepatitis C, Acute REPORTED CASES	Hepatitis C, Acute RATE PER 100,000
VIRGINIA TOTAL	7,712,091	51	0.7	130	1.7	8	0.1
DISTRICT/REGION							

Central Shenandoah	276,062	2	0.7	0	0.0	0	0.0
Lord Fairfax	213,813	1	0.5	4	1.9	0	0.0
Rappahannock	312,239	0	0.0	0	0.0	1	0.3
Rappahannock/Rapidan	165,461	0	0.0	1	0.6	0	0.0
Thomas Jefferson	224,740	1	0.4	1	0.4	0	0.0
Northwest Region	1,192,315	4	0.3	6	0.5	1	0.1

Alexandria	140,024	3	2.1	2	1.4	0	0.0
Arlington	204,568	2	1.0	0	0.0	0	0.0
Fairfax	1,044,538	24	2.3	10	1.0	0	0.0
Loudoun	278,797	0	0.0	1	0.4	0	0.0
Prince William	407,249	2	0.5	2	0.5	0	0.0
Northern Region	2,075,176	31	1.5	15	0.7	0	0.0

Alleghany	175,354	0	0.0	1	0.6	1	0.6
Central Virginia	243,580	0	0.0	0	0.0	0	0.0
Cumberland Plateau	112,761	2	1.8	11	9.8	2	1.8
Lenowisco	91,638	0	0.0	3	3.3	0	0.0
Mount Rogers	189,813	0	0.0	5	2.6	0	0.0
New River	172,255	2	1.2	24	13.9	0	0.0
Pittsylvania/Danville	105,773	0	0.0	0	0.0	0	0.0
Roanoke City	92,600	2	2.2	0	0.0	0	0.0
West Piedmont	140,125	2	1.4	2	1.4	0	0.0
Southwest Region	1,323,899	8	0.6	46	3.5	3	0.2

Chesterfield	345,302	0	0.0	11	3.2	0	0.0
Chickahominy	143,836	0	0.0	2	1.4	2	1.4
Crater	154,388	1	0.6	4	2.6	0	0.0
Henrico	289,822	2	0.7	6	2.1	0	0.0
Piedmont	100,710	0	0.0	1	1.0	0	0.0
Richmond City	200,123	1	0.5	14	7.0	1	0.5
Southside	85,447	0	0.0	0	0.0	0	0.0
Central Region	1,319,628	4	0.3	38	2.9	3	0.2

Chesapeake	219,154	0	0.0	4	1.8	0	0.0
Eastern Shore	51,886	0	0.0	1	1.9	0	0.0
Hampton	146,439	1	0.7	4	2.7	0	0.0
Norfolk	235,747	0	0.0	7	3.0	0	0.0
Peninsula	325,911	1	0.3	4	1.2	1	0.3
Portsmouth	101,967	0	0.0	1	1.0	0	0.0
Three Rivers	142,299	0	0.0	1	0.7	0	0.0
Virginia Beach	434,743	2	0.5	1	0.2	0	0.0
Western Tidewater	142,927	0	0.0	2	1.4	0	0.0
Eastern Region	1,801,073	4	0.2	25	1.4	1	0.1

Number of Cases and Rate for each Locality, District, and Region for these Diseases: 2008

LOCALITY/DISTRICT/REGION	2007 POPULATION	HIV Infection REPORTED CASES	HIV Infection RATE PER 100,000	Influenza REPORTED CASES	Influenza RATE PER 100,000	Kawasaki Syndrome REPORTED CASES	Kawasaki Syndrome RATE PER 100,000
VIRGINIA TOTAL	7,712,091	844	10.9	24,580	318.7	3	0.0
LOCALITY							
Accomack County	38,485	3	7.8	28	72.8	0	0.0
Albemarle Co., Charlottesville	134,345	6	4.5	388	288.8	0	0.0
Alleghany Co, Clifton Forge, Covington	22,555	0	0.0	54	239.4	0	0.0
Amelia County	12,686	1	7.9	0	0.0	0	0.0
Amherst County	32,223	1	3.1	173	536.9	0	0.0
Appomattox County	14,199	1	7.0	143	1007.1	0	0.0
Arlington County	204,568	33	16.1	176	86.0	0	0.0
Augusta Co., Staunton	94,756	4	4.2	0	0.0	0	0.0
Bath County	4,635	0	0.0	39	841.4	0	0.0
Bedford County and City	73,036	1	1.4	293	401.2	0	0.0
Bland County	6,883	0	0.0	0	0.0	0	0.0
Botetourt County	32,005	1	3.1	3	9.4	0	0.0
Brunswick County	17,811	3	16.8	0	0.0	0	0.0
Buchanan County	23,900	0	0.0	0	0.0	0	0.0
Buckingham County	15,932	1	6.3	2	12.6	0	0.0
Campbell County	52,840	5	9.5	89	168.4	0	0.0
Caroline County	27,282	3	11.0	2	7.3	0	0.0
Carroll County	29,120	0	0.0	29	99.6	0	0.0
Charles City County	7,166	1	14.0	0	0.0	0	0.0
Charlotte County	12,333	0	0.0	0	0.0	0	0.0
Chesterfield County	299,689	33	11.0	2849	950.7	0	0.0
Clarke County	14,361	0	0.0	62	431.7	0	0.0
Craig County	5,141	0	0.0	23	447.4	0	0.0
Culpeper County	45,723	2	4.4	160	349.9	0	0.0
Cumberland County	9,626	0	0.0	0	0.0	0	0.0
Dickenson County	16,168	0	0.0	0	0.0	0	0.0
Dinwiddie County	25,747	0	0.0	12	46.6	0	0.0
Essex County	10,862	0	0.0	0	0.0	0	0.0
Fairfax Co./City/Falls Church	1,044,538	93	8.9	1958	187.5	0	0.0
Fauquier County	66,328	1	1.5	26	39.2	0	0.0
Floyd County	14,641	0	0.0	4	27.3	0	0.0
Fluvanna County	25,329	0	0.0	1	3.9	0	0.0
Franklin County	51,133	2	3.9	65	127.1	0	0.0
Frederick Co., Winchester	98,613	5	5.1	627	635.8	0	0.0
Giles County	17,228	0	0.0	1	5.8	0	0.0
Gloucester County	38,336	0	0.0	0	0.0	0	0.0
Goochland County	20,615	2	9.7	0	0.0	0	0.0
Grayson County	16,072	3	18.7	31	192.9	0	0.0
Greene County	17,860	0	0.0	6	33.6	0	0.0
Greensville Co., Emporia	17,531	4	22.8	130	741.5	0	0.0
Halifax County	35,530	1	2.8	259	729.0	0	0.0
Hanover County	98,946	6	6.1	836	844.9	0	0.0
Henrico County	289,822	36	12.4	3575	1233.5	0	0.0
Henry Co., Martinsville	70,122	0	0.0	29	41.4	0	0.0
Highland County	2,446	0	0.0	0	0.0	0	0.0
Isle of Wight County	35,035	6	17.1	3	8.6	0	0.0
James City County	61,195	4	6.5	0	0.0	1	1.6

Number of Cases and Rate for each Locality, District, and Region for these Diseases: 2008

LOCALITY/DISTRICT/REGION	2007 POPULATION	HIV Infection REPORTED CASES	HIV Infection RATE PER 100,000	Influenza REPORTED CASES	Influenza RATE PER 100,000	Kawasaki Syndrome REPORTED CASES	Kawasaki Syndrome RATE PER 100,000
VIRGINIA TOTAL	7,712,091	844	10.9	24,580	318.7	3	0.0
LOCALITY							
King and Queen County	6,882	0	0.0	0	0.0	0	0.0
King George County	22,630	0	0.0	22	97.2	0	0.0
King William County	15,689	1	6.4	5	31.9	0	0.0
Lancaster County	11,532	0	0.0	1	8.7	0	0.0
Lee County	23,461	0	0.0	38	162.0	0	0.0
Loudoun County	278,797	13	4.7	909	326.0	0	0.0
Louisa County	31,961	0	0.0	20	62.6	0	0.0
Lunenburg County	13,018	1	7.7	4	30.7	0	0.0
Madison County	13,719	1	7.3	2	14.6	0	0.0
Mathews County	9,041	1	11.1	1	11.1	0	0.0
Mecklenburg County	32,106	6	18.7	16	49.8	0	0.0
Middlesex County	10,637	0	0.0	1	9.4	0	0.0
Montgomery County	89,193	2	2.2	84	94.2	0	0.0
Nelson County	15,245	1	6.6	3	19.7	0	0.0
New Kent County	17,109	2	11.7	0	0.0	0	0.0
Northampton County	13,401	1	7.5	15	111.9	0	0.0
Northumberland County	12,897	0	0.0	0	0.0	0	0.0
Nottoway County	15,755	1	6.3	15	95.2	0	0.0
Orange County	32,492	0	0.0	7	21.5	0	0.0
Page County	24,142	0	0.0	99	410.1	0	0.0
Patrick County	18,870	0	0.0	16	84.8	0	0.0
Pittsylvania County	60,826	2	3.3	82	134.8	0	0.0
Powhatan County	27,817	6	21.6	2	7.2	0	0.0
Prince Edward County	21,360	0	0.0	268	1254.7	0	0.0
Prince George County	35,886	3	8.4	1	2.8	0	0.0
Pr. William Co./Manassas/M. Park	407,249	41	10.1	168	41.3	0	0.0
Pulaski County	35,060	2	5.7	22	62.7	0	0.0
Rappahannock County	7,199	0	0.0	1	13.9	0	0.0
Richmond County	9,171	0	0.0	6	65.4	0	0.0
Roanoke County	90,420	4	4.4	96	106.2	0	0.0
Rockbridge Co., Lexington	28,524	0	0.0	9	31.6	0	0.0
Rockingham Co., Harrisonburg	117,563	2	1.7	801	681.3	0	0.0
Russell County	28,838	0	0.0	0	0.0	0	0.0
Scott County	22,787	1	4.4	0	0.0	0	0.0
Shenandoah County	40,403	0	0.0	29	71.8	0	0.0
Smyth County	32,050	1	3.1	344	1073.3	0	0.0
Southampton County	17,654	1	5.7	0	0.0	0	0.0
Spotsylvania County	119,194	9	7.6	143	120.0	0	0.0
Stafford County	120,723	3	2.5	86	71.2	0	0.0
Surry County	7,089	2	28.2	0	0.0	0	0.0
Sussex County	12,222	0	0.0	0	0.0	0	0.0
Tazewell County	43,855	0	0.0	7	16.0	0	0.0
Warren County	36,294	2	5.5	31	85.4	0	0.0
Washington County	52,733	3	5.7	519	984.2	0	0.0
Westmoreland County	17,252	0	0.0	2	11.6	0	0.0
Wise Co., Norton	45,390	2	4.4	165	363.5	0	0.0
Wythe County	28,538	0	0.0	136	476.6	0	0.0
York Co., Poquoson	73,129	2	2.7	132	180.5	0	0.0

Number of Cases and Rate for each Locality, District, and Region for these Diseases: 2008

LOCALITY/DISTRICT/REGION	2007 POPULATION	HIV Infection REPORTED CASES	HIV Infection RATE PER 100,000	Influenza REPORTED CASES	Influenza RATE PER 100,000	Kawasaki Syndrome REPORTED CASES	Kawasaki Syndrome RATE PER 100,000
VIRGINIA TOTAL	7,712,091	844	10.9	24,580	318.7	3	0.0
LOCALITY							
Alexandria	140,024	22	15.7	675	482.1	0	0.0
Bristol	17,593	0	0.0	10	56.8	0	0.0
Buena Vista	6,482	0	0.0	0	0.0	0	0.0
Chesapeake	219,154	35	16.0	26	11.9	0	0.0
Colonial Heights	17,796	0	0.0	2	11.2	0	0.0
Danville	44,947	5	11.1	142	315.9	0	0.0
Franklin City	8,906	4	44.9	0	0.0	0	0.0
Fredericksburg	22,410	3	13.4	219	977.2	0	0.0
Galax	6,824	0	0.0	342	5011.7	0	0.0
Hampton	146,439	36	24.6	533	364.0	0	0.0
Hopewell	23,028	3	13.0	123	534.1	0	0.0
Lynchburg	71,282	5	7.0	1505	2111.3	0	0.0
Newport News	179,153	49	27.4	979	546.5	1	0.6
Norfolk	235,747	98	41.6	1061	450.1	0	0.0
Petersburg	32,885	17	51.7	246	748.1	0	0.0
Portsmouth	101,967	28	27.5	24	23.5	0	0.0
Radford	16,133	0	0.0	37	229.3	0	0.0
Richmond City	200,123	96	48.0	1435	717.1	0	0.0
Roanoke City	92,600	19	20.5	74	79.9	1	1.1
Salem	25,233	0	0.0	93	368.6	0	0.0
Suffolk	81,332	12	14.8	5	6.1	0	0.0
Virginia Beach	434,743	34	7.8	151	34.7	0	0.0
Waynesboro	21,656	0	0.0	0	0.0	0	0.0
Williamsburg	12,434	0	0.0	514	4133.8	0	0.0

Number of Cases and Rate for each Locality, District, and Region for these Diseases: 2008

LOCALITY/DISTRICT/REGION	2007 POPULATION	HIV Infection REPORTED CASES	HIV Infection RATE PER 100,000	Influenza REPORTED CASES	Influenza RATE PER 100,000	Kawasaki Syndrome REPORTED CASES	Kawasaki Syndrome RATE PER 100,000
VIRGINIA TOTAL	7,712,091	844	10.9	24,580	318.7	3	0.0
DISTRICT/REGION							

Central Shenandoah	276,062	6	2.2	849	307.5	0	0.0
Lord Fairfax	213,813	7	3.3	848	396.6	0	0.0
Rappahannock	312,239	18	5.8	472	151.2	0	0.0
Rappahannock/Rapidan	165,461	4	2.4	196	118.5	0	0.0
Thomas Jefferson	224,740	7	3.1	418	186.0	0	0.0
Northwest Region	1,192,315	42	3.5	2,783	233.4	0	0.0

Alexandria	140,024	22	15.7	675	482.1	0	0.0
Arlington	204,568	33	16.1	176	86.0	0	0.0
Fairfax	1,044,538	93	8.9	1958	187.5	0	0.0
Loudoun	278,797	13	4.7	909	326.0	0	0.0
Prince William	407,249	41	10.1	168	41.3	0	0.0
Northern Region	2,075,176	202	9.7	3,886	187.3	0	0.0

Alleghany	175,354	5	2.9	269	153.4	0	0.0
Central Virginia	243,580	13	5.3	2203	904.4	0	0.0
Cumberland Plateau	112,761	0	0.0	7	6.2	0	0.0
Lenowisco	91,638	3	3.3	203	221.5	0	0.0
Mount Rogers	189,813	7	3.7	1411	743.4	0	0.0
New River	172,255	4	2.3	148	85.9	0	0.0
Pittsylvania/Danville	105,773	7	6.6	224	211.8	0	0.0
Roanoke City	92,600	19	20.5	74	79.9	1	1.1
West Piedmont	140,125	2	1.4	110	78.5	0	0.0
Southwest Region	1,323,899	60	4.5	4,649	351.2	1	0.1

Chesterfield	345,302	39	11.3	2853	826.2	0	0.0
Chickahominy	143,836	11	7.6	836	581.2	0	0.0
Crater	154,388	29	18.8	512	331.6	0	0.0
Henrico	289,822	36	12.4	3575	1233.5	0	0.0
Piedmont	100,710	4	4.0	289	287.0	0	0.0
Richmond City	200,123	96	48.0	1435	717.1	0	0.0
Southside	85,447	10	11.7	275	321.8	0	0.0
Central Region	1,319,628	225	17.1	9,775	740.7	0	0.0

Chesapeake	219,154	35	16.0	26	11.9	0	0.0
Eastern Shore	51,886	4	7.7	43	82.9	0	0.0
Hampton	146,439	36	24.6	533	364.0	0	0.0
Norfolk	235,747	98	41.6	1061	450.1	0	0.0
Peninsula	325,911	55	16.9	1625	498.6	2	0.6
Portsmouth	101,967	28	27.5	24	23.5	0	0.0
Three Rivers	142,299	2	1.4	16	11.2	0	0.0
Virginia Beach	434,743	34	7.8	151	34.7	0	0.0
Western Tidewater	142,927	23	16.1	8	5.6	0	0.0
Eastern Region	1,801,073	315	17.5	3,487	193.6	2	0.1

Number of Cases and Rate for each Locality, District, and Region for these Diseases: 2008

LOCALITY/DISTRICT/REGION	2007 POPULATION	Lead-Elevated Blood Levels in Children Age 0-15 years REPORTED CASES	Lead-Elevated Blood Levels in Children Age 0-15 years RATE PER 100,000	Legionellosis REPORTED CASES	Legionellosis RATE PER 100,000	Listeriosis REPORTED CASES	Listeriosis RATE PER 100,000
VIRGINIA TOTAL	7,712,091	307	19.0	66	0.9	17	0.2
LOCALITY							
Accomack County	38,485	7	92.3	1	2.6	0	0.0
Albemarle Co., Charlottesville	134,345	5	20.2	5	3.7	0	0.0
Alleghany Co, Clifton Forge, Covington	22,555	3	72.1	0	0.0	0	0.0
Amelia County	12,686	0	0.0	0	0.0	0	0.0
Amherst County	32,223	1	17.1	0	0.0	0	0.0
Appomattox County	14,199	0	0.0	0	0.0	0	0.0
Arlington County	204,568	5	15.1	1	0.5	2	1.0
Augusta Co., Staunton	94,756	2	15.2	0	0.0	0	0.0
Bath County	4,635	1	151.5	0	0.0	0	0.0
Bedford County and City	73,036	0	0.0	0	0.0	0	0.0
Bland County	6,883	0	0.0	0	0.0	0	0.0
Botetourt County	32,005	0	0.0	0	0.0	0	0.0
Brunswick County	17,811	1	35.0	0	0.0	0	0.0
Buchanan County	23,900	1	26.1	1	4.2	0	0.0
Buckingham County	15,932	2	76.6	0	0.0	0	0.0
Campbell County	52,840	3	29.5	0	0.0	0	0.0
Caroline County	27,282	4	68.5	1	3.7	0	0.0
Carroll County	29,120	0	0.0	0	0.0	0	0.0
Charles City County	7,166	0	0.0	0	0.0	0	0.0
Charlotte County	12,333	1	42.8	0	0.0	0	0.0
Chesterfield County	299,689	4	6.0	1	0.3	0	0.0
Clarke County	14,361	1	38.3	0	0.0	0	0.0
Craig County	5,141	0	0.0	0	0.0	0	0.0
Culpeper County	45,723	2	19.9	0	0.0	0	0.0
Cumberland County	9,626	0	0.0	0	0.0	0	0.0
Dickenson County	16,168	0	0.0	0	0.0	0	0.0
Dinwiddie County	25,747	1	20.2	0	0.0	0	0.0
Essex County	10,862	1	48.9	0	0.0	0	0.0
Fairfax Co./City/Falls Church	1,044,538	26	11.7	9	0.9	2	0.2
Fauquier County	66,328	0	0.0	1	1.5	0	0.0
Floyd County	14,641	0	0.0	0	0.0	0	0.0
Fluvanna County	25,329	0	0.0	0	0.0	0	0.0
Franklin County	51,133	3	32.0	1	2.0	0	0.0
Frederick Co., Winchester	98,613	0	0.0	1	1.0	0	0.0
Giles County	17,228	0	0.0	0	0.0	0	0.0
Gloucester County	38,336	0	0.0	0	0.0	0	0.0
Goochland County	20,615	0	0.0	0	0.0	0	0.0
Grayson County	16,072	0	0.0	0	0.0	0	0.0
Greene County	17,860	0	0.0	0	0.0	0	0.0
Greensville Co., Emporia	17,531	7	242.7	0	0.0	0	0.0
Halifax County	35,530	2	29.4	0	0.0	1	2.8
Hanover County	98,946	2	9.7	0	0.0	0	0.0
Henrico County	289,822	13	20.8	3	1.0	0	0.0
Henry Co., Martinsville	70,122	1	8.0	0	0.0	0	0.0
Highland County	2,446	0	0.0	0	0.0	0	0.0
Isle of Wight County	35,035	0	0.0	0	0.0	0	0.0
James City County	61,195	0	0.0	0	0.0	0	0.0

Number of Cases and Rate for each Locality, District, and Region for these Diseases: 2008

LOCALITY/DISTRICT/REGION	2007 POPULATION	Lead-Elevated Blood Levels in Children Age 0-15 years REPORTED CASES	Lead-Elevated Blood Levels in Children Age 0-15 years RATE PER 100,000	Legionellosis REPORTED CASES	Legionellosis RATE PER 100,000	Listeriosis REPORTED CASES	Listeriosis RATE PER 100,000
VIRGINIA TOTAL	7,712,091	307	19.0	66	0.9	17	0.2
LOCALITY							
King and Queen County	6,882	0	0.0	0	0.0	0	0.0
King George County	22,630	0	0.0	1	4.4	0	0.0
King William County	15,689	1	29.4	0	0.0	0	0.0
Lancaster County	11,532	0	0.0	0	0.0	0	0.0
Lee County	23,461	0	0.0	1	4.3	0	0.0
Loudoun County	278,797	2	2.6	3	1.1	1	0.4
Louisa County	31,961	1	15.7	0	0.0	0	0.0
Lunenburg County	13,018	2	97.0	0	0.0	1	7.7
Madison County	13,719	1	38.9	0	0.0	0	0.0
Mathews County	9,041	2	150.8	0	0.0	0	0.0
Mecklenburg County	32,106	3	53.4	0	0.0	0	0.0
Middlesex County	10,637	1	64.4	0	0.0	0	0.0
Montgomery County	89,193	1	7.1	1	1.1	1	1.1
Nelson County	15,245	0	0.0	0	0.0	0	0.0
New Kent County	17,109	2	59.6	1	5.8	0	0.0
Northampton County	13,401	4	153.6	0	0.0	0	0.0
Northumberland County	12,897	0	0.0	0	0.0	0	0.0
Nottoway County	15,755	5	177.3	0	0.0	0	0.0
Orange County	32,492	1	15.6	0	0.0	0	0.0
Page County	24,142	1	22.3	0	0.0	0	0.0
Patrick County	18,870	0	0.0	0	0.0	0	0.0
Pittsylvania County	60,826	1	8.9	0	0.0	1	1.6
Powhatan County	27,817	1	18.7	0	0.0	0	0.0
Prince Edward County	21,360	1	26.7	0	0.0	1	4.7
Prince George County	35,886	0	0.0	0	0.0	0	0.0
Pr. William Co./Manassas/M. Park	407,249	2	1.9	2	0.5	1	0.2
Pulaski County	35,060	0	0.0	0	0.0	1	2.9
Rappahannock County	7,199	0	0.0	0	0.0	0	0.0
Richmond County	9,171	0	0.0	0	0.0	0	0.0
Roanoke County	90,420	0	0.0	3	3.3	0	0.0
Rockbridge Co., Lexington	28,524	0	0.0	0	0.0	0	0.0
Rockingham Co., Harrisonburg	117,563	2	8.8	3	2.6	0	0.0
Russell County	28,838	2	39.4	1	3.5	0	0.0
Scott County	22,787	1	23.5	0	0.0	0	0.0
Shenandoah County	40,403	2	25.6	0	0.0	0	0.0
Smyth County	32,050	2	35.3	1	3.1	0	0.0
Southampton County	17,654	2	64.2	0	0.0	0	0.0
Spotsylvania County	119,194	4	13.9	1	0.8	0	0.0
Stafford County	120,723	1	3.4	1	0.8	0	0.0
Surry County	7,089	0	0.0	0	0.0	0	0.0
Sussex County	12,222	3	161.0	0	0.0	0	0.0
Tazewell County	43,855	2	25.8	0	0.0	0	0.0
Warren County	36,294	0	0.0	1	2.8	0	0.0
Washington County	52,733	0	0.0	1	1.9	0	0.0
Westmoreland County	17,252	0	0.0	0	0.0	0	0.0
Wise Co., Norton	45,390	0	0.0	2	4.4	0	0.0
Wythe County	28,538	2	38.3	0	0.0	0	0.0
York Co., Poquoson	73,129	0	0.0	1	1.4	0	0.0

Number of Cases and Rate for each Locality, District, and Region for these Diseases: 2008

LOCALITY/DISTRICT/REGION	2007 POPULATION	Lead-Elevated Blood Levels in Children Age 0-15 years REPORTED CASES	Lead-Elevated Blood Levels in Children Age 0-15 years RATE PER 100,000	Legionellosis REPORTED CASES	Legionellosis RATE PER 100,000	Listeriosis REPORTED CASES	Listeriosis RATE PER 100,000
VIRGINIA TOTAL	7,712,091	307	19.0	66	0.9	17	0.2
LOCALITY							
Alexandria	140,024	4	15.5	0	0.0	0	0.0
Bristol	17,593	1	32.7	0	0.0	0	0.0
Buena Vista	6,482	0	0.0	0	0.0	0	0.0
Chesapeake	219,154	4	8.1	0	0.0	0	0.0
Colonial Heights	17,796	0	0.0	0	0.0	0	0.0
Danville	44,947	8	92.7	0	0.0	0	0.0
Franklin City	8,906	0	0.0	0	0.0	0	0.0
Fredericksburg	22,410	3	63.3	0	0.0	1	4.5
Galax	6,824	1	72.4	0	0.0	0	0.0
Hampton	146,439	6	20.0	2	1.4	0	0.0
Hopewell	23,028	4	73.4	2	8.7	0	0.0
Lynchburg	71,282	3	21.7	0	0.0	1	1.4
Newport News	179,153	8	17.7	1	0.6	1	0.6
Norfolk	235,747	21	38.0	0	0.0	1	0.4
Petersburg	32,885	11	149.5	1	3.0	0	0.0
Portsmouth	101,967	9	37.9	0	0.0	0	0.0
Radford	16,133	1	45.9	0	0.0	0	0.0
Richmond City	200,123	46	112.3	6	3.0	0	0.0
Roanoke City	92,600	12	65.1	2	2.2	1	1.1
Salem	25,233	0	0.0	1	4.0	0	0.0
Suffolk	81,332	4	20.8	0	0.0	0	0.0
Virginia Beach	434,743	1	1.0	2	0.5	0	0.0
Waynesboro	21,656	5	109.5	0	0.0	0	0.0
Williamsburg	12,434	1	52.4	0	0.0	0	0.0

Number of Cases and Rate for each Locality, District, and Region for these Diseases: 2008

LOCALITY/DISTRICT/REGION	2007 POPULATION	Lead-Elevated Blood Levels in Children (Age 0-15 years) REPORTED CASES	Lead-Elevated Blood Levels in Children (Age 0-15 years) RATE PER 100,000	Legionellosis REPORTED CASES	Legionellosis RATE PER 100,000	Listeriosis REPORTED CASES	Listeriosis RATE PER 100,000
VIRGINIA TOTAL	7,712,091	307	19.0	66	0.9	17	0.2
DISTRICT/REGION							

Central Shenandoah	276,062	10	21.2	3	1.1	0	0.0
Lord Fairfax	213,813	4	9.1	2	0.9	0	0.0
Rappahannock	312,239	12	16.2	4	1.3	1	0.3
Rappahannock/Rapidan	165,461	4	11.6	1	0.6	0	0.0
Thomas Jefferson	224,740	6	13.9	5	2.2	0	0.0
Northwest Region	1,192,315	36	14.8	15	1.3	1	0.1

Alexandria	140,024	4	15.5	0	0.0	0	0.0
Arlington	204,568	5	15.1	1	0.5	2	1.0
Fairfax	1,044,538	26	11.7	9	0.9	2	0.2
Loudoun	278,797	2	2.6	3	1.1	1	0.4
Prince William	407,249	2	1.9	2	0.5	1	0.2
Northern Region	2,075,176	39	8.4	15	0.7	6	0.3

Alleghany	175,354	3	9.0	4	2.3	0	0.0
Central Virginia	243,580	7	15.2	0	0.0	1	0.4
Cumberland Plateau	112,761	5	25.8	2	1.8	0	0.0
Lenowisco	91,638	1	5.9	3	3.3	0	0.0
Mount Rogers	189,813	6	18.2	2	1.1	0	0.0
New River	172,255	2	7.1	1	0.6	2	1.2
Pittsylvania/Danville	105,773	9	45.4	0	0.0	1	0.9
Roanoke City	92,600	12	65.1	2	2.2	1	1.1
West Piedmont	140,125	4	16.0	1	0.7	0	0.0
Southwest Region	1,323,899	49	20.4	15	1.1	5	0.4

Chesterfield	345,302	5	6.7	1	0.3	0	0.0
Chickahominy	143,836	4	13.9	1	0.7	0	0.0
Crater	154,388	26	85.4	3	1.9	0	0.0
Henrico	289,822	13	20.8	3	1.0	0	0.0
Piedmont	100,710	11	61.1	0	0.0	2	2.0
Richmond City	200,123	46	112.3	6	3.0	0	0.0
Southside	85,447	6	39.3	0	0.0	1	1.2
Central Region	1,319,628	111	41.0	14	1.1	3	0.2

Chesapeake	219,154	4	8.1	0	0.0	0	0.0
Eastern Shore	51,886	11	108.0	1	1.9	0	0.0
Hampton	146,439	6	20.0	2	1.4	0	0.0
Norfolk	235,747	21	38.0	0	0.0	1	0.4
Peninsula	325,911	9	12.5	2	0.6	1	0.3
Portsmouth	101,967	9	37.9	0	0.0	0	0.0
Three Rivers	142,299	5	19.9	0	0.0	0	0.0
Virginia Beach	434,743	1	1.0	2	0.5	0	0.0
Western Tidewater	142,927	6	19.1	0	0.0	0	0.0
Eastern Region	1,801,073	72	18.2	7	0.4	2	0.1

Number of Cases and Rate for each Locality, District, and Region for these Diseases: 2008

LOCALITY/DISTRICT/REGION	2007 POPULATION	Lyme Disease REPORTED CASES	Lyme Disease RATE PER 100,000	Malaria REPORTED CASES	Malaria RATE PER 100,000	Meningococcal Disease REPORTED CASES	Meningococcal Disease RATE PER 100,000
VIRGINIA TOTAL	7,712,091	933	12.1	49	0.6	24	0.3
LOCALITY							
Accomack County	38,485	17	44.2	0	0.0	0	0.0
Albemarle Co., Charlottesville	134,345	21	15.6	1	0.7	0	0.0
Alleghany Co, Clifton Forge, Covington	22,555	0	0.0	0	0.0	0	0.0
Amelia County	12,686	0	0.0	0	0.0	0	0.0
Amherst County	32,223	1	3.1	0	0.0	0	0.0
Appomattox County	14,199	0	0.0	0	0.0	0	0.0
Arlington County	204,568	33	16.1	1	0.5	0	0.0
Augusta Co., Staunton	94,756	11	11.6	0	0.0	1	1.1
Bath County	4,635	0	0.0	0	0.0	0	0.0
Bedford County and City	73,036	2	2.7	0	0.0	0	0.0
Bland County	6,883	0	0.0	0	0.0	0	0.0
Botetourt County	32,005	0	0.0	0	0.0	0	0.0
Brunswick County	17,811	1	5.6	0	0.0	0	0.0
Buchanan County	23,900	0	0.0	0	0.0	0	0.0
Buckingham County	15,932	0	0.0	0	0.0	0	0.0
Campbell County	52,840	1	1.9	0	0.0	0	0.0
Caroline County	27,282	4	14.7	0	0.0	0	0.0
Carroll County	29,120	0	0.0	0	0.0	0	0.0
Charles City County	7,166	0	0.0	0	0.0	0	0.0
Charlotte County	12,333	0	0.0	0	0.0	0	0.0
Chesterfield County	299,689	16	5.3	1	0.3	4	1.3
Clarke County	14,361	15	104.4	0	0.0	0	0.0
Craig County	5,141	0	0.0	0	0.0	0	0.0
Culpeper County	45,723	6	13.1	0	0.0	0	0.0
Cumberland County	9,626	0	0.0	0	0.0	0	0.0
Dickenson County	16,168	0	0.0	0	0.0	0	0.0
Dinwiddie County	25,747	1	3.9	0	0.0	0	0.0
Essex County	10,862	0	0.0	0	0.0	0	0.0
Fairfax Co./City/Falls Church	1,044,538	191	18.3	13	1.2	1	0.1
Fauquier County	66,328	38	57.3	1	1.5	0	0.0
Floyd County	14,641	5	34.2	0	0.0	0	0.0
Fluvanna County	25,329	0	0.0	0	0.0	0	0.0
Franklin County	51,133	1	2.0	0	0.0	0	0.0
Frederick Co., Winchester	98,613	53	53.7	0	0.0	2	2.0
Giles County	17,228	0	0.0	0	0.0	0	0.0
Gloucester County	38,336	1	2.6	0	0.0	0	0.0
Goochland County	20,615	2	9.7	0	0.0	0	0.0
Grayson County	16,072	0	0.0	0	0.0	0	0.0
Greene County	17,860	4	22.4	0	0.0	0	0.0
Greensville Co., Emporia	17,531	0	0.0	0	0.0	0	0.0
Halifax County	35,530	0	0.0	0	0.0	0	0.0
Hanover County	98,946	2	2.0	0	0.0	2	2.0
Henrico County	289,822	4	1.4	4	1.4	0	0.0
Henry Co., Martinsville	70,122	1	1.4	0	0.0	0	0.0
Highland County	2,446	0	0.0	0	0.0	0	0.0
Isle of Wight County	35,035	0	0.0	0	0.0	0	0.0
James City County	61,195	4	6.5	0	0.0	0	0.0

Number of Cases and Rate for each Locality, District, and Region for these Diseases: 2008

LOCALITY/DISTRICT/REGION	2007 POPULATION	Lyme Disease REPORTED CASES	Lyme Disease RATE PER 100,000	Malaria REPORTED CASES	Malaria RATE PER 100,000	Meningococcal Disease REPORTED CASES	Meningococcal Disease RATE PER 100,000
VIRGINIA TOTAL	7,712,091	933	12.1	49	0.6	24	0.3
LOCALITY							
King and Queen County	6,882	0	0.0	0	0.0	0	0.0
King George County	22,630	6	26.5	0	0.0	0	0.0
King William County	15,689	1	6.4	0	0.0	0	0.0
Lancaster County	11,532	5	43.4	0	0.0	0	0.0
Lee County	23,461	0	0.0	0	0.0	0	0.0
Loudoun County	278,797	235	84.3	5	1.8	0	0.0
Louisa County	31,961	1	3.1	0	0.0	1	3.1
Lunenburg County	13,018	0	0.0	0	0.0	0	0.0
Madison County	13,719	0	0.0	0	0.0	0	0.0
Mathews County	9,041	0	0.0	0	0.0	0	0.0
Mecklenburg County	32,106	0	0.0	0	0.0	0	0.0
Middlesex County	10,637	0	0.0	0	0.0	0	0.0
Montgomery County	89,193	24	26.9	0	0.0	0	0.0
Nelson County	15,245	2	13.1	0	0.0	0	0.0
New Kent County	17,109	0	0.0	0	0.0	0	0.0
Northampton County	13,401	8	59.7	0	0.0	0	0.0
Northumberland County	12,897	1	7.8	0	0.0	0	0.0
Nottoway County	15,755	0	0.0	0	0.0	0	0.0
Orange County	32,492	5	15.4	0	0.0	0	0.0
Page County	24,142	0	0.0	0	0.0	0	0.0
Patrick County	18,870	1	5.3	0	0.0	0	0.0
Pittsylvania County	60,826	0	0.0	0	0.0	0	0.0
Powhatan County	27,817	0	0.0	0	0.0	0	0.0
Prince Edward County	21,360	0	0.0	0	0.0	0	0.0
Prince George County	35,886	0	0.0	1	2.8	0	0.0
Pr. William Co./Manassas/M. Park	407,249	70	17.2	9	2.2	1	0.2
Pulaski County	35,060	2	5.7	0	0.0	0	0.0
Rappahannock County	7,199	3	41.7	0	0.0	1	13.9
Richmond County	9,171	0	0.0	0	0.0	1	10.9
Roanoke County	90,420	1	1.1	0	0.0	1	1.1
Rockbridge Co., Lexington	28,524	2	7.0	0	0.0	1	3.5
Rockingham Co., Harrisonburg	117,563	13	11.1	0	0.0	0	0.0
Russell County	28,838	0	0.0	0	0.0	0	0.0
Scott County	22,787	0	0.0	0	0.0	0	0.0
Shenandoah County	40,403	16	39.6	1	2.5	0	0.0
Smyth County	32,050	0	0.0	0	0.0	1	3.1
Southampton County	17,654	0	0.0	0	0.0	0	0.0
Spotsylvania County	119,194	10	8.4	0	0.0	0	0.0
Stafford County	120,723	5	4.1	0	0.0	1	0.8
Surry County	7,089	0	0.0	0	0.0	0	0.0
Sussex County	12,222	0	0.0	0	0.0	0	0.0
Tazewell County	43,855	0	0.0	0	0.0	0	0.0
Warren County	36,294	48	132.3	2	5.5	0	0.0
Washington County	52,733	1	1.9	0	0.0	1	1.9
Westmoreland County	17,252	0	0.0	0	0.0	0	0.0
Wise Co., Norton	45,390	0	0.0	0	0.0	1	2.2
Wythe County	28,538	0	0.0	0	0.0	0	0.0
York Co., Poquoson	73,129	4	5.5	0	0.0	0	0.0

Number of Cases and Rate for each Locality, District, and Region for these Diseases: 2008

LOCALITY/DISTRICT/REGION	2007 POPULATION	Lyme Disease REPORTED CASES	Lyme Disease RATE PER 100,000	Malaria REPORTED CASES	Malaria RATE PER 100,000	Meningococcal Disease REPORTED CASES	Meningococcal Disease RATE PER 100,000
VIRGINIA TOTAL	7,712,091	933	12.1	49	0.6	24	0.3
LOCALITY							
Alexandria	140,024	7	5.0	2	1.4	0	0.0
Bristol	17,593	0	0.0	0	0.0	0	0.0
Buena Vista	6,482	0	0.0	0	0.0	0	0.0
Chesapeake	219,154	7	3.2	2	0.9	0	0.0
Colonial Heights	17,796	1	5.6	1	5.6	0	0.0
Danville	44,947	0	0.0	0	0.0	0	0.0
Franklin City	8,906	0	0.0	0	0.0	0	0.0
Fredericksburg	22,410	0	0.0	0	0.0	0	0.0
Galax	6,824	0	0.0	0	0.0	1	14.7
Hampton	146,439	2	1.4	0	0.0	0	0.0
Hopewell	23,028	0	0.0	0	0.0	0	0.0
Lynchburg	71,282	2	2.8	0	0.0	0	0.0
Newport News	179,153	5	2.8	1	0.6	2	1.1
Norfolk	235,747	2	0.8	0	0.0	0	0.0
Petersburg	32,885	0	0.0	2	6.1	0	0.0
Portsmouth	101,967	0	0.0	0	0.0	0	0.0
Radford	16,133	0	0.0	0	0.0	0	0.0
Richmond City	200,123	2	1.0	0	0.0	0	0.0
Roanoke City	92,600	1	1.1	0	0.0	0	0.0
Salem	25,233	0	0.0	0	0.0	0	0.0
Suffolk	81,332	0	0.0	0	0.0	0	0.0
Virginia Beach	434,743	1	0.2	2	0.5	1	0.2
Waynesboro	21,656	1	4.6	0	0.0	0	0.0
Williamsburg	12,434	3	24.1	0	0.0	0	0.0

Number of Cases and Rate for each Locality, District, and Region for these Diseases: 2008

LOCALITY/DISTRICT/REGION	2007 POPULATION	Lyme Disease REPORTED CASES	Lyme Disease RATE PER 100,000	Malaria REPORTED CASES	Malaria RATE PER 100,000	Meningococcal Disease REPORTED CASES	Meningococcal Disease RATE PER 100,000
VIRGINIA TOTAL	7,712,091	933	12.1	49	0.6	24	0.3
DISTRICT/REGION							

Central Shenandoah	276,062	27	9.8	0	0.0	2	0.7
Lord Fairfax	213,813	132	61.7	3	1.4	2	0.9
Rappahannock	312,239	25	8.0	0	0.0	1	0.3
Rappahannock/Rapidan	165,461	52	31.4	1	0.6	1	0.6
Thomas Jefferson	224,740	28	12.5	1	0.4	1	0.4
Northwest Region	1,192,315	264	22.1	5	0.4	7	0.6

Alexandria	140,024	7	5.0	2	1.4	0	0.0
Arlington	204,568	33	16.1	1	0.5	0	0.0
Fairfax	1,044,538	191	18.3	13	1.2	1	0.1
Loudoun	278,797	235	84.3	5	1.8	0	0.0
Prince William	407,249	70	17.2	9	2.2	1	0.2
Northern Region	2,075,176	536	25.8	30	1.4	2	0.1

Alleghany	175,354	1	0.6	0	0.0	1	0.6
Central Virginia	243,580	6	2.5	0	0.0	0	0.0
Cumberland Plateau	112,761	0	0.0	0	0.0	0	0.0
Lenowisco	91,638	0	0.0	0	0.0	1	1.1
Mount Rogers	189,813	1	0.5	0	0.0	3	1.6
New River	172,255	31	18.0	0	0.0	0	0.0
Pittsylvania/Danville	105,773	0	0.0	0	0.0	0	0.0
Roanoke City	92,600	1	1.1	0	0.0	0	0.0
West Piedmont	140,125	3	2.1	0	0.0	0	0.0
Southwest Region	1,323,899	43	3.2	0	0.0	5	0.4

Chesterfield	345,302	17	4.9	2	0.6	4	1.2
Chickahominy	143,836	4	2.8	0	0.0	2	1.4
Crater	154,388	1	0.6	3	1.9	0	0.0
Henrico	289,822	4	1.4	4	1.4	0	0.0
Piedmont	100,710	0	0.0	0	0.0	0	0.0
Richmond City	200,123	2	1.0	0	0.0	0	0.0
Southside	85,447	1	1.2	0	0.0	0	0.0
Central Region	1,319,628	29	2.2	9	0.7	6	0.5

Chesapeake	219,154	7	3.2	2	0.9	0	0.0
Eastern Shore	51,886	25	48.2	0	0.0	0	0.0
Hampton	146,439	2	1.4	0	0.0	0	0.0
Norfolk	235,747	2	0.8	0	0.0	0	0.0
Peninsula	325,911	16	4.9	1	0.3	2	0.6
Portsmouth	101,967	0	0.0	0	0.0	0	0.0
Three Rivers	142,299	8	5.6	0	0.0	1	0.7
Virginia Beach	434,743	1	0.2	2	0.5	1	0.2
Western Tidewater	142,927	0	0.0	0	0.0	0	0.0
Eastern Region	1,801,073	61	3.4	5	0.3	4	0.2

Number of Cases and Rate for each Locality, District, and Region for these Diseases: 2008

LOCALITY/DISTRICT/REGION	2007 POPULATION	Mumps REPORTED CASES	Mumps RATE PER 100,000	Pertussis REPORTED CASES	Pertussis RATE PER 100,000	Rabies in Animals REPORTED CASES	Rabies in Animals PERCENT OF TOTAL
VIRGINIA TOTAL	7,712,091	9	0.1	198	2.6	620	8.0
LOCALITY							
Accomack County	38,485	0	0.0	0	0.0	15	2.4
Albemarle Co., Charlottesville	134,345	0	0.0	15	11.2	10	1.6
Alleghany Co, Clifton Forge, Covington	22,555	0	0.0	0	0.0	9	1.5
Amelia County	12,686	0	0.0	0	0.0	3	0.5
Amherst County	32,223	0	0.0	1	3.1	5	0.8
Appomattox County	14,199	0	0.0	0	0.0	3	0.5
Arlington County	204,568	2	1.0	12	5.9	8	1.3
Augusta Co., Staunton	94,756	0	0.0	3	3.2	11	1.8
Bath County	4,635	0	0.0	0	0.0	8	1.3
Bedford County and City	73,036	0	0.0	2	2.7	6	1.0
Bland County	6,883	0	0.0	0	0.0	1	0.2
Botetourt County	32,005	0	0.0	0	0.0	1	0.2
Brunswick County	17,811	0	0.0	0	0.0	5	0.8
Buchanan County	23,900	0	0.0	0	0.0	0	0.0
Buckingham County	15,932	0	0.0	0	0.0	3	0.5
Campbell County	52,840	0	0.0	1	1.9	4	0.6
Caroline County	27,282	0	0.0	0	0.0	3	0.5
Carroll County	29,120	0	0.0	0	0.0	7	1.1
Charles City County	7,166	0	0.0	0	0.0	1	0.2
Charlotte County	12,333	0	0.0	0	0.0	2	0.3
Chesterfield County	299,689	0	0.0	5	1.7	10	1.6
Clarke County	14,361	0	0.0	1	7.0	5	0.8
Craig County	5,141	0	0.0	0	0.0	4	0.6
Culpeper County	45,723	0	0.0	1	2.2	3	0.5
Cumberland County	9,626	0	0.0	0	0.0	1	0.2
Dickenson County	16,168	0	0.0	0	0.0	0	0.0
Dinwiddie County	25,747	0	0.0	0	0.0	1	0.2
Essex County	10,862	0	0.0	0	0.0	1	0.2
Fairfax Co./City/Falls Church	1,044,538	2	0.2	39	3.7	39	6.3
Fauquier County	66,328	0	0.0	2	3.0	30	4.8
Floyd County	14,641	0	0.0	1	6.8	3	0.5
Fluvanna County	25,329	0	0.0	1	3.9	0	0.0
Franklin County	51,133	0	0.0	0	0.0	3	0.5
Frederick Co., Winchester	98,613	1	1.0	1	1.0	7	1.1
Giles County	17,228	0	0.0	0	0.0	1	0.2
Gloucester County	38,336	0	0.0	0	0.0	6	1.0
Goochland County	20,615	0	0.0	2	9.7	0	0.0
Grayson County	16,072	0	0.0	0	0.0	6	1.0
Greene County	17,860	0	0.0	11	61.6	1	0.2
Greensville Co., Emporia	17,531	0	0.0	0	0.0	1	0.2
Halifax County	35,530	0	0.0	0	0.0	11	1.8
Hanover County	98,946	0	0.0	5	5.1	27	4.4
Henrico County	289,822	0	0.0	18	6.2	20	3.2
Henry Co., Martinsville	70,122	0	0.0	1	1.4	2	0.3
Highland County	2,446	0	0.0	0	0.0	6	1.0
Isle of Wight County	35,035	0	0.0	1	2.9	10	1.6
James City County	61,195	0	0.0	1	1.6	6	1.0

Number of Cases and Rate for each Locality, District, and Region for these Diseases: 2008

LOCALITY/DISTRICT/REGION	2007 POPULATION	Mumps REPORTED CASES	Mumps RATE PER 100,000	Pertussis REPORTED CASES	Pertussis RATE PER 100,000	Rabies in Animals REPORTED CASES	Rabies in Animals PERCENT OF TOTAL
VIRGINIA TOTAL	7,712,091	9	0.1	198	2.6	620	8.0
LOCALITY							
King and Queen County	6,882	0	0.0	0	0.0	0	0.0
King George County	22,630	0	0.0	0	0.0	1	0.2
King William County	15,689	0	0.0	0	0.0	1	0.2
Lancaster County	11,532	0	0.0	1	8.7	1	0.2
Lee County	23,461	0	0.0	0	0.0	0	0.0
Loudoun County	278,797	1	0.4	3	1.1	37	6.0
Louisa County	31,961	0	0.0	1	3.1	4	0.6
Lunenburg County	13,018	0	0.0	0	0.0	12	1.9
Madison County	13,719	0	0.0	0	0.0	2	0.3
Mathews County	9,041	0	0.0	0	0.0	0	0.0
Mecklenburg County	32,106	0	0.0	0	0.0	7	1.1
Middlesex County	10,637	0	0.0	0	0.0	6	1.0
Montgomery County	89,193	2	2.2	1	1.1	10	1.6
Nelson County	15,245	0	0.0	0	0.0	2	0.3
New Kent County	17,109	0	0.0	0	0.0	3	0.5
Northampton County	13,401	0	0.0	0	0.0	8	1.3
Northumberland County	12,897	0	0.0	0	0.0	4	0.6
Nottoway County	15,755	0	0.0	0	0.0	0	0.0
Orange County	32,492	0	0.0	0	0.0	4	0.6
Page County	24,142	0	0.0	0	0.0	5	0.8
Patrick County	18,870	0	0.0	0	0.0	3	0.5
Pittsylvania County	60,826	0	0.0	1	1.6	3	0.5
Powhatan County	27,817	0	0.0	0	0.0	2	0.3
Prince Edward County	21,360	0	0.0	0	0.0	1	0.2
Prince George County	35,886	0	0.0	0	0.0	2	0.3
Pr. William Co./Manassas/M. Park	407,249	0	0.0	4	1.0	12	1.9
Pulaski County	35,060	0	0.0	0	0.0	3	0.5
Rappahannock County	7,199	0	0.0	0	0.0	3	0.5
Richmond County	9,171	0	0.0	4	43.6	1	0.2
Roanoke County	90,420	0	0.0	0	0.0	1	0.2
Rockbridge Co., Lexington	28,524	0	0.0	0	0.0	2	0.3
Rockingham Co., Harrisonburg	117,563	0	0.0	0	0.0	16	2.6
Russell County	28,838	0	0.0	0	0.0	2	0.3
Scott County	22,787	0	0.0	0	0.0	0	0.0
Shenandoah County	40,403	1	2.5	0	0.0	6	1.0
Smyth County	32,050	0	0.0	1	3.1	3	0.5
Southampton County	17,654	0	0.0	0	0.0	3	0.5
Spotsylvania County	119,194	0	0.0	4	3.4	12	1.9
Stafford County	120,723	0	0.0	1	0.8	7	1.1
Surry County	7,089	0	0.0	0	0.0	0	0.0
Sussex County	12,222	0	0.0	0	0.0	1	0.2
Tazewell County	43,855	0	0.0	0	0.0	12	1.9
Warren County	36,294	0	0.0	0	0.0	5	0.8
Washington County	52,733	0	0.0	0	0.0	4	0.6
Westmoreland County	17,252	0	0.0	0	0.0	1	0.2
Wise Co., Norton	45,390	0	0.0	1	2.2	1	0.2
Wythe County	28,538	0	0.0	2	7.0	11	1.8
York Co., Poquoson	73,129	0	0.0	2	2.7	3	0.5

Number of Cases and Rate for each Locality, District, and Region for these Diseases: 2008

LOCALITY/DISTRICT/REGION	2007 POPULATION	Mumps REPORTED CASES	Mumps RATE PER 100,000	Pertussis REPORTED CASES	Pertussis RATE PER 100,000	Rabies in Animals REPORTED CASES	Rabies in Animals PERCENT OF TOTAL
VIRGINIA TOTAL	7,712,091	9	0.1	198	2.6	620	8.0
LOCALITY							
Alexandria	140,024	0	0.0	1	0.7	7	1.1
Bristol	17,593	0	0.0	0	0.0	0	0.0
Buena Vista	6,482	0	0.0	0	0.0	0	0.0
Chesapeake	219,154	0	0.0	12	5.5	13	2.1
Colonial Heights	17,796	0	0.0	0	0.0	0	0.0
Danville	44,947	0	0.0	0	0.0	1	0.2
Franklin City	8,906	0	0.0	0	0.0	0	0.0
Fredericksburg	22,410	0	0.0	0	0.0	2	0.3
Galax	6,824	0	0.0	0	0.0	0	0.0
Hampton	146,439	0	0.0	0	0.0	5	0.8
Hopewell	23,028	0	0.0	1	4.3	0	0.0
Lynchburg	71,282	0	0.0	1	1.4	6	1.0
Newport News	179,153	0	0.0	2	1.1	18	2.9
Norfolk	235,747	0	0.0	9	3.8	4	0.6
Petersburg	32,885	0	0.0	1	3.0	1	0.2
Portsmouth	101,967	0	0.0	0	0.0	3	0.5
Radford	16,133	0	0.0	0	0.0	0	0.0
Richmond City	200,123	0	0.0	1	0.5	2	0.3
Roanoke City	92,600	0	0.0	0	0.0	1	0.2
Salem	25,233	0	0.0	1	4.0	1	0.2
Suffolk	81,332	0	0.0	1	1.2	7	1.1
Virginia Beach	434,743	0	0.0	16	3.7	11	1.8
Waynesboro	21,656	0	0.0	0	0.0	1	0.2
Williamsburg	12,434	0	0.0	2	16.1	1	0.2

Number of Cases and Rate for each Locality, District, and Region for these Diseases: 2008

LOCALITY/DISTRICT/REGION	2007 POPULATION	Mumps REPORTED CASES	Mumps RATE PER 100,000	Pertussis REPORTED CASES	Pertussis RATE PER 100,000	Rabies in Animals REPORTED CASES	Rabies in Animals PERCENT OF TOTAL
VIRGINIA TOTAL	7,712,091	9	0.1	198	2.6	620	8.0
DISTRICT/REGION							

Central Shenandoah	276,062	0	0.0	3	1.1	44	10.7
Lord Fairfax	213,813	2	0.9	2	0.9	28	7.4
Rappahannock	312,239	0	0.0	5	1.6	25	3.9
Rappahannock/Rapidan	165,461	0	0.0	3	1.8	42	3.3
Thomas Jefferson	224,740	0	0.0	28	12.5	17	3.1
Northwest Region	1,192,315	2	0.2	41	3.4	156	13.1

Alexandria	140,024	0	0.0	1	0.7	7	2.2
Arlington	204,568	2	1.0	12	5.9	8	3.1
Fairfax	1,044,538	2	0.2	39	3.7	39	9.2
Loudoun	278,797	1	0.4	3	1.1	37	3.5
Prince William	407,249	0	0.0	4	1.0	12	3.1
Northern Region	2,075,176	5	0.2	59	2.8	103	5.0

Alleghany	175,354	0	0.0	1	0.6	16	1.8
Central Virginia	243,580	0	0.0	5	2.1	24	7.4
Cumberland Plateau	112,761	0	0.0	0	0.0	14	1.3
Lenowisco	91,638	0	0.0	1	1.1	1	0.2
Mount Rogers	189,813	0	0.0	3	1.6	32	3.5
New River	172,255	2	1.2	2	1.2	17	1.7
Pittsylvania/Danville	105,773	0	0.0	1	0.9	4	0.6
Roanoke City	92,600	0	0.0	0	0.0	1	0.2
West Piedmont	140,125	0	0.0	1	0.7	8	1.7
Southwest Region	1,323,899	2	0.2	14	1.1	117	8.8

Chesterfield	345,302	0	0.0	5	1.4	12	2.4
Chickahominy	143,836	0	0.0	7	4.9	31	3.1
Crater	154,388	0	0.0	2	1.3	6	2.6
Henrico	289,822	0	0.0	18	6.2	20	1.7
Piedmont	100,710	0	0.0	0	0.0	22	2.6
Richmond City	200,123	0	0.0	1	0.5	2	0.2
Southside	85,447	0	0.0	0	0.0	23	1.8
Central Region	1,319,628	0	0.0	33	2.5	116	8.8

Chesapeake	219,154	0	0.0	12	5.5	13	0.2
Eastern Shore	51,886	0	0.0	0	0.0	23	5.4
Hampton	146,439	0	0.0	0	0.0	5	0.7
Norfolk	235,747	0	0.0	9	3.8	4	2.0
Peninsula	325,911	0	0.0	7	2.1	28	2.2
Portsmouth	101,967	0	0.0	0	0.0	3	0.0
Three Rivers	142,299	0	0.0	5	3.5	21	5.0
Virginia Beach	434,743	0	0.0	16	3.7	11	1.1
Western Tidewater	142,927	0	0.0	2	1.4	20	1.1
Eastern Region	1,801,073	0	0.0	51	2.8	128	7.1

Number of Cases and Rate for each Locality, District, and Region for these Diseases: 2008

LOCALITY/DISTRICT/REGION	2007 POPULATION	Rocky Mountain Spotted Fever REPORTED CASES	Rocky Mountain Spotted Fever RATE PER 100,000	Salmonellosis REPORTED CASES	Salmonellosis RATE PER 100,000	Shigellosis REPORTED CASES	Shigellosis RATE PER 100,000
VIRGINIA TOTAL	7,712,091	155	2.0	1,165	15.1	310	4.0
LOCALITY							
Accomack County	38,485	0	0.0	15	39.0	13	33.8
Albemarle Co., Charlottesville	134,345	3	2.2	27	20.1	4	3.0
Alleghany Co, Clifton Forge, Covington	22,555	1	4.4	4	17.7	0	0.0
Amelia County	12,686	0	0.0	2	15.8	0	0.0
Amherst County	32,223	1	3.1	9	27.9	0	0.0
Appomattox County	14,199	2	14.1	5	35.2	0	0.0
Arlington County	204,568	1	0.5	45	22.0	5	2.4
Augusta Co., Staunton	94,756	1	1.1	15	15.8	3	3.2
Bath County	4,635	0	0.0	0	0.0	0	0.0
Bedford County and City	73,036	2	2.7	9	12.3	0	0.0
Bland County	6,883	0	0.0	0	0.0	0	0.0
Botetourt County	32,005	0	0.0	5	15.6	0	0.0
Brunswick County	17,811	4	22.5	2	11.2	0	0.0
Buchanan County	23,900	0	0.0	3	12.6	0	0.0
Buckingham County	15,932	0	0.0	0	0.0	0	0.0
Campbell County	52,840	1	1.9	11	20.8	1	1.9
Caroline County	27,282	1	3.7	3	11.0	0	0.0
Carroll County	29,120	4	13.7	3	10.3	0	0.0
Charles City County	7,166	0	0.0	3	41.9	0	0.0
Charlotte County	12,333	0	0.0	3	24.3	0	0.0
Chesterfield County	299,689	16	5.3	39	13.0	8	2.7
Clarke County	14,361	0	0.0	4	27.9	1	7.0
Craig County	5,141	0	0.0	0	0.0	0	0.0
Culpeper County	45,723	1	2.2	6	13.1	2	4.4
Cumberland County	9,626	0	0.0	3	31.2	0	0.0
Dickenson County	16,168	0	0.0	0	0.0	2	12.4
Dinwiddie County	25,747	4	15.5	6	23.3	0	0.0
Essex County	10,862	0	0.0	3	27.6	0	0.0
Fairfax Co./City/Falls Church	1,044,538	9	0.9	165	15.8	25	2.4
Fauquier County	66,328	0	0.0	17	25.6	11	16.6
Floyd County	14,641	0	0.0	2	13.7	0	0.0
Fluvanna County	25,329	0	0.0	6	23.7	0	0.0
Franklin County	51,133	1	2.0	3	5.9	1	2.0
Frederick Co., Winchester	98,613	4	4.1	21	21.3	2	2.0
Giles County	17,228	0	0.0	2	11.6	0	0.0
Gloucester County	38,336	2	5.2	4	10.4	0	0.0
Goochland County	20,615	0	0.0	3	14.6	0	0.0
Grayson County	16,072	0	0.0	1	6.2	0	0.0
Greene County	17,860	0	0.0	4	22.4	0	0.0
Greensville Co., Emporia	17,531	1	5.7	7	39.9	0	0.0
Halifax County	35,530	0	0.0	8	22.5	0	0.0
Hanover County	98,946	1	1.0	21	21.2	2	2.0
Henrico County	289,822	4	1.4	37	12.8	35	12.1
Henry Co., Martinsville	70,122	1	1.4	8	11.4	0	0.0
Highland County	2,446	0	0.0	0	0.0	0	0.0
Isle of Wight County	35,035	0	0.0	7	20.0	0	0.0
James City County	61,195	7	11.4	10	16.3	1	1.6

Number of Cases and Rate for each Locality, District, and Region for these Diseases: 2008

LOCALITY/DISTRICT/REGION	2007 POPULATION	Rocky Mountain Spotted Fever REPORTED CASES	Rocky Mountain Spotted Fever RATE PER 100,000	Salmonellosis REPORTED CASES	Salmonellosis RATE PER 100,000	Shigellosis REPORTED CASES	Shigellosis RATE PER 100,000
VIRGINIA TOTAL	7,712,091	155	2.0	1,165	15.1	310	4.0
LOCALITY							
King and Queen County	6,882	0	0.0	0	0.0	0	0.0
King George County	22,630	0	0.0	5	22.1	0	0.0
King William County	15,689	2	12.7	3	19.1	0	0.0
Lancaster County	11,532	4	34.7	0	0.0	0	0.0
Lee County	23,461	0	0.0	2	8.5	0	0.0
Loudoun County	278,797	5	1.8	46	16.5	5	1.8
Louisa County	31,961	1	3.1	10	31.3	0	0.0
Lunenburg County	13,018	0	0.0	1	7.7	0	0.0
Madison County	13,719	0	0.0	0	0.0	0	0.0
Mathews County	9,041	0	0.0	1	11.1	0	0.0
Mecklenburg County	32,106	0	0.0	5	15.6	0	0.0
Middlesex County	10,637	0	0.0	1	9.4	0	0.0
Montgomery County	89,193	0	0.0	15	16.8	0	0.0
Nelson County	15,245	0	0.0	8	52.5	0	0.0
New Kent County	17,109	0	0.0	3	17.5	0	0.0
Northampton County	13,401	0	0.0	5	37.3	2	14.9
Northumberland County	12,897	3	23.3	6	46.5	0	0.0
Nottoway County	15,755	0	0.0	6	38.1	0	0.0
Orange County	32,492	3	9.2	6	18.5	0	0.0
Page County	24,142	1	4.1	2	8.3	0	0.0
Patrick County	18,870	2	10.6	4	21.2	0	0.0
Pittsylvania County	60,826	6	9.9	2	3.3	0	0.0
Powhatan County	27,817	4	14.4	4	14.4	3	10.8
Prince Edward County	21,360	1	4.7	7	32.8	0	0.0
Prince George County	35,886	3	8.4	5	13.9	0	0.0
Pr. William Co./Manassas/M. Park	407,249	7	1.7	58	14.2	8	2.0
Pulaski County	35,060	0	0.0	4	11.4	0	0.0
Rappahannock County	7,199	1	13.9	0	0.0	0	0.0
Richmond County	9,171	1	10.9	0	0.0	0	0.0
Roanoke County	90,420	2	2.2	14	15.5	0	0.0
Rockbridge Co., Lexington	28,524	0	0.0	6	21.0	0	0.0
Rockingham Co., Harrisonburg	117,563	1	0.9	17	14.5	10	8.5
Russell County	28,838	0	0.0	5	17.3	1	3.5
Scott County	22,787	0	0.0	4	17.6	0	0.0
Shenandoah County	40,403	1	2.5	13	32.2	6	14.9
Smyth County	32,050	0	0.0	1	3.1	0	0.0
Southampton County	17,654	0	0.0	2	11.3	0	0.0
Spotsylvania County	119,194	2	1.7	13	10.9	2	1.7
Stafford County	120,723	1	0.8	24	19.9	3	2.5
Surry County	7,089	0	0.0	0	0.0	0	0.0
Sussex County	12,222	1	8.2	0	0.0	0	0.0
Tazewell County	43,855	0	0.0	10	22.8	0	0.0
Warren County	36,294	0	0.0	7	19.3	0	0.0
Washington County	52,733	0	0.0	4	7.6	0	0.0
Westmoreland County	17,252	0	0.0	0	0.0	0	0.0
Wise Co., Norton	45,390	0	0.0	8	17.6	0	0.0
Wythe County	28,538	0	0.0	7	24.5	0	0.0
York Co., Poquoson	73,129	0	0.0	4	5.5	1	1.4

Number of Cases and Rate for each Locality, District, and Region for these Diseases: 2008

LOCALITY/DISTRICT/REGION	2007 POPULATION	Rocky Mountain Spotted Fever REPORTED CASES	Rocky Mountain Spotted Fever RATE PER 100,000	Salmonellosis REPORTED CASES	Salmonellosis RATE PER 100,000	Shigellosis REPORTED CASES	Shigellosis RATE PER 100,000
VIRGINIA TOTAL	7,712,091	155	2.0	1,165	15.1	310	4.0
LOCALITY							
Alexandria	140,024	0	0.0	21	15.0	2	1.4
Bristol	17,593	0	0.0	1	5.7	0	0.0
Buena Vista	6,482	0	0.0	1	15.4	0	0.0
Chesapeake	219,154	6	2.7	34	15.5	12	5.5
Colonial Heights	17,796	1	5.6	2	11.2	0	0.0
Danville	44,947	8	17.8	6	13.3	0	0.0
Franklin City	8,906	0	0.0	4	44.9	0	0.0
Fredericksburg	22,410	2	8.9	7	31.2	0	0.0
Galax	6,824	0	0.0	1	14.7	0	0.0
Hampton	146,439	0	0.0	5	3.4	9	6.1
Hopewell	23,028	0	0.0	3	13.0	0	0.0
Lynchburg	71,282	1	1.4	13	18.2	0	0.0
Newport News	179,153	5	2.8	19	10.6	10	5.6
Norfolk	235,747	0	0.0	25	10.6	14	5.9
Petersburg	32,885	1	3.0	6	18.2	2	6.1
Portsmouth	101,967	0	0.0	11	10.8	6	5.9
Radford	16,133	0	0.0	1	6.2	0	0.0
Richmond City	200,123	1	0.5	21	10.5	76	38.0
Roanoke City	92,600	0	0.0	6	6.5	1	1.1
Salem	25,233	1	4.0	3	11.9	0	0.0
Suffolk	81,332	0	0.0	12	14.8	4	4.9
Virginia Beach	434,743	1	0.2	51	11.7	9	2.1
Waynesboro	21,656	0	0.0	3	13.9	8	36.9
Williamsburg	12,434	4	32.2	10	80.4	0	0.0

Number of Cases and Rate for each Locality, District, and Region for these Diseases: 2008

LOCALITY/DISTRICT/REGION	2007 POPULATION	Rocky Mountain Spotted Fever REPORTED CASES	Rocky Mountain Spotted Fever RATE PER 100,000	Salmonellosis REPORTED CASES	Salmonellosis RATE PER 100,000	Shigellosis REPORTED CASES	Shigellosis RATE PER 100,000
VIRGINIA TOTAL	7,712,091	155	2.0	1,165	15.1	310	4.0
DISTRICT/REGION							

Central Shenandoah	276,062	2	0.7	42	15.2	21	7.6
Lord Fairfax	213,813	6	2.8	47	22.0	9	4.2
Rappahannock	312,239	6	1.9	52	16.7	5	1.6
Rappahannock/Rapidan	165,461	5	3.0	29	17.5	13	7.9
Thomas Jefferson	224,740	4	1.8	55	24.5	4	1.8
Northwest Region	1,192,315	23	1.9	225	18.9	52	4.4

Alexandria	140,024	0	0.0	21	15.0	2	1.4
Arlington	204,568	1	0.5	45	22.0	5	2.4
Fairfax	1,044,538	9	0.9	165	15.8	25	2.4
Loudoun	278,797	5	1.8	46	16.5	5	1.8
Prince William	407,249	7	1.7	58	14.2	8	2.0
Northern Region	2,075,176	22	1.1	335	16.1	45	2.2

Alleghany	175,354	4	2.3	26	14.8	0	0.0
Central Virginia	243,580	7	2.9	47	19.3	1	0.4
Cumberland Plateau	112,761	0	0.0	18	16.0	3	2.7
Lenowisco	91,638	0	0.0	14	15.3	0	0.0
Mount Rogers	189,813	4	2.1	18	9.5	0	0.0
New River	172,255	0	0.0	24	13.9	0	0.0
Pittsylvania/Danville	105,773	14	13.2	8	7.6	0	0.0
Roanoke City	92,600	0	0.0	6	6.5	1	1.1
West Piedmont	140,125	4	2.9	15	10.7	1	0.7
Southwest Region	1,323,899	33	2.5	176	13.3	6	0.5

Chesterfield	345,302	21	6.1	45	13.0	11	3.2
Chickahominy	143,836	1	0.7	30	20.9	2	1.4
Crater	154,388	10	6.5	27	17.5	2	1.3
Henrico	289,822	4	1.4	37	12.8	35	12.1
Piedmont	100,710	1	1.0	22	21.8	0	0.0
Richmond City	200,123	1	0.5	21	10.5	76	38.0
Southside	85,447	4	4.7	15	17.6	0	0.0
Central Region	1,319,628	42	3.2	197	14.9	126	9.5

Chesapeake	219,154	6	2.7	34	15.5	12	5.5
Eastern Shore	51,886	0	0.0	20	38.5	15	28.9
Hampton	146,439	0	0.0	5	3.4	9	6.1
Norfolk	235,747	0	0.0	25	10.6	14	5.9
Peninsula	325,911	16	4.9	43	13.2	12	3.7
Portsmouth	101,967	0	0.0	11	10.8	6	5.9
Three Rivers	142,299	12	8.4	18	12.6	0	0.0
Virginia Beach	434,743	1	0.2	51	11.7	9	2.1
Western Tidewater	142,927	0	0.0	25	17.5	4	2.8
Eastern Region	1,801,073	35	1.9	232	12.9	81	4.5

Number of Cases and Rate for each Locality, District, and Region for these Diseases: 2008

LOCALITY/DISTRICT/REGION	2007 POPULATION	***Staphylococcus aureus* Infection, Invasive (MRSA)** REPORTED CASES	RATE PER 100,000	**Syphilis, Early Stage** REPORTED CASES	RATE PER 100,000	**Tuberculosis** REPORTED CASES	RATE PER 100,000
VIRGINIA TOTAL	7,712,091	1,524	19.8	500	6.5	292	3.8
LOCALITY							
Accomack County	38,485	8	20.8	3	7.8	1	2.6
Albemarle Co., Charlottesville	134,345	18	13.4	3	2.2	1	0.7
Alleghany Co, Clifton Forge, Covington	22,555	2	8.9	1	4.4	0	0.0
Amelia County	12,686	0	0.0	0	0.0	0	0.0
Amherst County	32,223	9	27.9	0	0.0	0	0.0
Appomattox County	14,199	9	63.4	0	0.0	0	0.0
Arlington County	204,568	46	22.5	26	12.7	20	9.8
Augusta Co., Staunton	94,756	11	11.6	1	1.1	4	4.2
Bath County	4,635	1	21.6	0	0.0	0	0.0
Bedford County and City	73,036	16	21.9	1	1.4	0	0.0
Bland County	6,883	0	0.0	0	0.0	0	0.0
Botetourt County	32,005	7	21.9	0	0.0	0	0.0
Brunswick County	17,811	3	16.8	1	5.6	1	5.6
Buchanan County	23,900	2	8.4	0	0.0	0	0.0
Buckingham County	15,932	3	18.8	0	0.0	0	0.0
Campbell County	52,840	11	20.8	3	5.7	0	0.0
Caroline County	27,282	8	29.3	1	3.7	1	3.7
Carroll County	29,120	2	6.9	0	0.0	0	0.0
Charles City County	7,166	3	41.9	0	0.0	0	0.0
Charlotte County	12,333	1	8.1	0	0.0	0	0.0
Chesterfield County	299,689	74	24.7	29	9.7	4	1.3
Clarke County	14,361	3	20.9	0	0.0	0	0.0
Craig County	5,141	0	0.0	0	0.0	0	0.0
Culpeper County	45,723	4	8.7	0	0.0	2	4.4
Cumberland County	9,626	1	10.4	0	0.0	0	0.0
Dickenson County	16,168	6	37.1	0	0.0	0	0.0
Dinwiddie County	25,747	5	19.4	1	3.9	0	0.0
Essex County	10,862	2	18.4	2	18.4	0	0.0
Fairfax Co./City/Falls Church	1,044,538	97	9.3	34	3.3	98	9.4
Fauquier County	66,328	7	10.6	0	0.0	0	0.0
Floyd County	14,641	2	13.7	1	6.8	0	0.0
Fluvanna County	25,329	6	23.7	1	3.9	0	0.0
Franklin County	51,133	15	29.3	0	0.0	0	0.0
Frederick Co., Winchester	98,613	12	12.2	2	2.0	1	1.0
Giles County	17,228	2	11.6	0	0.0	0	0.0
Gloucester County	38,336	0	0.0	0	0.0	2	5.2
Goochland County	20,615	7	34.0	1	4.9	0	0.0
Grayson County	16,072	2	12.4	0	0.0	0	0.0
Greene County	17,860	1	5.6	1	5.6	0	0.0
Greensville Co., Emporia	17,531	11	62.7	0	0.0	1	5.7
Halifax County	35,530	17	47.8	1	2.8	1	2.8
Hanover County	98,946	29	29.3	3	3.0	0	0.0
Henrico County	289,822	82	28.3	37	12.8	8	2.8
Henry Co., Martinsville	70,122	22	31.4	0	0.0	0	0.0
Highland County	2,446	0	0.0	0	0.0	0	0.0
Isle of Wight County	35,035	2	5.7	0	0.0	2	5.7
James City County	61,195	4	6.5	1	1.6	0	0.0

Number of Cases and Rate for each Locality, District, and Region for these Diseases: 2008

LOCALITY/DISTRICT/REGION	2007 POPULATION	***Staphylococcus aureus* Infection, Invasive (MRSA)** REPORTED CASES	RATE PER 100,000	**Syphilis, Early Stage** REPORTED CASES	RATE PER 100,000	**Tuberculosis** REPORTED CASES	RATE PER 100,000
VIRGINIA TOTAL	7,712,091	1,524	19.8	500	6.5	292	3.8
LOCALITY							
King and Queen County	6,882	0	0.0	0	0.0	2	29.1
King George County	22,630	1	4.4	0	0.0	0	0.0
King William County	15,689	2	12.7	1	6.4	1	6.4
Lancaster County	11,532	3	26.0	0	0.0	0	0.0
Lee County	23,461	5	21.3	0	0.0	0	0.0
Loudoun County	278,797	10	3.6	3	1.1	18	6.5
Louisa County	31,961	12	37.5	0	0.0	1	3.1
Lunenburg County	13,018	3	23.0	1	7.7	0	0.0
Madison County	13,719	0	0.0	0	0.0	1	7.3
Mathews County	9,041	1	11.1	0	0.0	0	0.0
Mecklenburg County	32,106	11	34.3	0	0.0	1	3.1
Middlesex County	10,637	0	0.0	0	0.0	0	0.0
Montgomery County	89,193	6	6.7	0	0.0	3	3.4
Nelson County	15,245	4	26.2	0	0.0	0	0.0
New Kent County	17,109	6	35.1	0	0.0	0	0.0
Northampton County	13,401	2	14.9	1	7.5	1	7.5
Northumberland County	12,897	1	7.8	0	0.0	0	0.0
Nottoway County	15,755	7	44.4	1	6.3	1	6.3
Orange County	32,492	1	3.1	0	0.0	0	0.0
Page County	24,142	7	29.0	0	0.0	0	0.0
Patrick County	18,870	8	42.4	0	0.0	0	0.0
Pittsylvania County	60,826	14	23.0	5	8.2	1	1.6
Powhatan County	27,817	6	21.6	1	3.6	0	0.0
Prince Edward County	21,360	0	0.0	1	4.7	1	4.7
Prince George County	35,886	8	22.3	0	0.0	2	5.6
Pr. William Co./Manassas/M. Park	407,249	29	7.1	17	4.2	22	5.4
Pulaski County	35,060	7	20.0	0	0.0	0	0.0
Rappahannock County	7,199	0	0.0	0	0.0	0	0.0
Richmond County	9,171	0	0.0	1	10.9	0	0.0
Roanoke County	90,420	21	23.2	1	1.1	3	3.3
Rockbridge Co., Lexington	28,524	4	14.0	0	0.0	0	0.0
Rockingham Co., Harrisonburg	117,563	28	23.8	3	2.6	4	3.4
Russell County	28,838	13	45.1	0	0.0	0	0.0
Scott County	22,787	7	30.7	0	0.0	0	0.0
Shenandoah County	40,403	4	9.9	0	0.0	0	0.0
Smyth County	32,050	2	6.2	0	0.0	0	0.0
Southampton County	17,654	1	5.7	0	0.0	0	0.0
Spotsylvania County	119,194	23	19.3	0	0.0	1	0.8
Stafford County	120,723	18	14.9	2	1.7	3	2.5
Surry County	7,089	0	0.0	0	0.0	0	0.0
Sussex County	12,222	2	16.4	1	8.2	1	8.2
Tazewell County	43,855	8	18.2	0	0.0	1	2.3
Warren County	36,294	3	8.3	0	0.0	0	0.0
Washington County	52,733	17	32.2	0	0.0	0	0.0
Westmoreland County	17,252	0	0.0	0	0.0	0	0.0
Wise Co., Norton	45,390	20	44.1	0	0.0	0	0.0
Wythe County	28,538	6	21.0	1	3.5	0	0.0
York Co., Poquoson	73,129	9	12.3	2	2.7	0	0.0

Number of Cases and Rate for each Locality, District, and Region for these Diseases: 2008

LOCALITY/DISTRICT/REGION	2007 POPULATION	***Staphylococcus aureus* Infection, Invasive (MRSA)** REPORTED CASES	RATE PER 100,000	**Syphilis, Early Stage** REPORTED CASES	RATE PER 100,000	**Tuberculosis** REPORTED CASES	RATE PER 100,000
VIRGINIA TOTAL	7,712,091	1,524	19.8	500	6.5	292	3.8
LOCALITY							
Alexandria	140,024	9	6.4	22	15.7	11	7.9
Bristol	17,593	1	5.7	0	0.0	0	0.0
Buena Vista	6,482	1	15.4	0	0.0	1	15.4
Chesapeake	219,154	47	21.4	15	6.8	2	0.9
Colonial Heights	17,796	6	33.7	0	0.0	0	0.0
Danville	44,947	20	44.5	8	17.8	3	6.7
Franklin City	8,906	2	22.5	0	0.0	0	0.0
Fredericksburg	22,410	3	13.4	0	0.0	0	0.0
Galax	6,824	4	58.6	0	0.0	0	0.0
Hampton	146,439	44	30.0	21	14.3	6	4.1
Hopewell	23,028	15	65.1	2	8.7	2	8.7
Lynchburg	71,282	23	32.3	6	8.4	1	1.4
Newport News	179,153	49	27.4	35	19.5	6	3.3
Norfolk	235,747	66	28.0	42	17.8	5	2.1
Petersburg	32,885	16	48.7	12	36.5	3	9.1
Portsmouth	101,967	21	20.6	16	15.7	4	3.9
Radford	16,133	1	6.2	0	0.0	2	12.4
Richmond City	200,123	115	57.5	84	42.0	13	6.5
Roanoke City	92,600	51	55.1	4	4.3	1	1.1
Salem	25,233	20	79.3	0	0.0	1	4.0
Suffolk	81,332	4	4.9	6	7.4	2	2.5
Virginia Beach	434,743	86	19.8	28	6.4	11	2.5
Waynesboro	21,656	3	13.9	2	9.2	0	0.0
Williamsburg	12,434	4	32.2	1	8.0	3	24.1

Number of Cases and Rate for each Locality, District, and Region for these Diseases: 2008

LOCALITY/DISTRICT/REGION	2007 POPULATION	***Staphylococcus aureus* Infection, Invasive (MRSA)** REPORTED CASES	RATE PER 100,000	**Syphilis, Early Stage** REPORTED CASES	RATE PER 100,000	**Tuberculosis** REPORTED CASES	RATE PER 100,000
VIRGINIA TOTAL	7,712,091	1,524	19.8	500	6.5	292	3.8
DISTRICT/REGION							

Central Shenandoah	276,062	48	17.4	6	2.2	9	3.3
Lord Fairfax	213,813	29	13.6	2	0.9	1	0.5
Rappahannock	312,239	53	17.0	3	1.0	5	1.6
Rappahannock/Rapidan	165,461	12	7.3	0	0.0	3	1.8
Thomas Jefferson	224,740	41	18.2	5	2.2	2	0.9
Northwest Region	1,192,315	183	15.3	16	1.3	20	1.7

Alexandria	140,024	9	6.4	22	15.7	11	7.9
Arlington	204,568	46	22.5	26	12.7	20	9.8
Fairfax	1,044,538	97	9.3	34	3.3	98	9.4
Loudoun	278,797	10	3.6	3	1.1	18	6.5
Prince William	407,249	29	7.1	17	4.2	22	5.4
Northern Region	2,075,176	191	9.2	102	4.9	169	8.1

Alleghany	175,354	50	28.5	2	1.1	4	2.3
Central Virginia	243,580	68	27.9	10	4.1	1	0.4
Cumberland Plateau	112,761	29	25.7	0	0.0	1	0.9
Lenowisco	91,638	32	34.9	0	0.0	0	0.0
Mount Rogers	189,813	34	17.9	1	0.5	0	0.0
New River	172,255	18	10.4	1	0.6	5	2.9
Pittsylvania/Danville	105,773	34	32.1	13	12.3	4	3.8
Roanoke City	92,600	51	55.1	4	4.3	1	1.1
West Piedmont	140,125	45	32.1	0	0.0	0	0.0
Southwest Region	1,323,899	361	27.3	31	2.3	16	1.2

Chesterfield	345,302	86	24.9	30	8.7	4	1.2
Chickahominy	143,836	45	31.3	4	2.8	0	0.0
Crater	154,388	57	36.9	16	10.4	9	5.8
Henrico	289,822	82	28.3	37	12.8	8	2.8
Piedmont	100,710	15	14.9	3	3.0	2	2.0
Richmond City	200,123	115	57.5	84	42.0	13	6.5
Southside	85,447	31	36.3	2	2.3	3	3.5
Central Region	1,319,628	431	32.7	176	13.3	39	3.0

Chesapeake	219,154	47	21.4	15	6.8	2	0.9
Eastern Shore	51,886	10	19.3	4	7.7	2	3.9
Hampton	146,439	44	30.0	21	14.3	6	4.1
Norfolk	235,747	66	28.0	42	17.8	5	2.1
Peninsula	325,911	66	20.3	39	12.0	9	2.8
Portsmouth	101,967	21	20.6	16	15.7	4	3.9
Three Rivers	142,299	9	6.3	4	2.8	5	3.5
Virginia Beach	434,743	86	19.8	28	6.4	11	2.5
Western Tidewater	142,927	9	6.3	6	4.2	4	2.8
Eastern Region	1,801,073	358	19.9	175	9.7	48	2.7

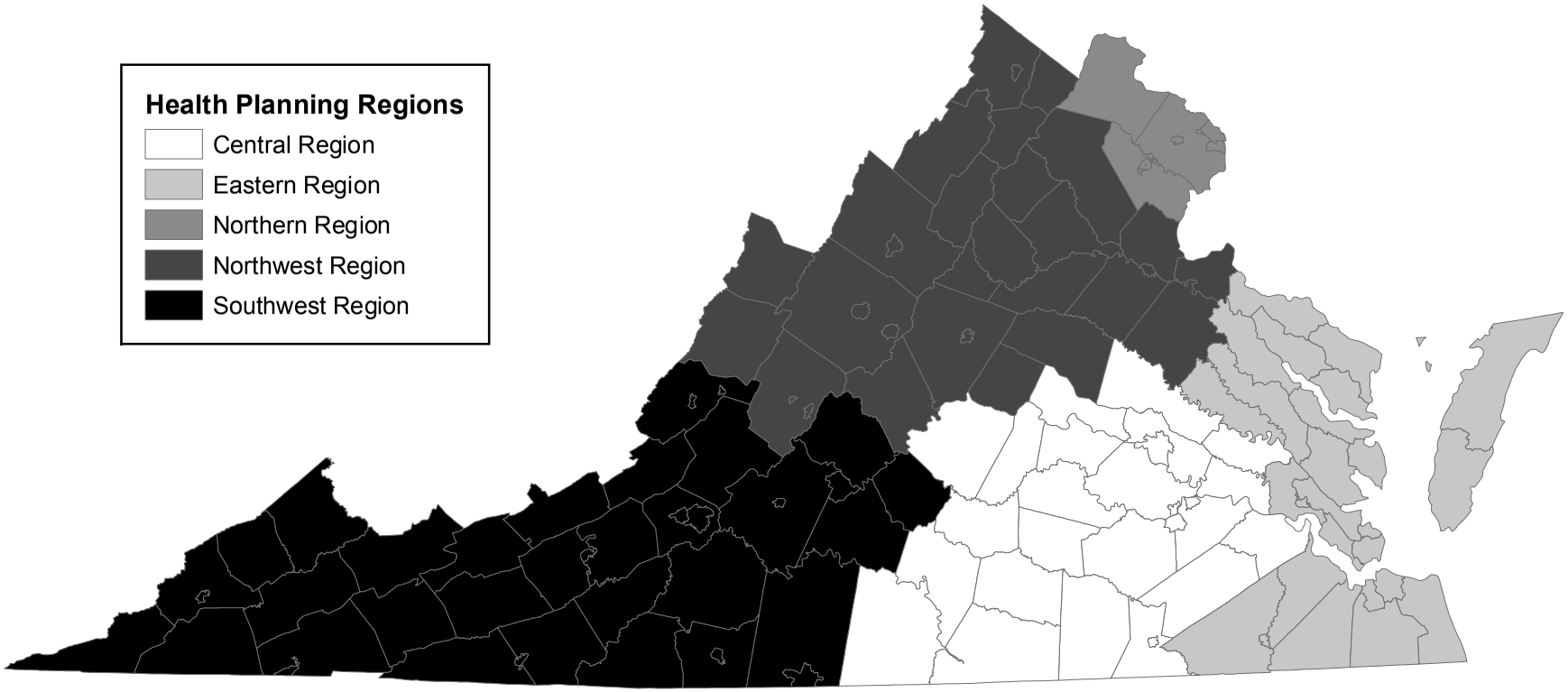
MAPS OF INCIDENCE RATES

OF

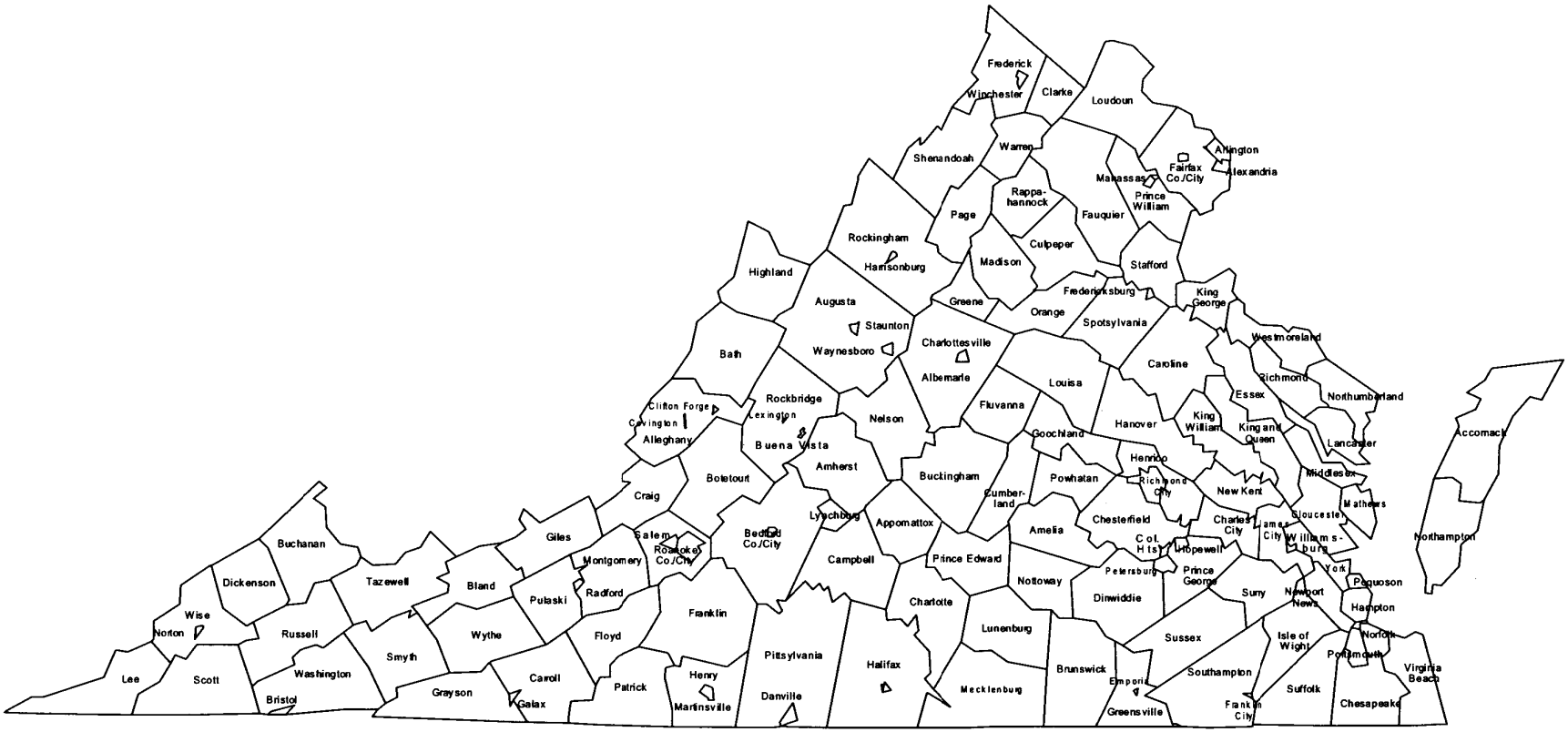
SELECTED DISEASES

BY LOCALITY

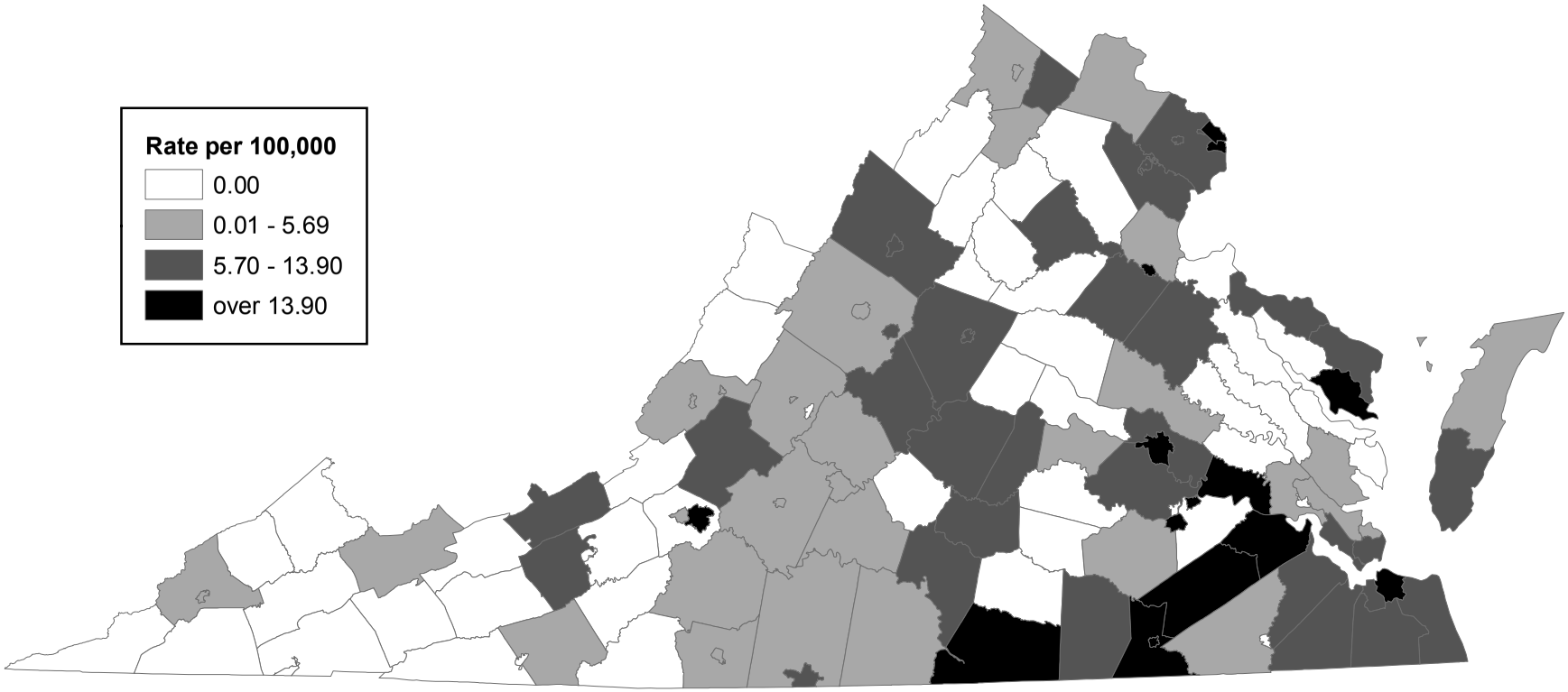
Health Planning Regions in Virginia



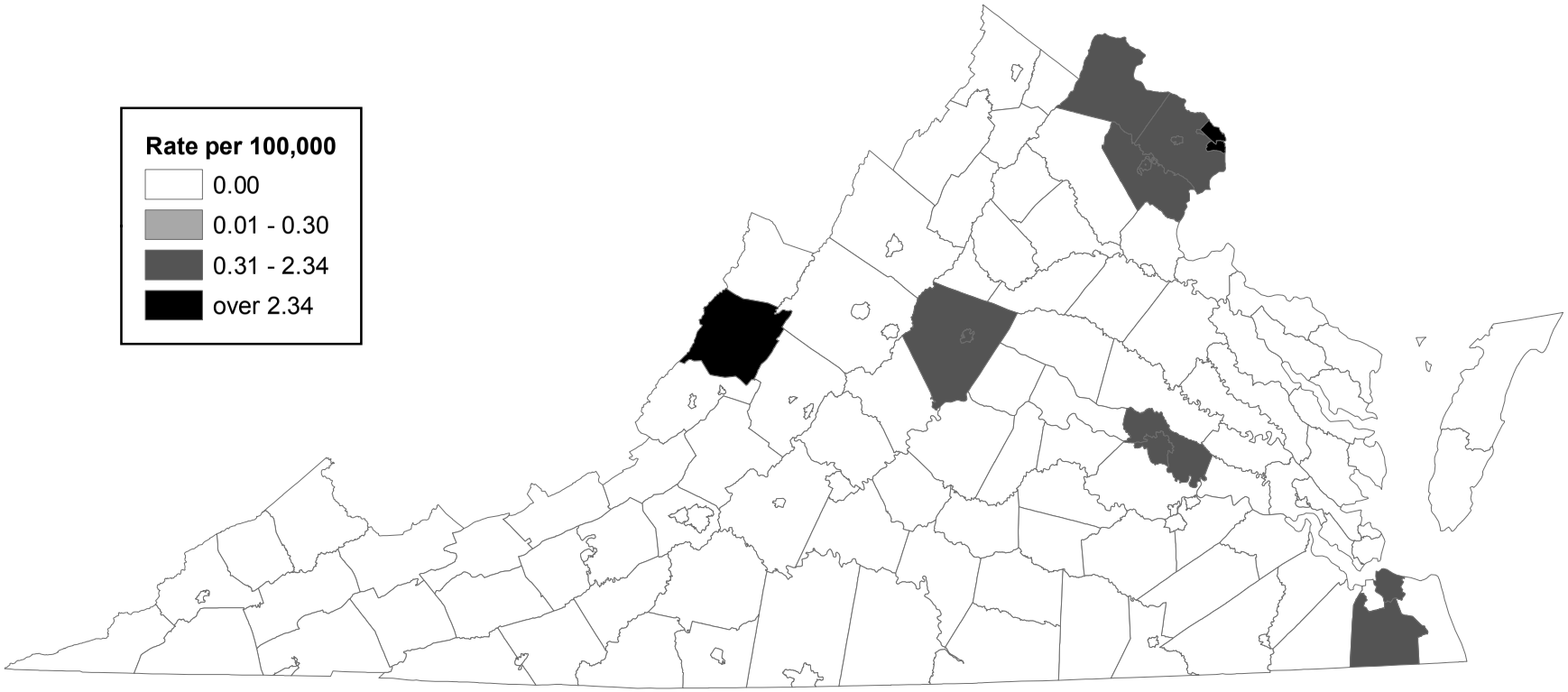
Location of Counties and Selected Cities in Virginia



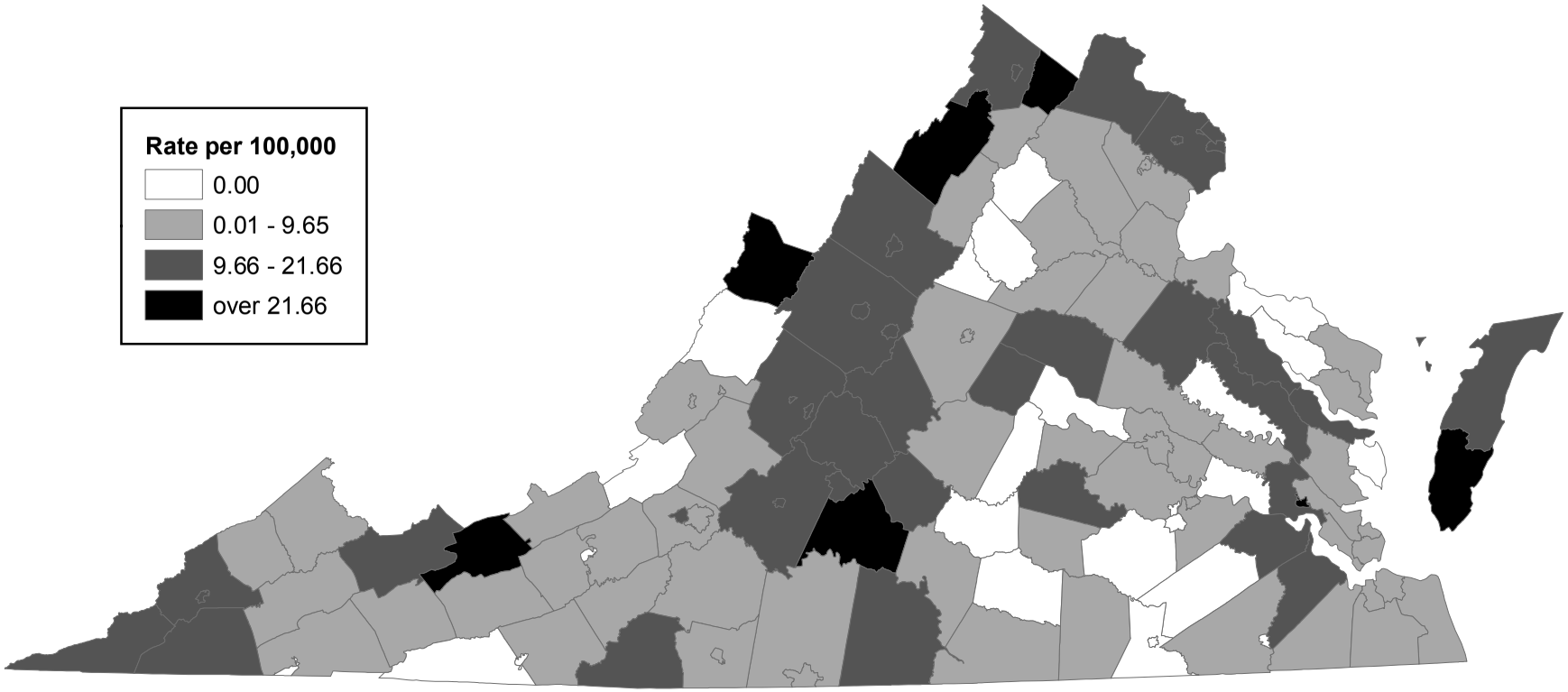
AIDS Incidence Rate by Locality
Virginia, 2008



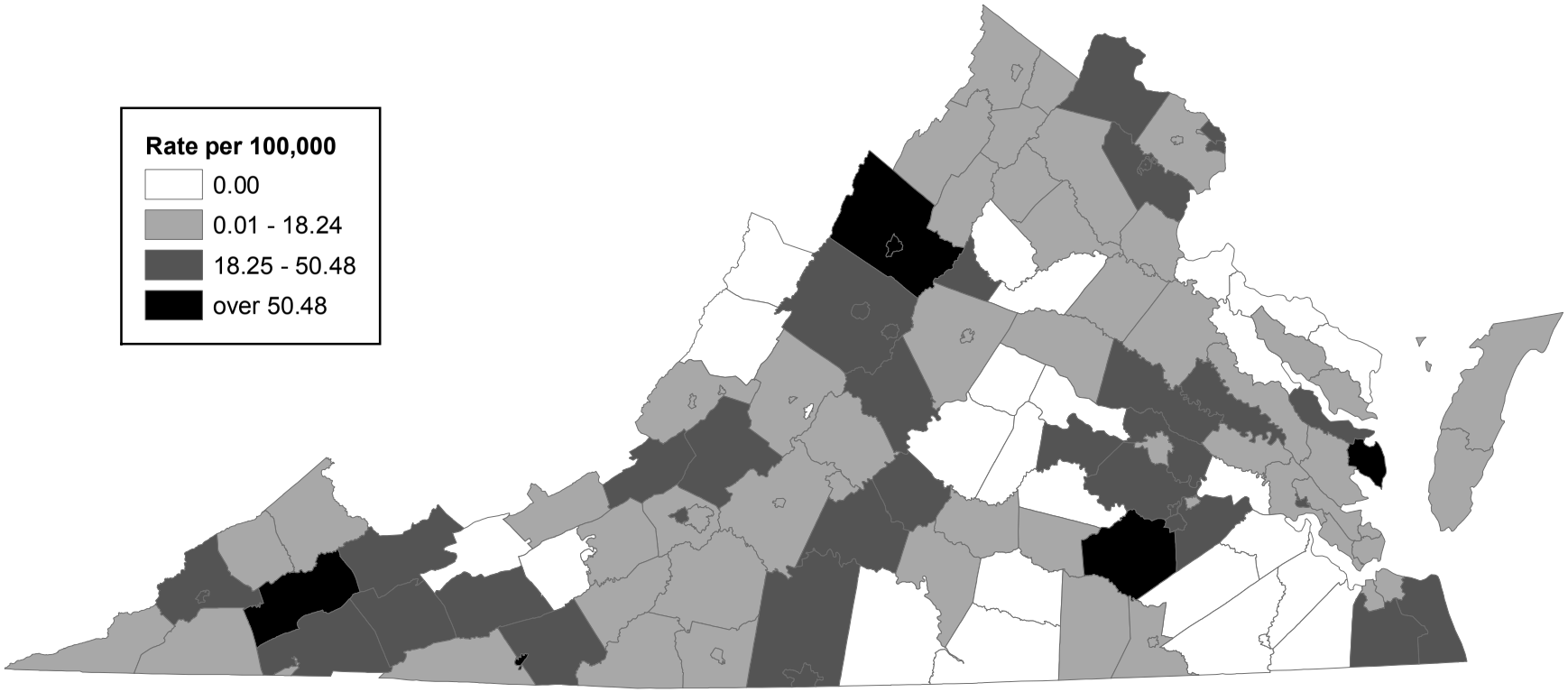
Amebiasis Incidence Rate by Locality
Virginia, 2008



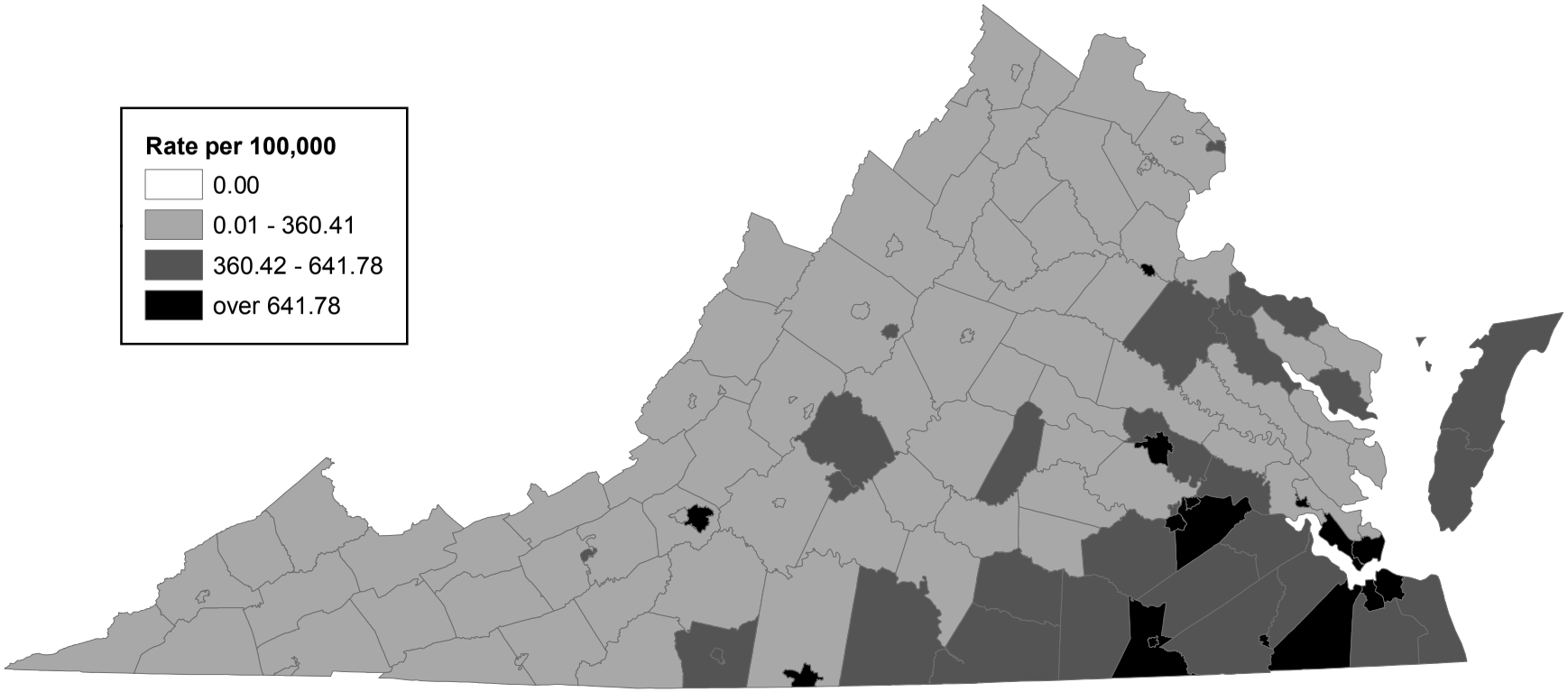
Campylobacteriosis Incidence Rate by Locality
Virginia, 2008



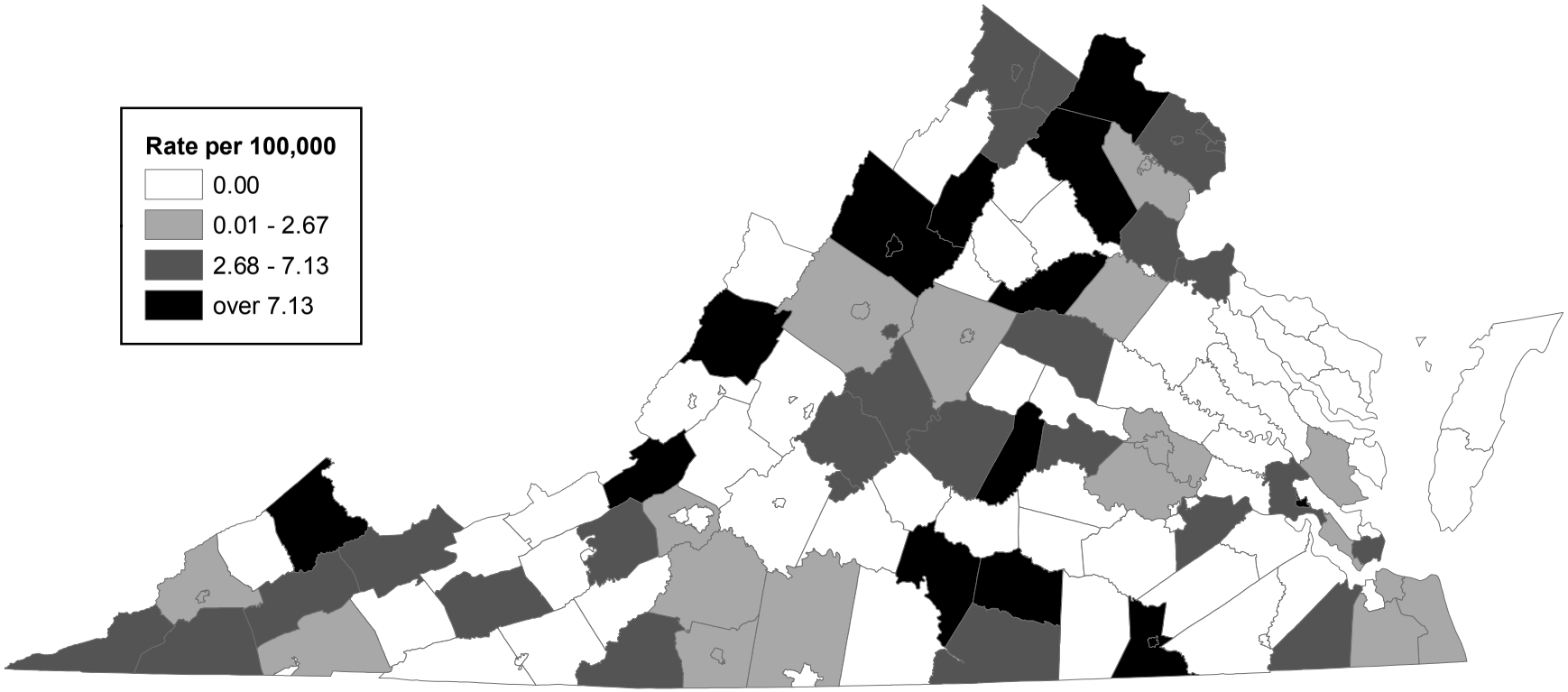
Chickenpox Incidence Rate by Locality
Virginia, 2008



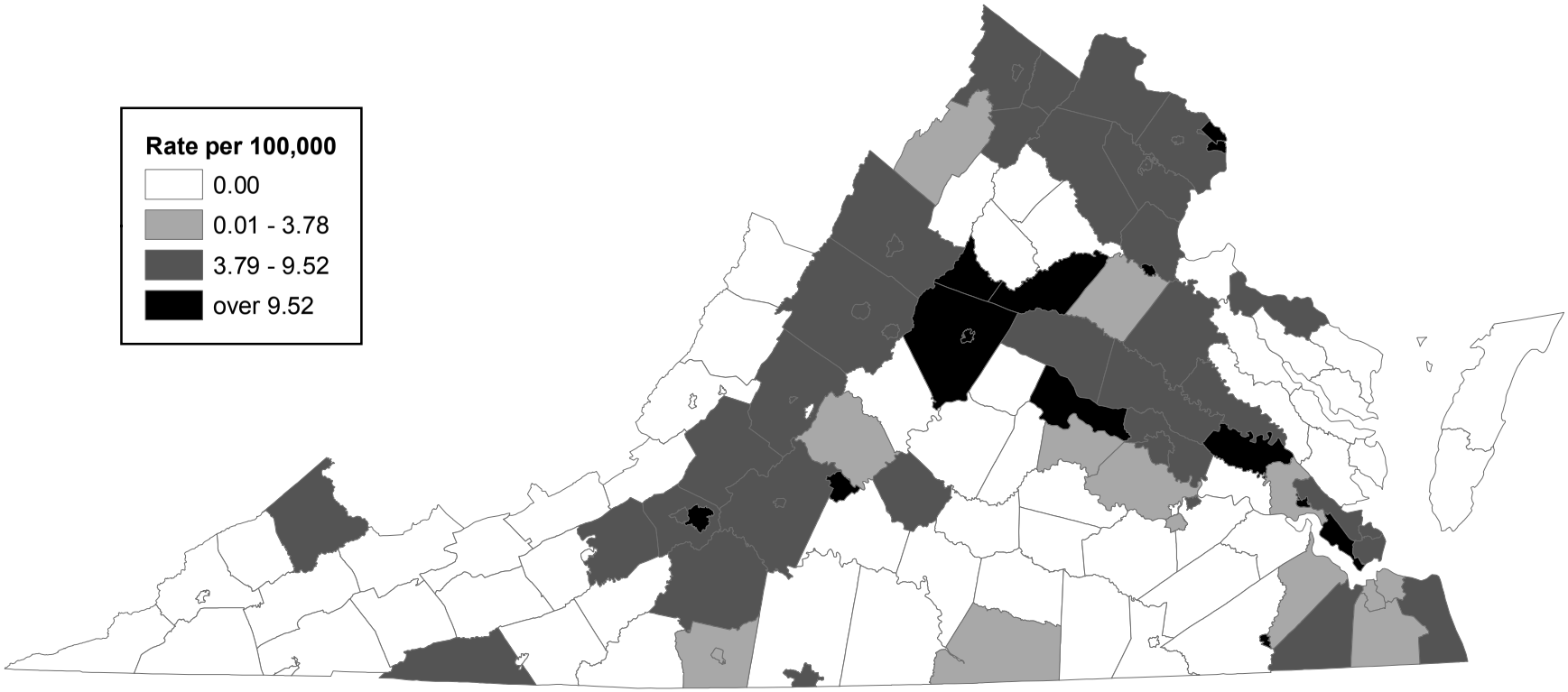
Chlamydia trachomatis Infection Incidence Rate by Locality Virginia, 2008



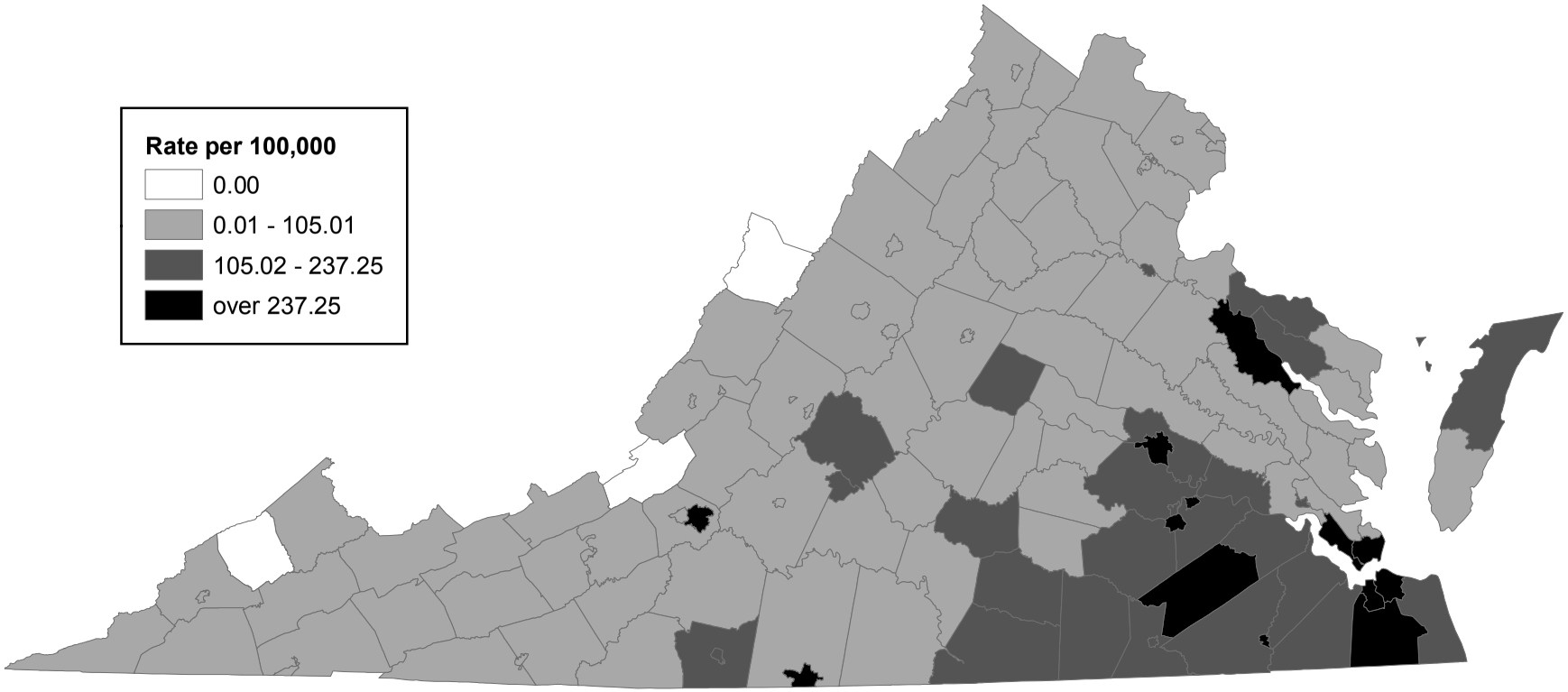
Escherichia coli Infection, Shiga Toxin-Producing Incidence Rate by Locality, Virginia, 2008



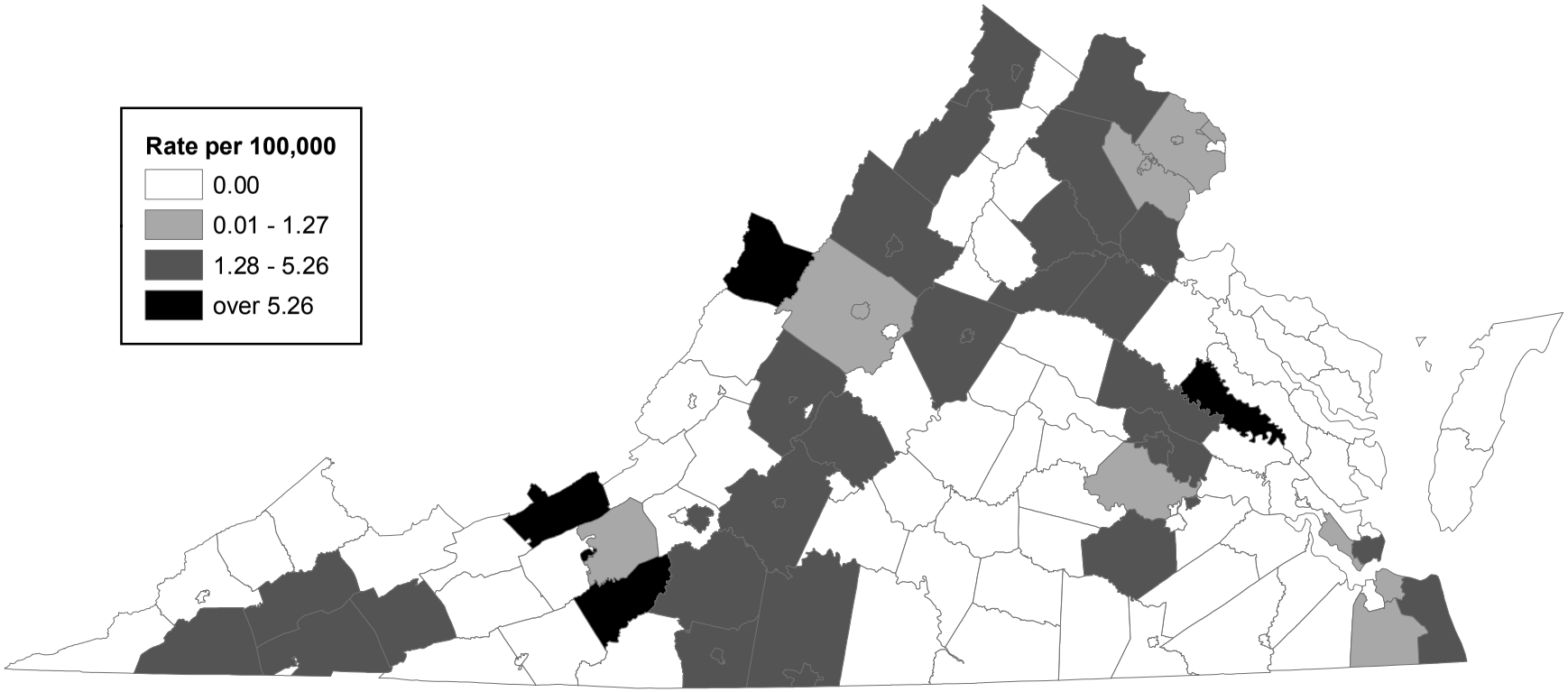
Giardiasis Incidence Rate by Locality
Virginia, 2008



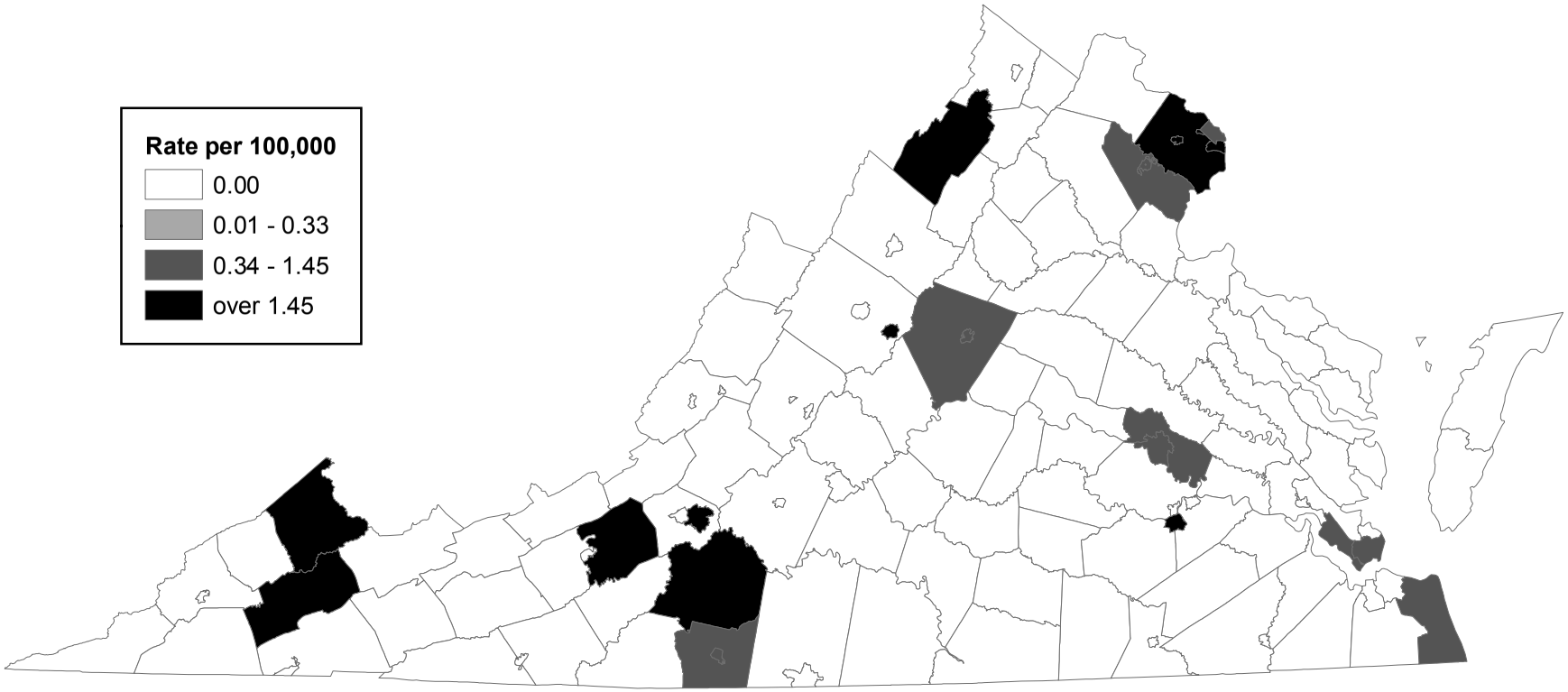
Gonorrhea Incidence Rate by Locality
Virginia, 2008



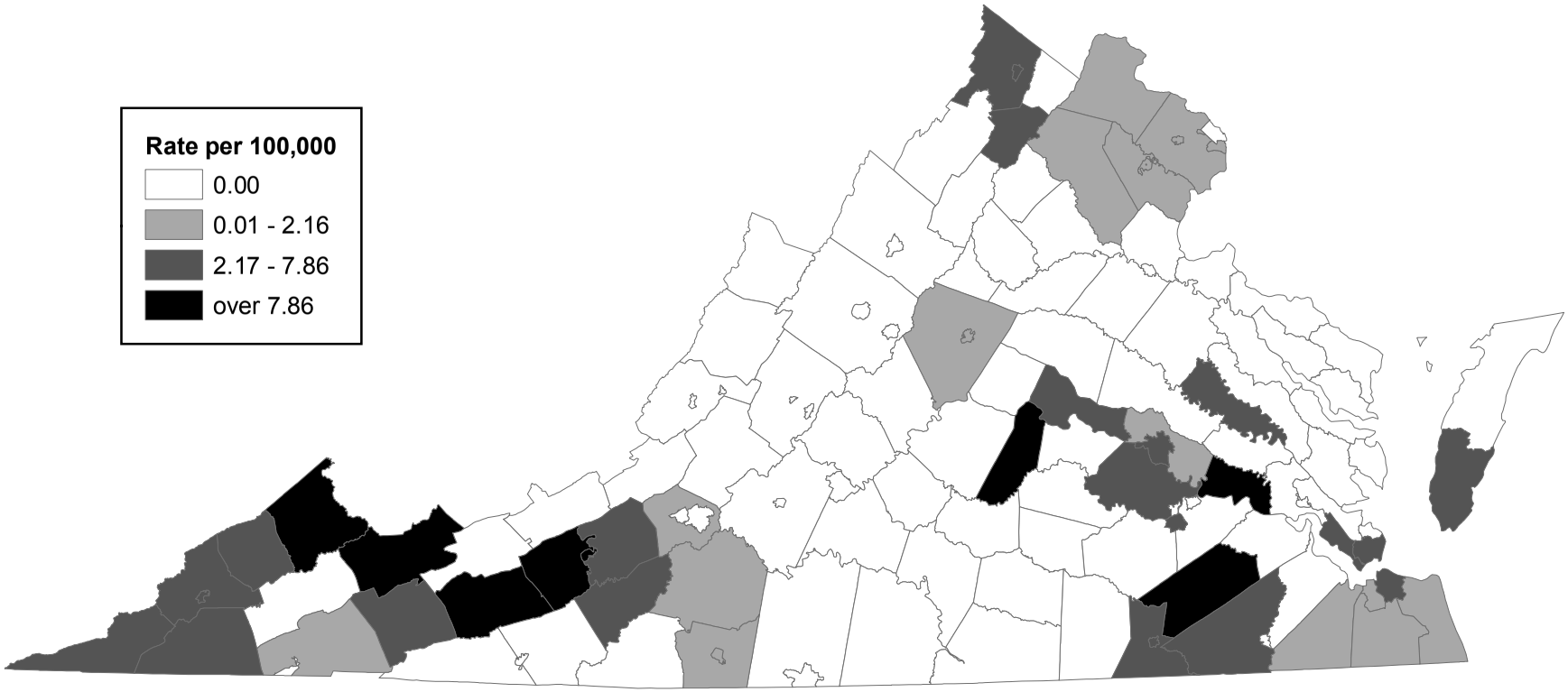
Haemophilus influenzae Infection, Invasive Incidence Rate by Locality, Virginia, 2008



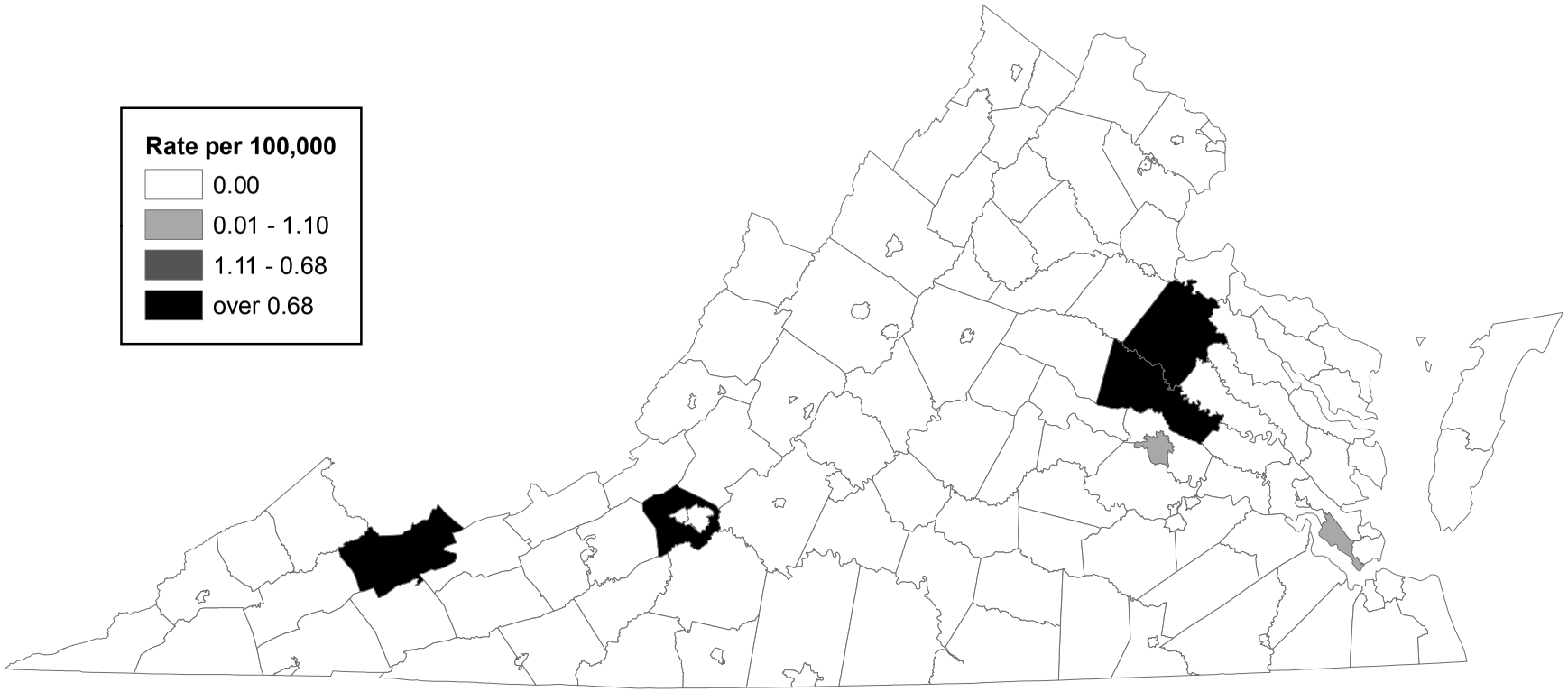
Hepatitis A Incidence Rate by Locality
Virginia, 2008



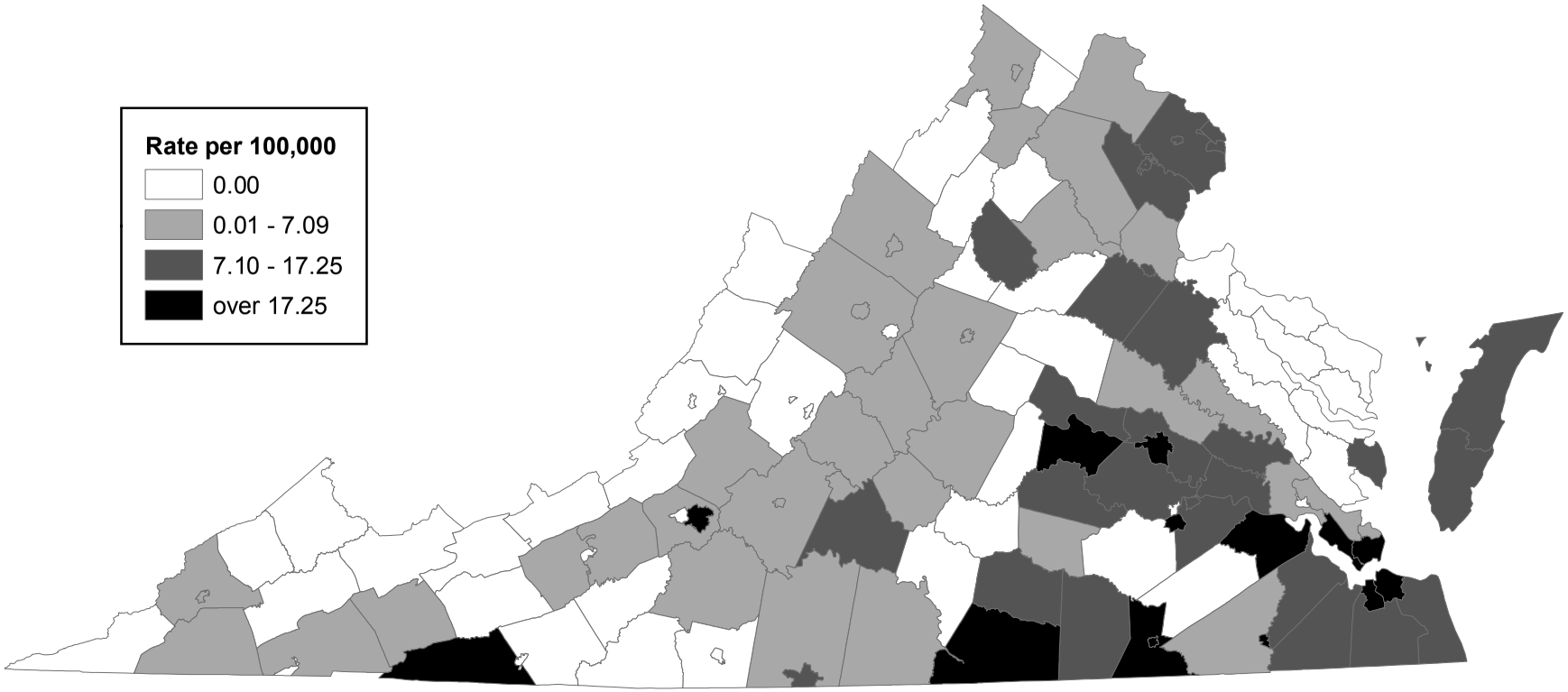
Hepatitis B, Acute, Incidence Rate by Locality
Virginia, 2008



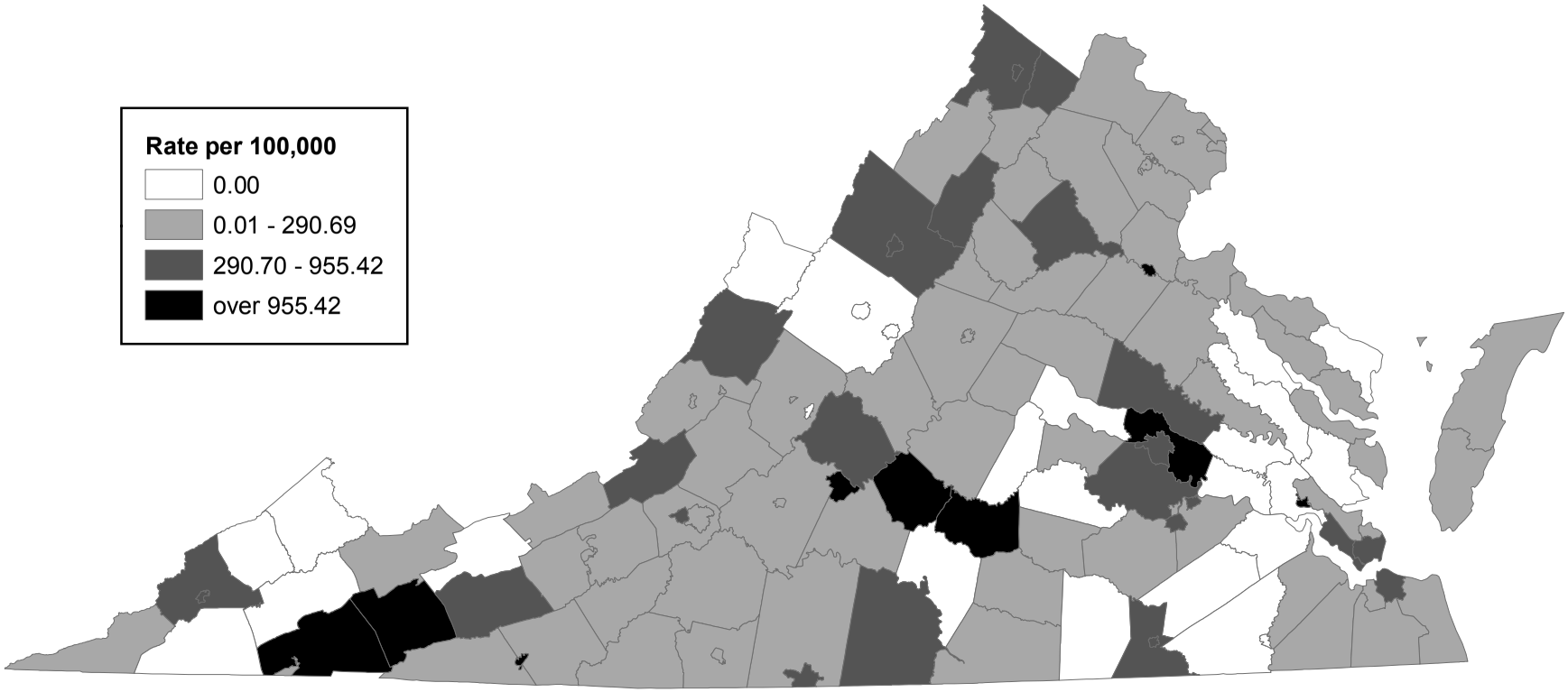
Hepatitis C, Acute, Incidence Rate by Locality
Virginia, 2008



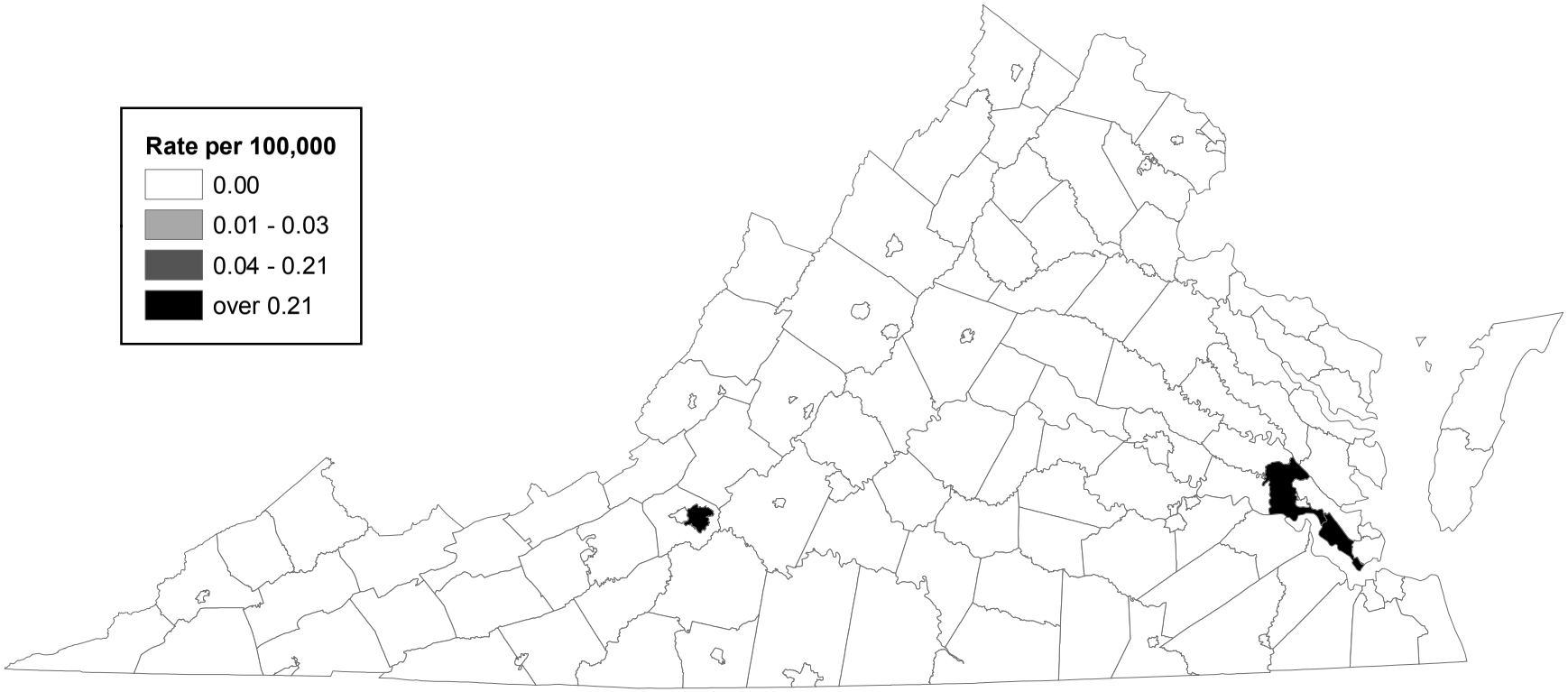
HIV Infection Incidence Rate by Locality
Virginia, 2008



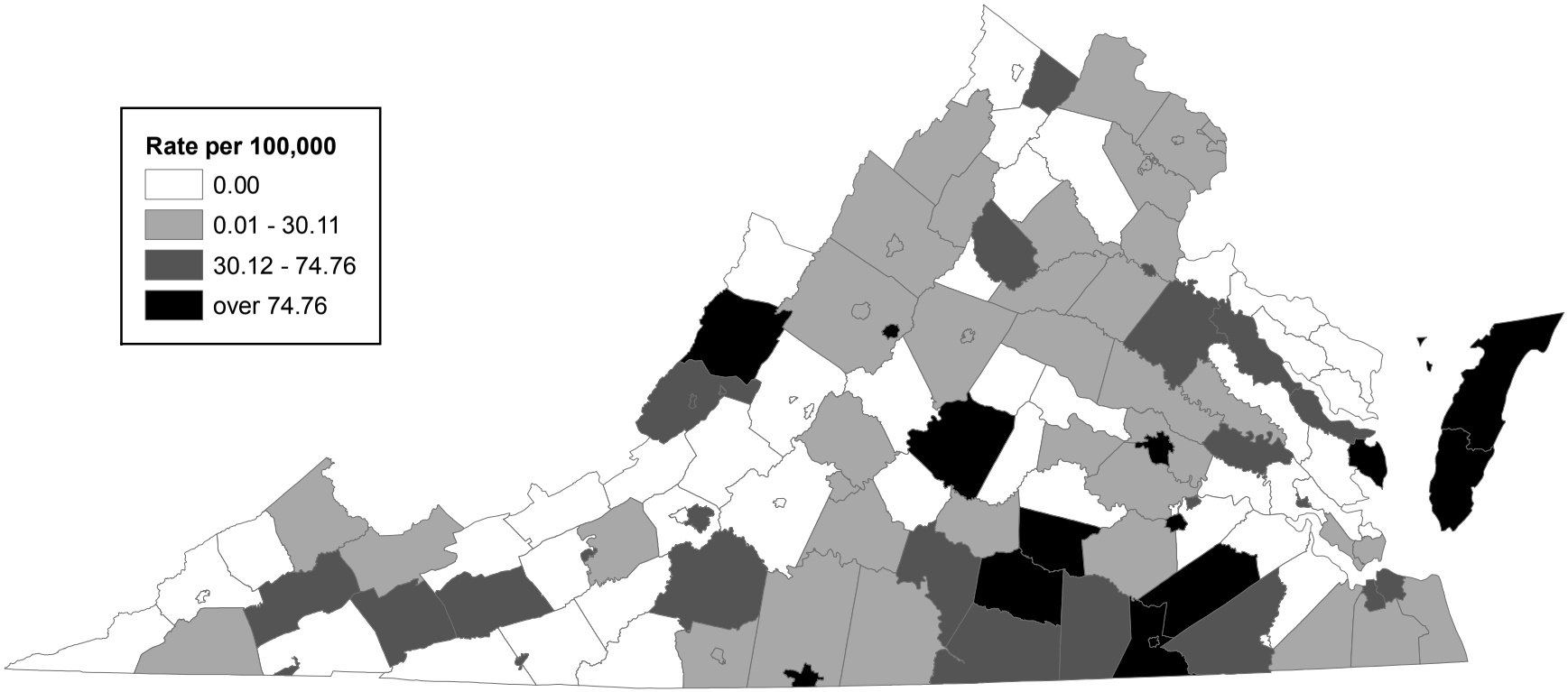
Influenza Incidence Rate by Locality
Virginia, 2008



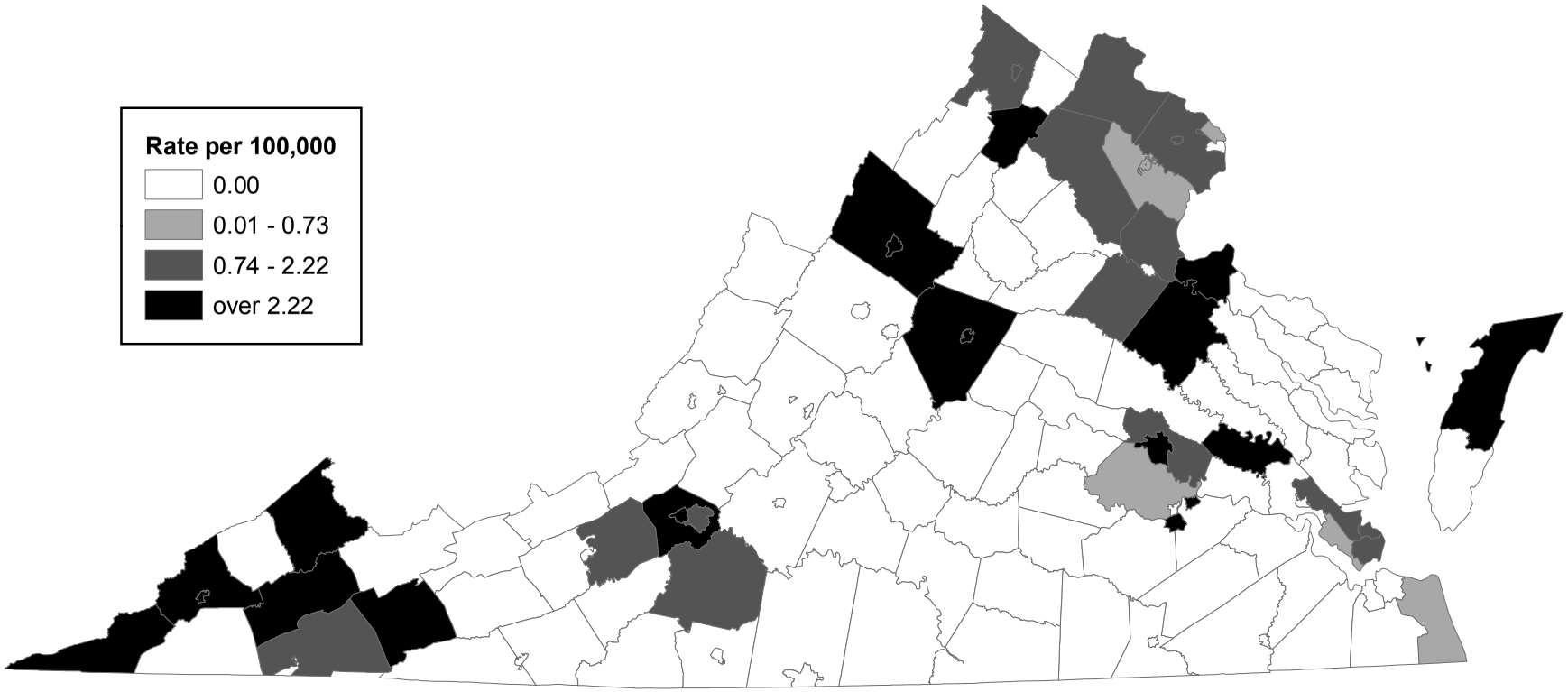
Kawasaki Syndrome Incidence Rate by Locality
Virginia, 2008



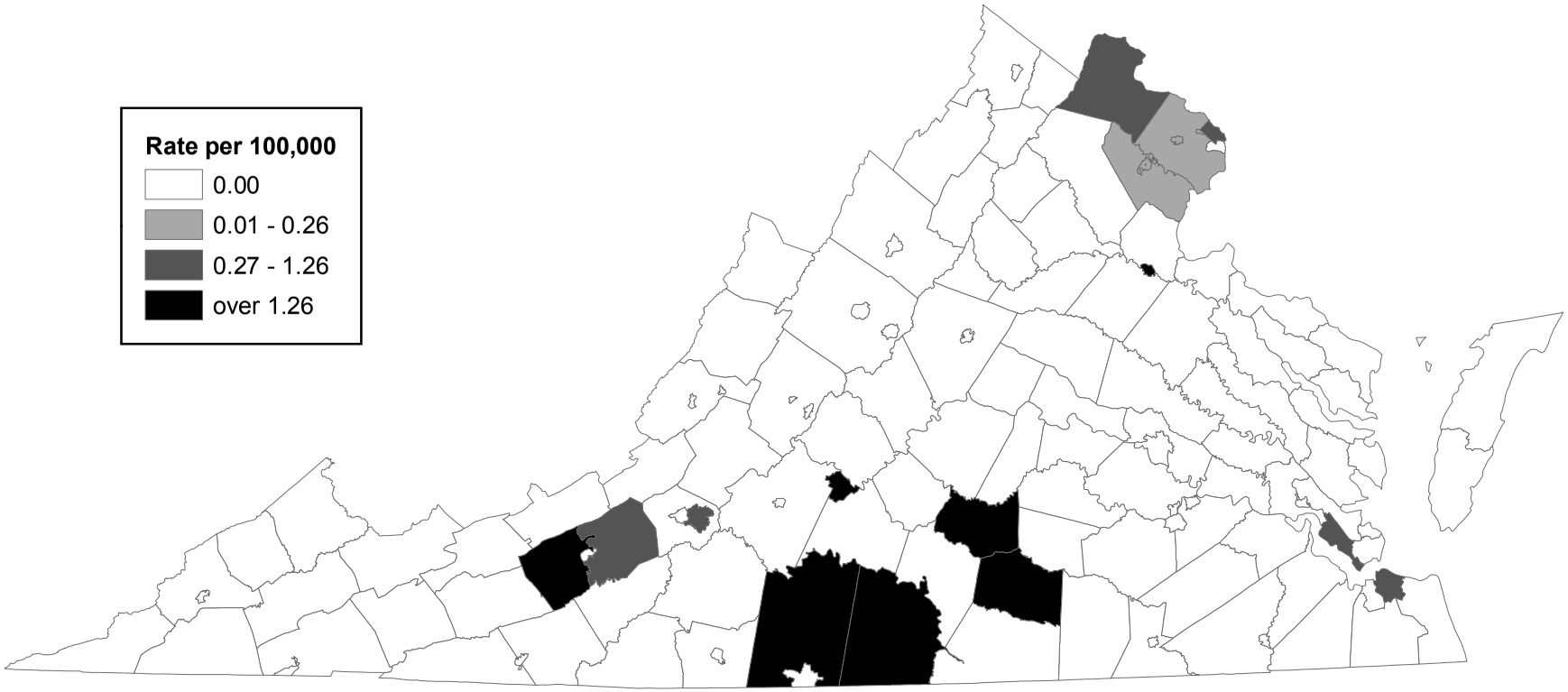
Lead - Elevated Blood Levels in Children
Incidence Rate by Locality, Virginia, 2008



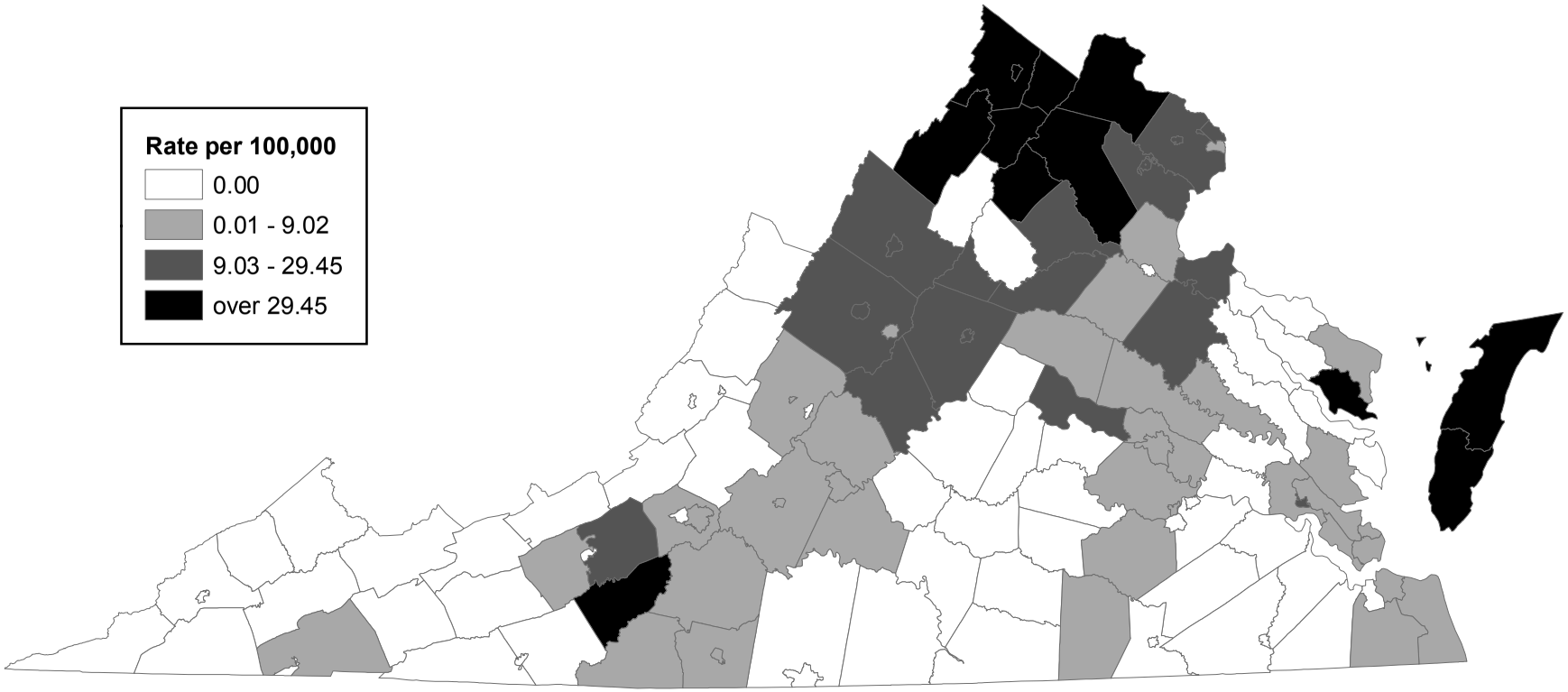
Legionellosis Incidence Rate by Locality
Virginia, 2008



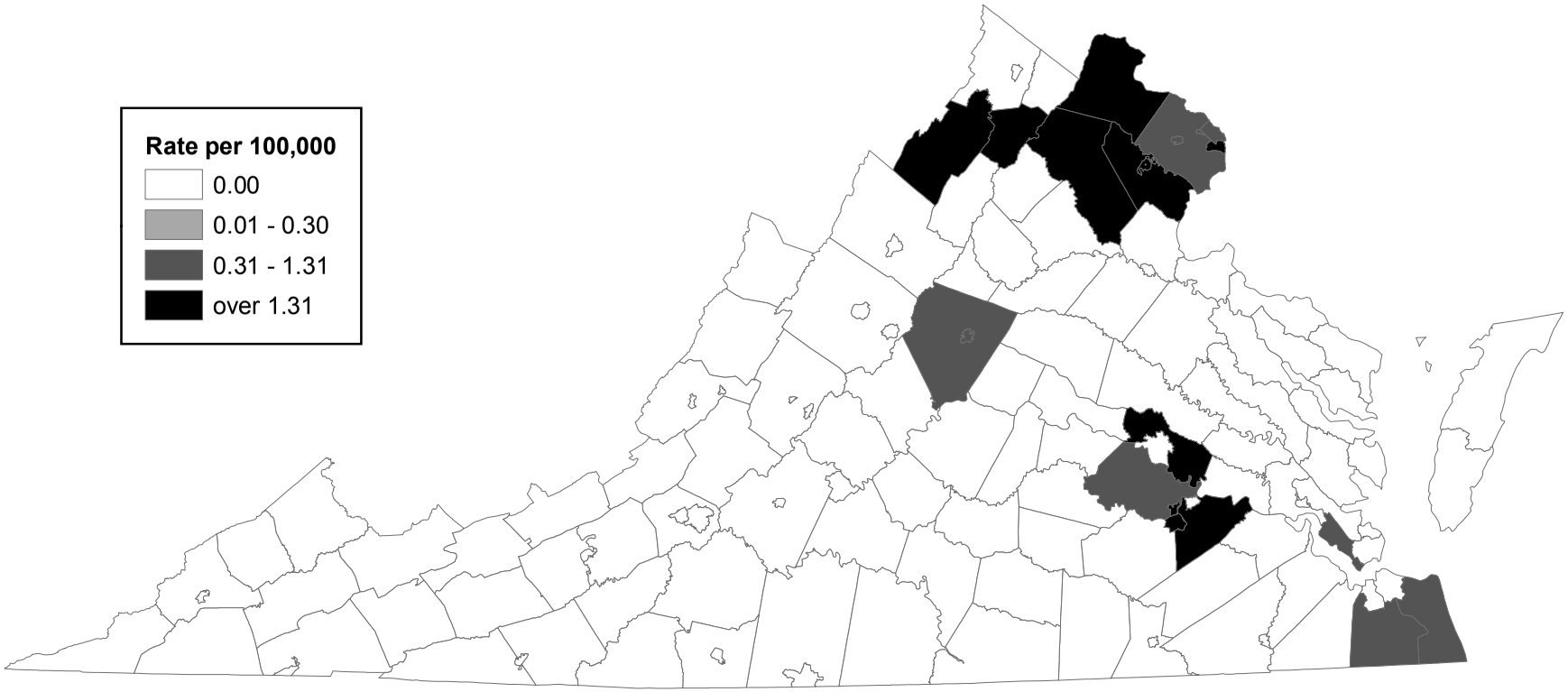
Listeriosis Incidence Rate by Locality
Virginia, 2008



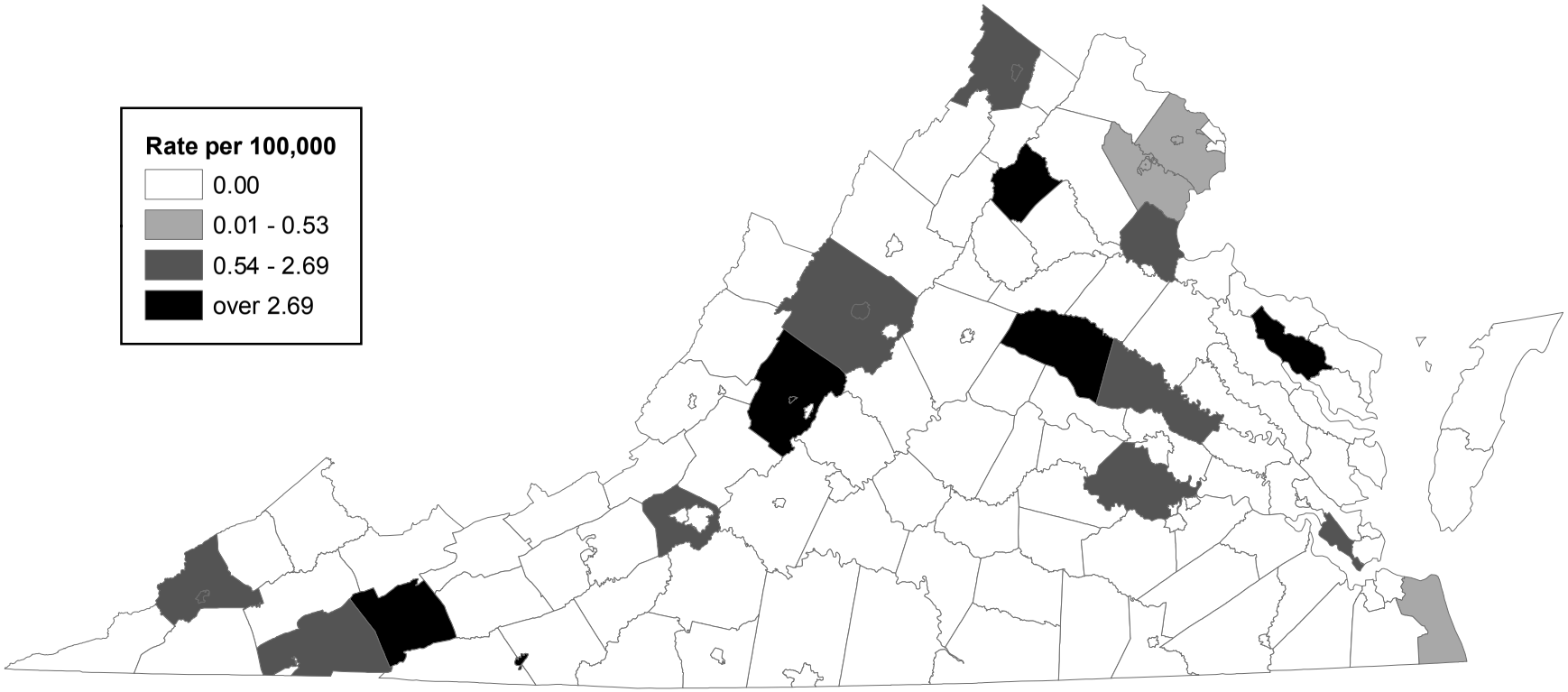
Lyme Disease Incidence Rate by Locality
Virginia, 2008



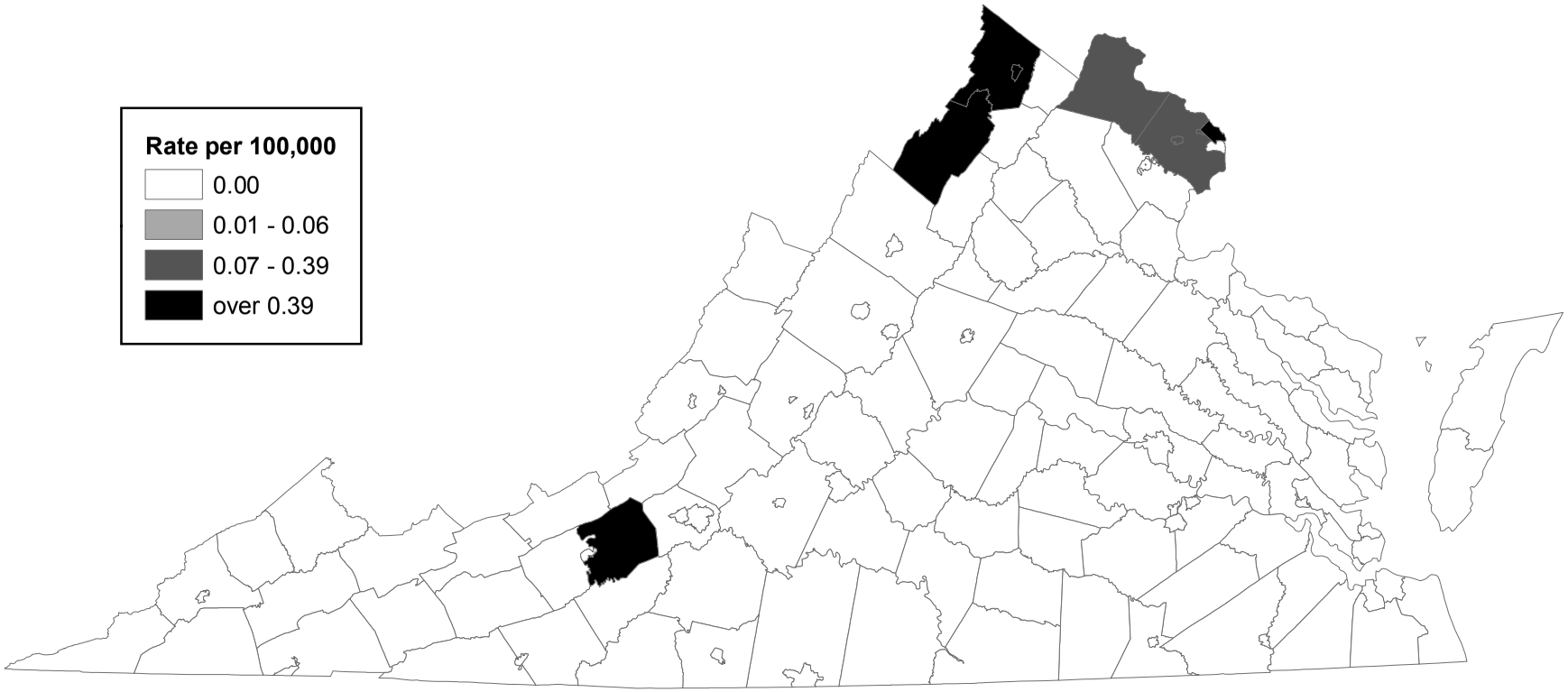
Malaria Incidence Rate by Locality
Virginia, 2008



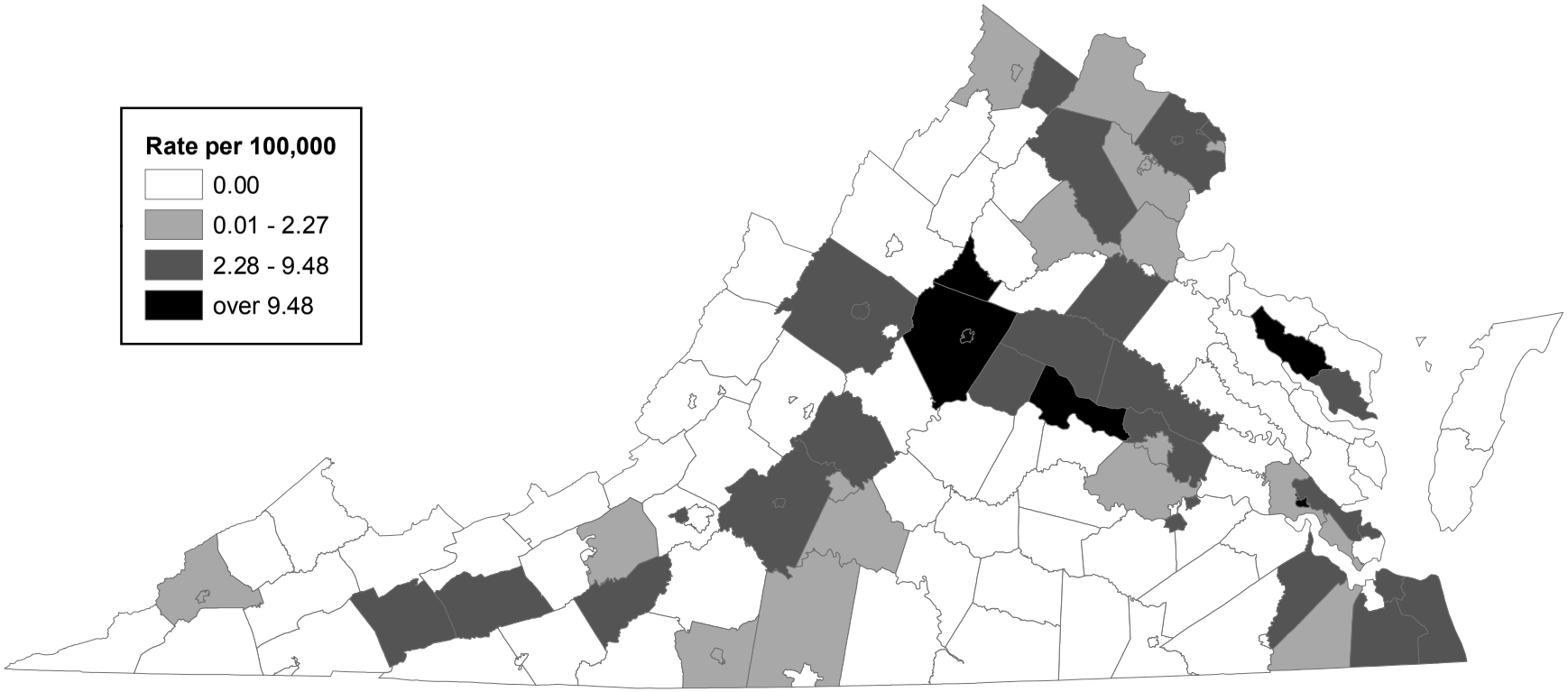
Meningococcal Disease Incidence Rate by Locality
Virginia, 2008



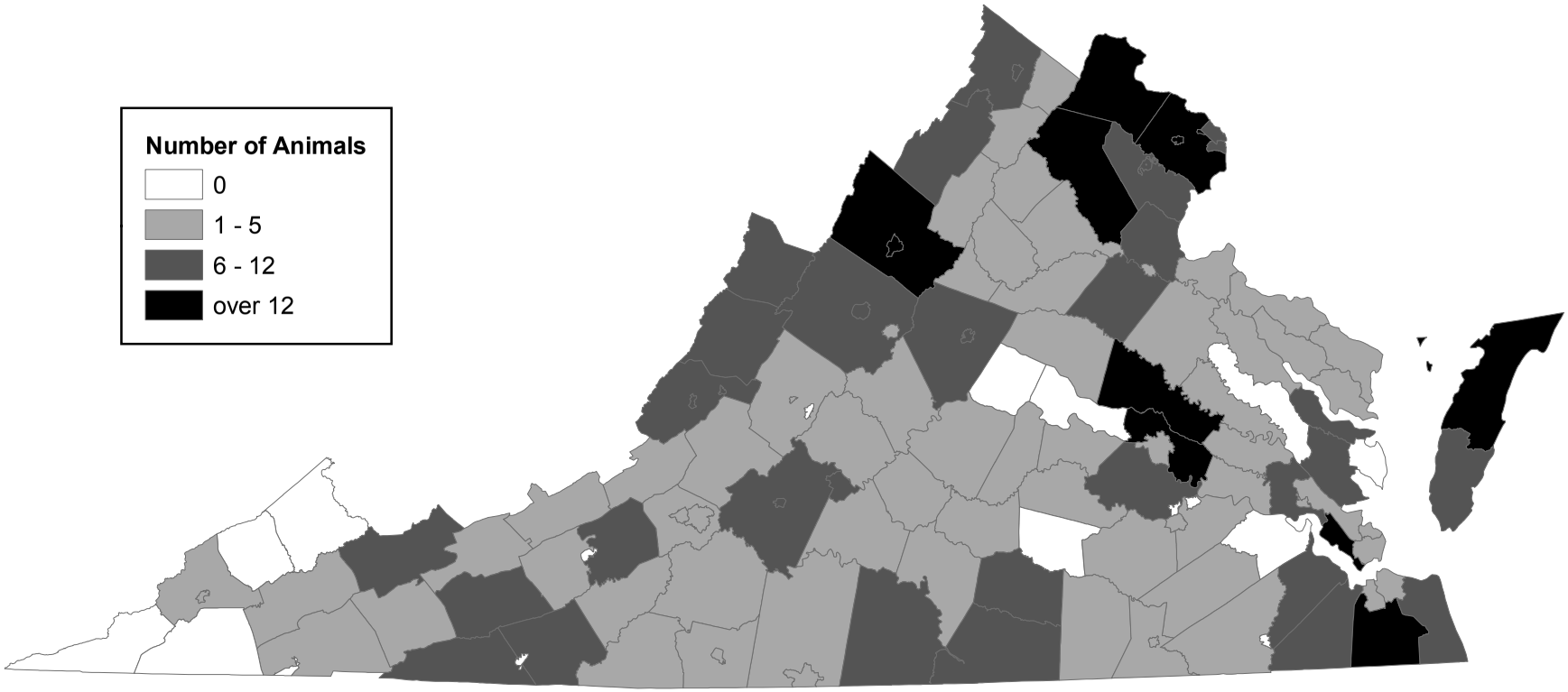
Mumps Incidence Rate by Locality
Virginia, 2008



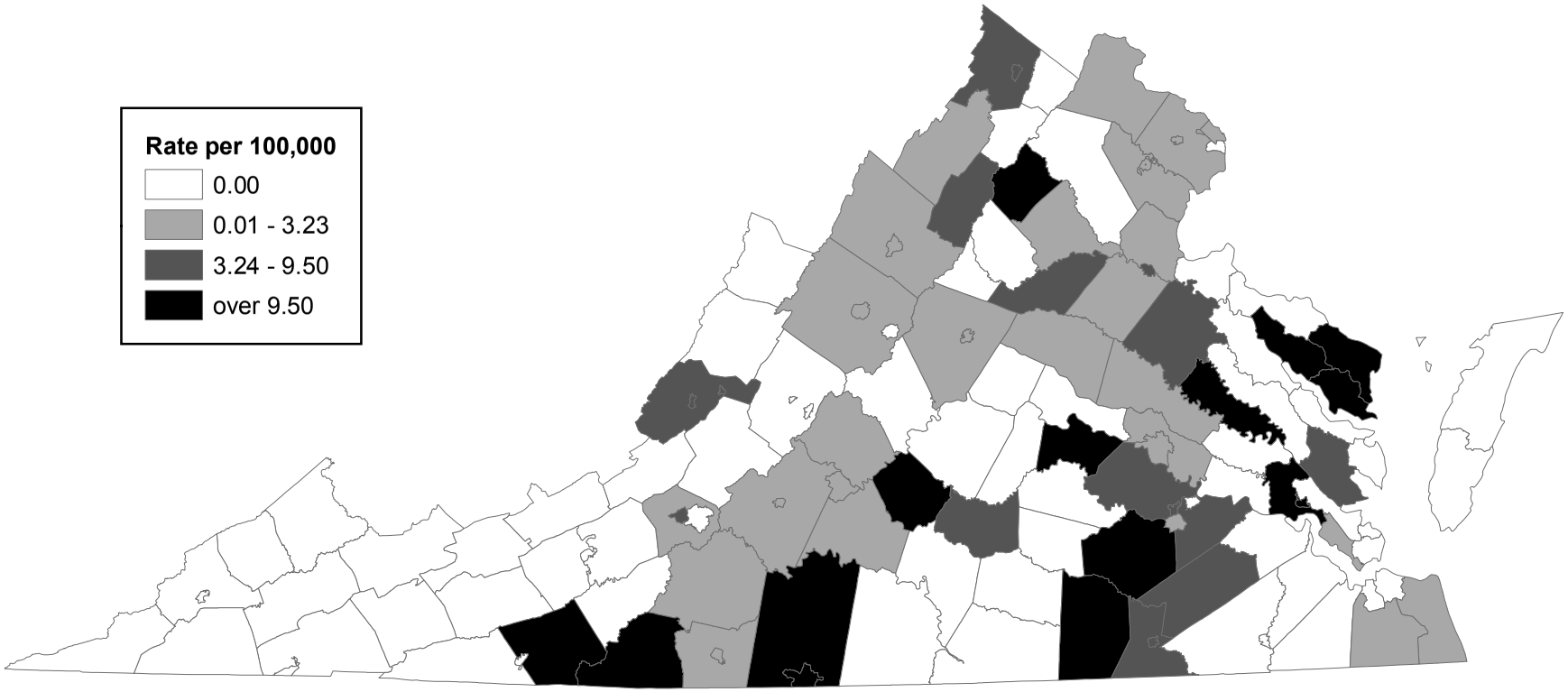
Pertussis Incidence Rate by Locality
Virginia, 2008



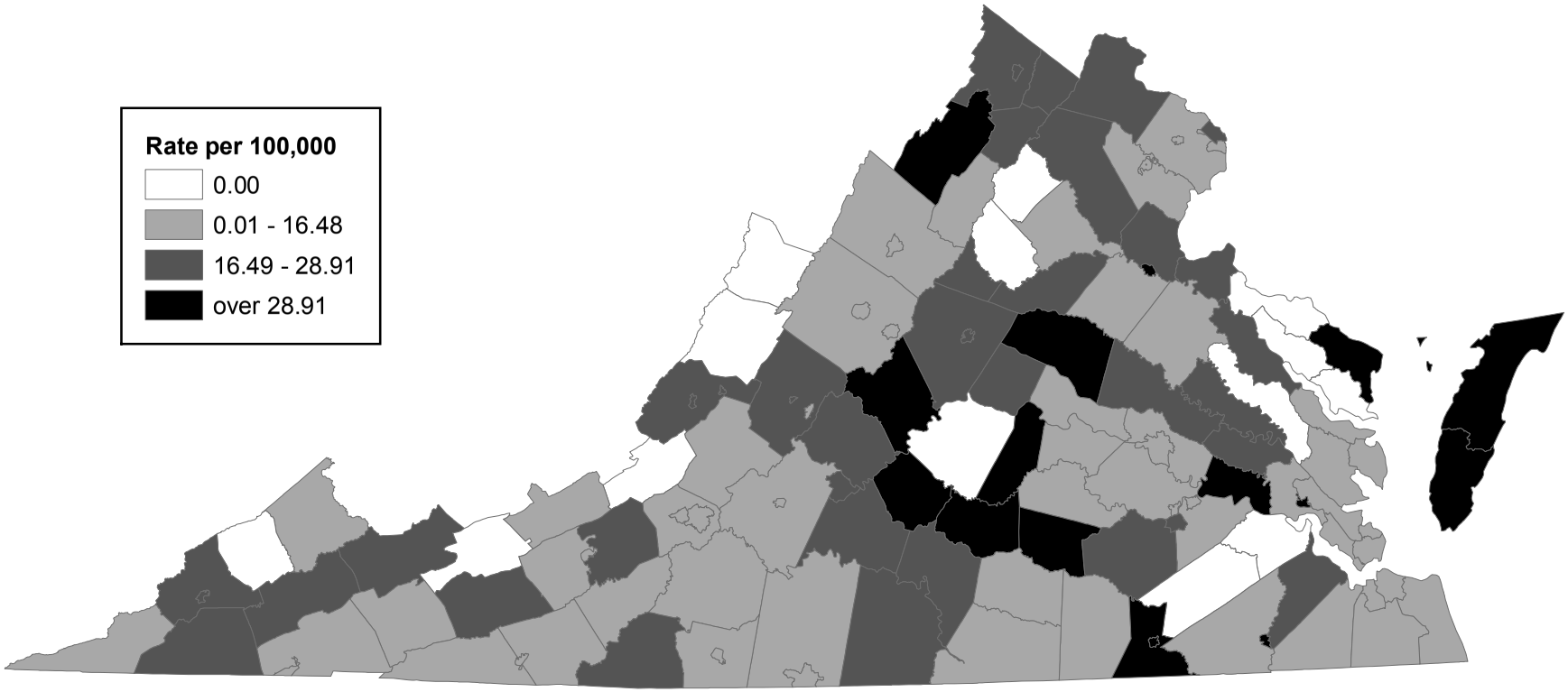
Rabies - Number of Animals Testing Positive by Locality, Virginia, 2008



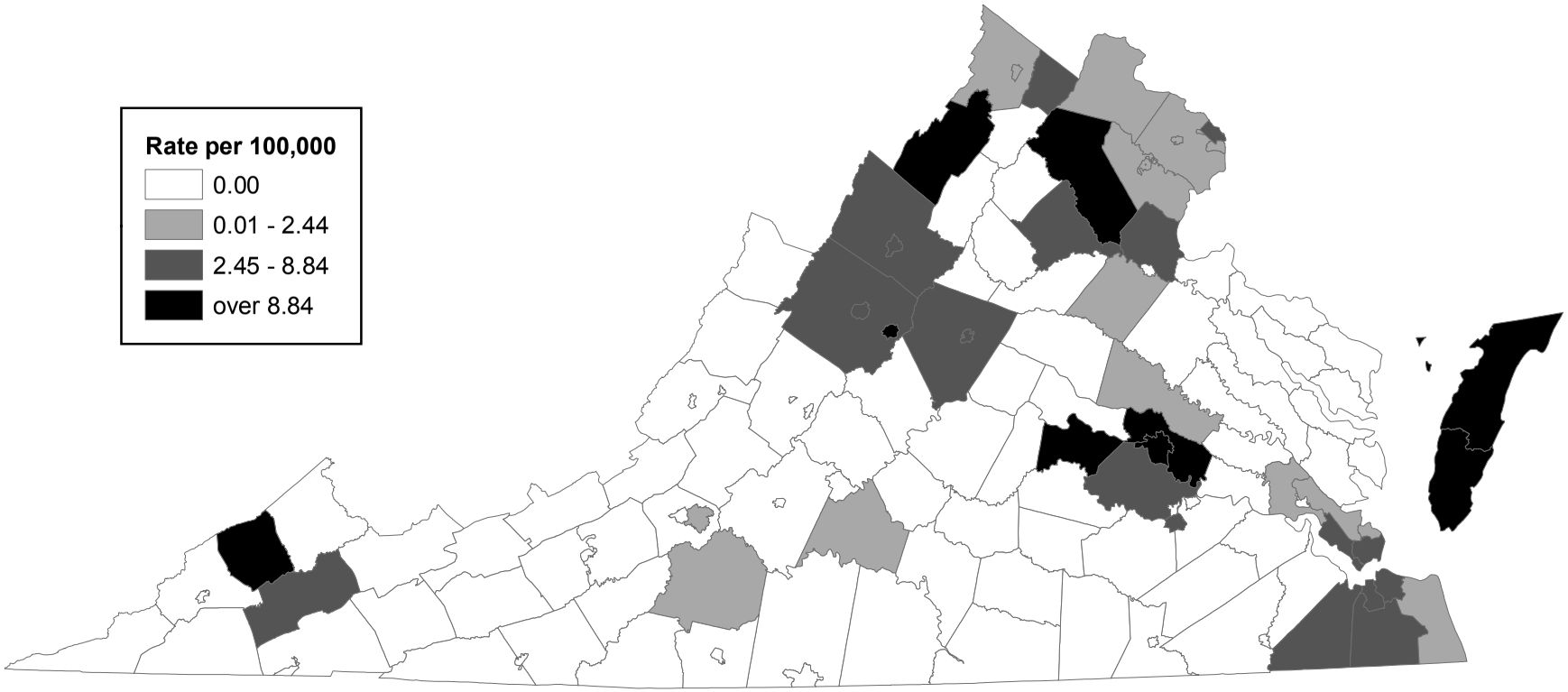
Rocky Mountain Spotted Fever Incidence Rate by Locality, Virginia, 2008



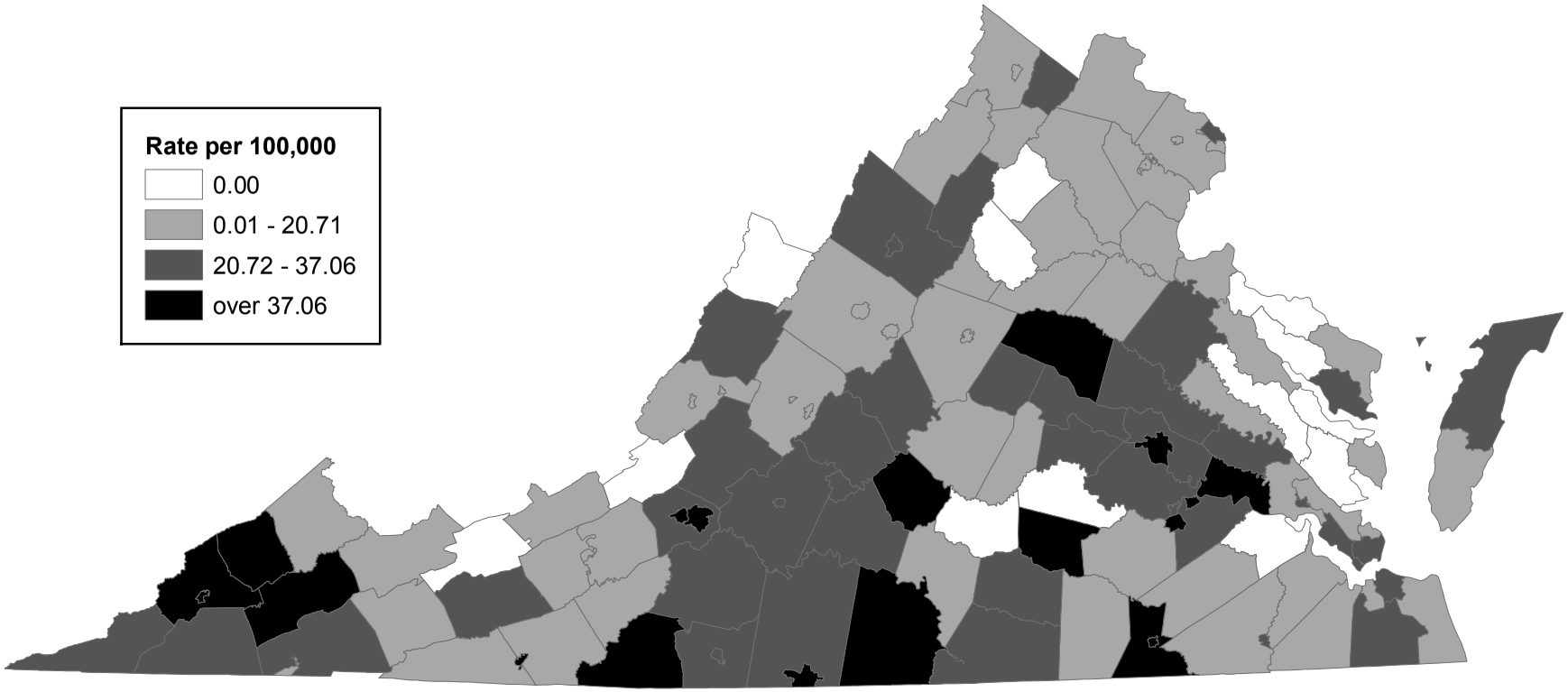
Salmonellosis Incidence Rate by Locality
Virginia, 2008



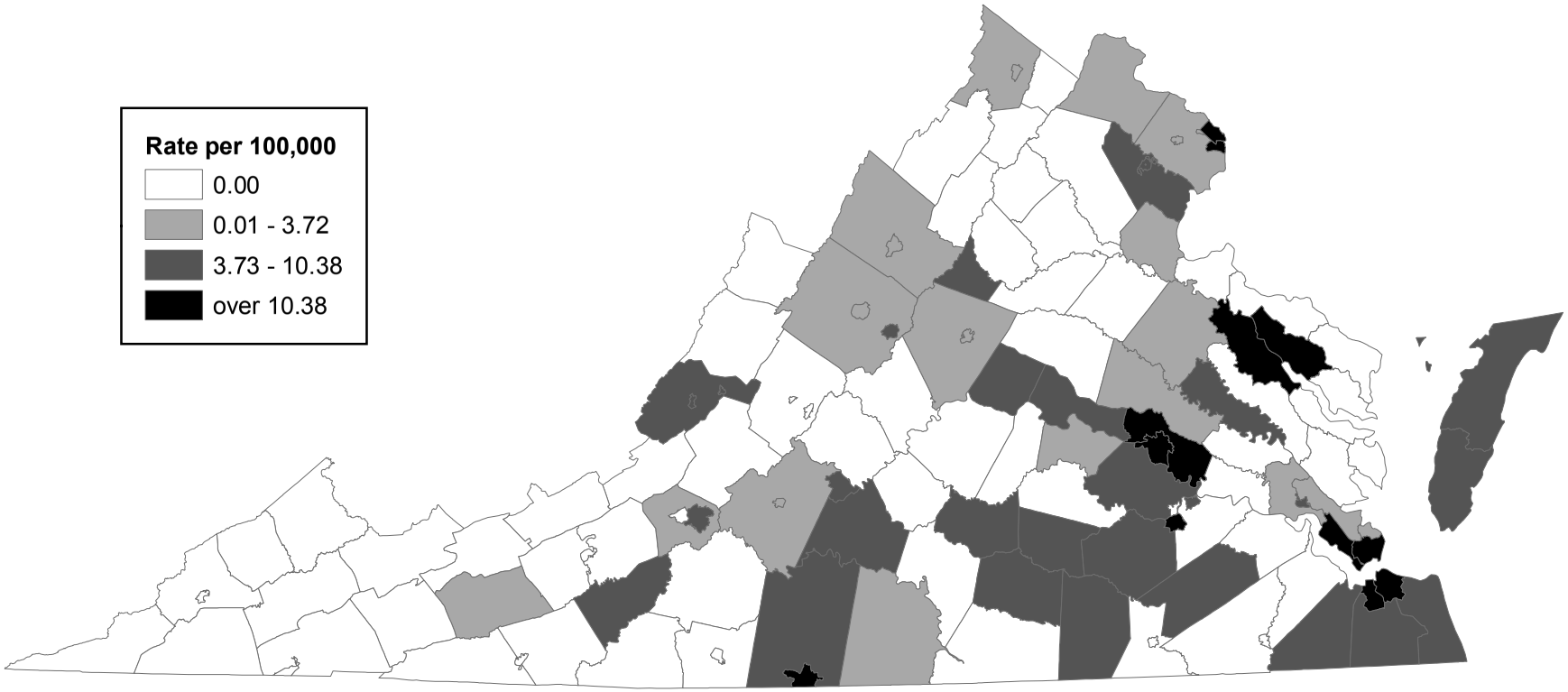
Shigellosis Incidence Rate by Locality
Virginia, 2008



Staphylococcus aureus Infection, Invasive (MRSA) Incidence Rate by Locality, Virginia, 2008



Syphilis, Early Stage, Incidence Rate by Locality
Virginia, 2008



Tuberculosis Incidence Rate by Locality
Virginia, 2008