Published monthly by the
VIRGINIA DEPARTMENT OF HEALTH
Office of Epidemiology
P.O. Box 2448
Richmond, Virginia 23218
http://www.vdh.virginia.gov
Telephone: (804) 864-8141

VDH VIRGINIA DEPARTMENT OF HEALTH
Protecting You and Your Environment

PRESORTED
STANDARD
U.S. POSTAGE
PAID
Richmond, Va.
Permit No. 591

VIRGINIA
EPIDEMIOLOGY BULLETIN

Robert B. Stroube, M.D., M.P.H., Health Commissioner
Carl W. Armstrong, M.D., State Epidemiologist

Christopher Novak, M.D., M.P.H., Editor
Vickie L. O'Dell, Layout Editor

May 2006 Volume 106, No.5
Annual Surveillance Issue

Summary of Notifiable Diseases, Virginia, 2005

Introduction

Public health surveillance is the ongoing, systematic collection, analysis, and interpretation of data regarding health-related events. The goals of surveillance are to reduce morbidity and mortality, and to improve health. For example, regular review of surveillance data allows healthcare professionals to improve their understanding of the health of the community and to identify new and emerging health issues. As a result, the Virginia Department of Health (VDH) Office of Epidemiology disseminates notifiable disease data through the *Virginia Epidemiology Bulletin* (VEB) and on the VDH website monthly. In addition, each year VDH publishes a report entitled *Reportable Disease Surveillance in Virginia* (available at www.vdh.virginia.gov/epi/survdata.asp). This issue of the VEB summarizes some of the key findings from disease surveillance in Virginia for 2005.

Data Sources

Reports of known or suspected notifiable conditions, including outbreaks, are primarily made by physicians, laboratories, infection control practitioners, administrators of long-term care facilities, childcare centers, camps, and schools. Reports are received by local health departments for appropriate action (e.g., further investigation, interventions, etc.), and forwarded to the Office of Epidemiology for centralized data analysis. This includes assessing the available laboratory test results and/or clinical information to determine if they meet case classifications developed by the Centers for Disease Control and Prevention (CDC) to improve the uniformity of data.

Population data for calculating incidence rates are based on 2004 U.S. Census Data.

Trend Data

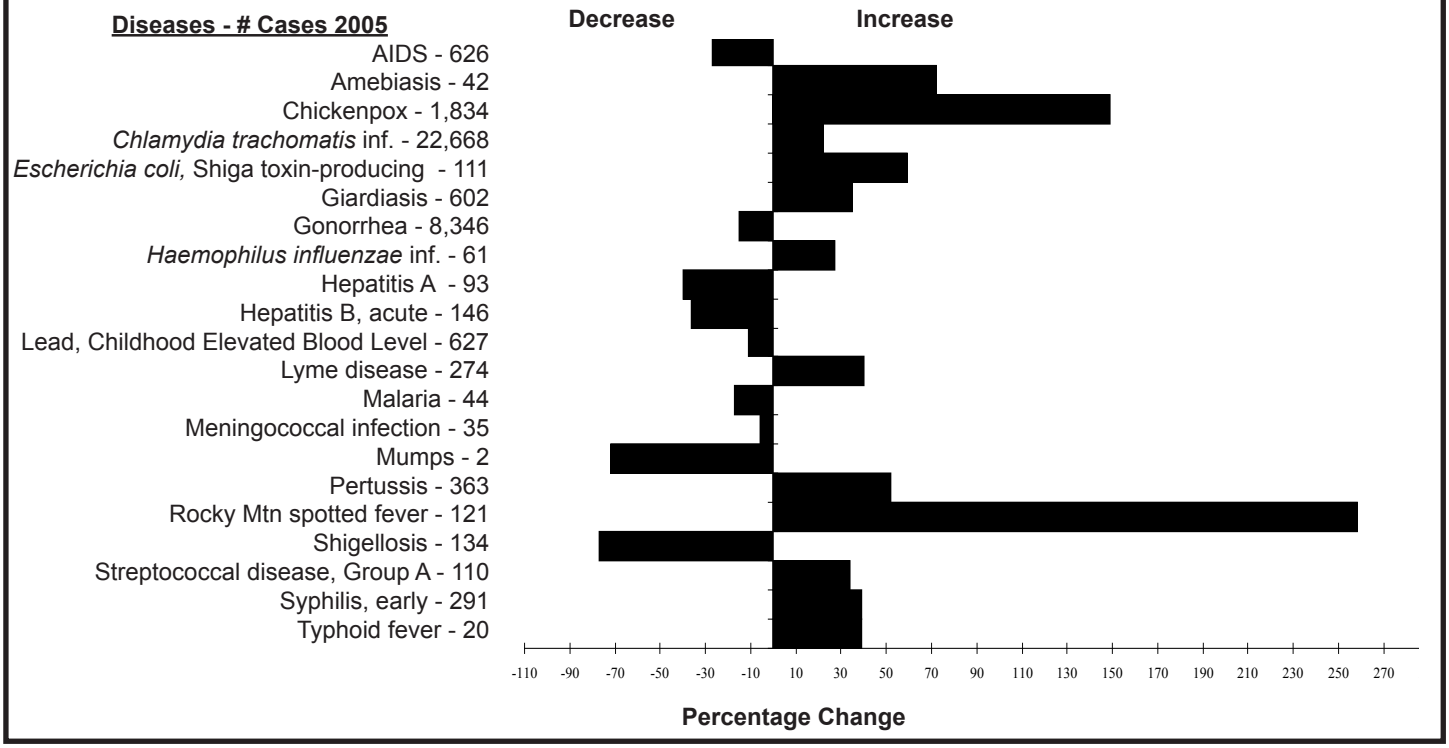
Figure 1 shows selected reportable diseases and the relative change (increase or decrease) in the number of cases reported in 2005 compared to the average annual number of cases reported during the previous five years (five-year mean). Table 1 shows the number of reported cases for selected diseases in Virginia from 1996-2005. Table 2 shows the number of cases reported in 2005 and rate per 100,000 population for selected diseases by region.

2005 HIGHLIGHTS FOR SELECTED DISEASES

AIDS/HIV

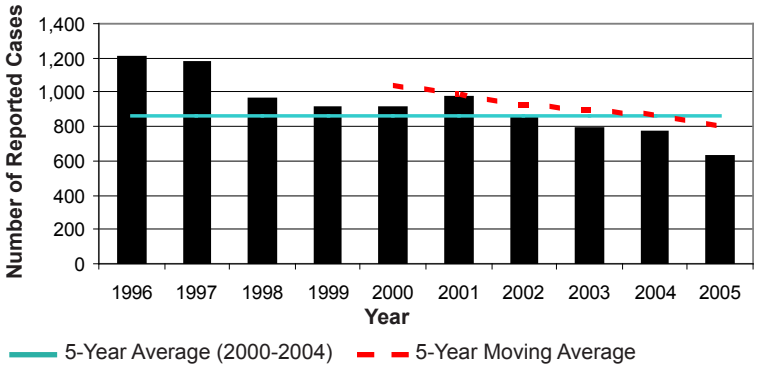
The decrease in the number of newly-reported cases of AIDS in 2005 is con-

Figure 1. Change in Disease Incidence in 2005 When Compared to Five-Year Mean



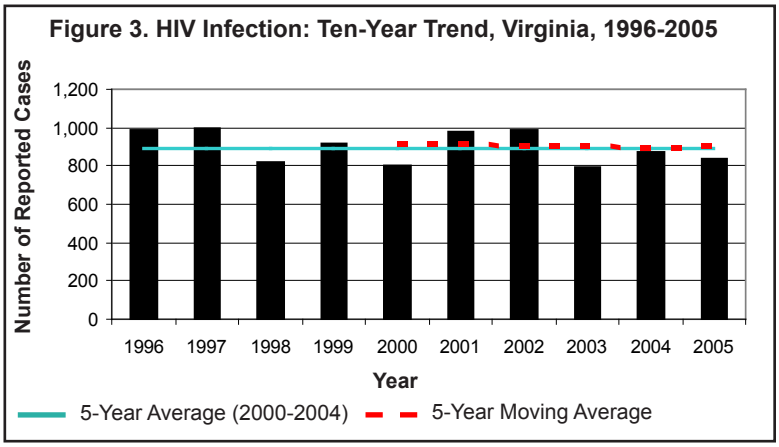
sistent with the downward trend observed over the past decade. The 626 new cases of AIDS reported in Virginia in 2005 were 19% below the level from 2004, and represent a 27% decrease from the five-year mean (Figure 2). This marks the lowest number of reported cases since the case classification was changed in 1993. The main cause for the decline in the number of cases of AIDS has been improved treatment of HIV infection.

Figure 2. AIDS: Ten-Year Trend, Virginia, 1996-2005



The 833 newly-reported cases of HIV infection in 2005 represent a 5% decrease from 2004 (Figure 3). This suggests that HIV infection prevention efforts have managed to impact disease transmission and remain extremely important. However, while progress in reducing HIV infection has been made, without a cure for HIV the continued new infections combined with the improved survival of individuals infected with HIV means that the prevalence of HIV infection in Virginia continues to increase (Figure 4). This has significant implications for healthcare and public health efforts in the Commonwealth.

Figure 3. HIV Infection: Ten-Year Trend, Virginia, 1996-2005



Arboviral Infection (Human)

Five human cases of arboviral infection were reported in Virginia in 2005 compared to seven cases in 2004 (Figure 5). Only one of the five cases was due to West Nile Virus (WNV); four were due to LaCrosse (LAC) virus infections. It is important to note that a large proportion (approximately 80%) of persons infected with WNV are asymptomatic or have only mild symptoms, and so the disease is rarely detected.

The cause of the significant decrease in reported WNV cases in 2004 and 2005 could be attributable to one or more factors, including: the impact of weather on virus replication and vector mosquito populations; mosquito control efforts and personal protection measures that may have protected more persons; and possibly fewer viremic wild birds to infect mosquitoes due to increased re-

Table 1. Ten-Year Trend in Number of Reported Cases of Selected Diseases in Virginia, 1996-2005										
Disease	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
AIDS	1,211	1,177	963	912	908	970	866	793	774	630
Amebiasis	28	30	31	34	24	37	16	20	25	42
Anthrax	0	0	0	0	0	2	0	0	0	0
Arboviral infection (SLE, WNV, EEE, LAC)	0	7	4	0	0	2	32	31	7	5
Brucellosis	0	1	1	0	1	1	0	2	1	1
Campylobacteriosis	790	644	700	637	574	583	686	882	668	618
Chickenpox (Varicella)	1,778	1,760	1,115	1,490	592	563	605	682	1,240	1,834
Chlamydia trachomatis infection	11,755	11,604	13,370	13,427	15,366	18,322	18,518	19,439	21,635	22,668
Ehrlichiosis (HGE, HME, Unspecified)	12	3	4	7	1	2	6	12	8	13
Escherichia coli infection, shiga toxin-producing	-	-	-	82	85	88	90	93	100	111
Giardiasis	405	465	503	471	437	417	386	426	563	602
Gonorrhea	9,292	8,731	9,215	9,315	10,166	11,082	10,462	9,062	8,565	8,346
Haemophilus influenzae infection, inv.	11	15	19	24	41	34	41	68	56	61
Hepatitis A	218	250	226	185	164	167	163	141	140	93
Hepatitis B, acute	163	137	109	106	174	213	224	227	303	146
Hepatitis C, acute, non-A non-B	17	27	13	11	3	3	15	15	15	13
HIV infection	987	998	825	922	804	977	992	797	875	833
Influenza	957	517	1,160	2,258	1,909	1,963	3,486	18,765	3,404	15,940
Kawasaki syndrome	19	27	36	33	29	28	11	11	16	19
Lead, Childhood Elevated Blood Level	801	749	686	527	723	678	792	644	703	627
Legionellosis	54	34	27	41	37	39	35	110	56	55
Listeriosis	16	7	8	17	9	15	10	18	27	17
Lyme disease	57	67	73	122	149	156	259	202	216	274
Malaria	60	73	61	76	55	54	36	60	59	44
Measles	3	1	2	18	2	1	0	0	0	0
Meningococcal infection	67	60	49	60	42	46	46	28	24	35
Mumps	19	21	13	11	11	8	5	1	11	2
Pertussis	108	59	56	65	134	272	168	219	400	363
Psittacosis	1	0	1	0	0	0	0	1	0	0
Rabies in animals	612	690	549	581	574	502	592	542	474	495
Rocky Mountain spotted fever	54	23	14	20	7	40	43	34	45	121
Salmonellosis	1,229	1,120	1,135	1,286	1,020	1,368	1,277	1,175	1,196	1,172
Shigellosis	746	416	200	136	460	784	1,061	451	167	134
Streptococcal disease, Group A, invasive	-	-	-	30	57	85	82	111	74	110
Streptococcus pneumoniae, invasive** (<5 yrs)	-	-	-	-	0	0	20	27	35	37
Syphilis, early	798	615	379	364	266	235	165	156	224	291
Toxic substance exposure-related illnesses (adult)	268	237	349	345	397	430	491	212	317	313
Tuberculosis	349	349	339	334	292	306	315	332	329	355
Typhoid fever	11	5	7	11	22	15	8	16	11	20
** If less than 5 years of age - Not a reportable disease at this time										

sistance to the disease among exposed bird populations.

Cases of LAC in Virginia have historically been limited to the southwestern parts of the state, but increasingly cases are being identified in more northern and central regions. Although reasons for this are unknown, the geographic expansion of the LaCrosse endemic region might be the result of the establishment of new mosquito vectors such as the Asian tiger mosquito and Asian bush mosquito in Virginia over the past ten years. This suggests that healthcare professionals providing care in regions that have not generally had LaCrosse encephalitis should be aware of the condition. In addition, an increased awareness of arboviral diseases due to the recent appearance of WNV may also be increasing physician reporting of LAC.

Campylobacteriosis

Campylobacter spp. remain an important cause of bacterial gastroenteritis in Virginia. The number of cases of campylobacteriosis reported in 2005

Table 2. Number of Reported Cases and Rate per 100,000 Population for Selected Diseases by Health Planning Region, Virginia, 2005											
	Total	Northwest Region		Northern Region		Southwest Region		Central Region		Eastern Region	
Population	7,459,827	1,120,612		1,975,199		1,308,254		1,268,943		1,786,819	
		No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate
AIDS	626	68	6.1	191	9.7	43	3.3	138	10.9	186	10.4
Amebiasis	42	5	0.4	18	0.9	8	0.6	8	0.6	3	0.2
Campylobacteriosis	618	125	11.2	159	8.0	126	9.6	82	6.5	126	7.1
Chickenpox (Varicella)	1,834	343	30.6	433	21.9	322	24.6	304	24.0	432	24.2
Chlamydia trachomatis infection	22,668	2,577	230.0	3,174	160.7	2,830	216.3	5,053	398.2	9,034	505.6
Escherichia coli infection, shiga toxin-producing	111	19	1.7	41	2.1	15	1.1	20	1.6	16	0.9
Other enterohemorrhagic *E. coli* infections	58	12	1.1	20	1.0	3	0.2	12	0.9	11	0.6
Giardiasis	602	89	7.9	182	9.2	134	10.2	109	8.6	88	4.9
Gonorrhea	8,346	546	48.7	664	33.6	1,087	83.1	2,474	195.0	3,575	200.1
Haemophilius influenzae infection, invasive	61	17	1.5	6	0.3	15	1.1	12	0.9	11	0.6
Hepatitis A	93	12	1.1	45	2.3	7	0.5	8	0.6	21	1.2
Hepatitis B, acute	146	14	1.2	19	1.0	41	3.1	34	2.7	38	2.1
Hepatitis C, acute	13	3	0.3	2	0.1	6	0.5	1	0.1	1	0.1
HIV infection	833	61	5.4	230	11.6	66	5.0	212	16.7	264	14.8
Influenza	15,940	1,693	151.1	5,279	267.3	2,309	176.5	3,827	301.6	2,842	159.1
Kawasaki syndrome	19	0	0.0	4	0.2	5	0.4	1	0.1	9	0.5
Legionellosis	55	9	0.8	9	0.8	13	1.0	7	0.6	17	1.0
Listeriosis	17	5	0.4	3	0.2	2	0.2	2	0.2	5	0.3
Lyme disease	274	49	4.4	159	8.0	14	1.1	17	1.3	35	2.0
Malaria	44	3	0.3	18	0.9	12	0.9	7	0.6	4	0.2
Meningococcal infection	35	5	0.4	5	0.3	7	0.5	3	0.2	15	0.8
Mumps	2	0	0.0	1	0.1	0	0.0	1	0.1	0	0.0
Pertussis	363	136	12.1	74	3.7	56	4.3	30	2.4	67	3.7
Rabies in animals	495	131	-	88	-	133	-	68	-	75	-
Rocky Mountain spotted fever	121	9	0.8	15	0.8	31	2.4	22	1.7	44	2.5
Salmonellosis	1,172	165	14.7	301	15.2	221	16.9	249	19.6	236	13.2
Shigellosis	134	16	1.4	66	3.3	13	1.0	22	1.7	17	1.0
Streptococcal disease, Group A, invasive	110	25	2.2	19	1.0	27	2.1	20	1.6	19	1.1
Syphilis, early	291	19	1.7	83	4.2	10	0.7	39	3.1	140	7.9
Tuberculosis	355	19	1.7	183	9.3	19	1.5	52	4.1	82	4.6
Typhoid fever	20	0	0.0	16	0.8	0	0.0	0	0.0	4	0.2

decreased slightly (7%) from the number reported in 2004. Overall, the number of cases reported (618) was 9% lower than the five-year mean of 679 cases/year (Figure 6). It is suspected that campylobacteriosis is significantly under-diagnosed as a bacterial cause of enteric disease.

Chickenpox

Varicella vaccine has been available in the U.S. since 1995 and vaccination is required in Virginia for school entry for all children born on or after January 1, 1997. Studies suggest that a steady decline in reported varicella (chickenpox) cases has resulted from the increased use of varicella vaccine.[1] However, the 1,834 cases of chickenpox reported in Virginia in 2005 represent a significant (149%) increase from the average of 736 cases/year seen from 2000-2004 (Figure 7). This increase is attributed primarily to better morbidity reporting from healthcare providers and schools. Sixty-seven outbreaks (all but two among school-aged children) with an average size of 12 cases per outbreak were investigated by local health departments in 2005. Although unvaccinated young children constitute a continually smaller proportion of the entire population, there remains a large population of susceptible school-aged children. For example, more outbreak cases were reported among children ages 8-9 years (244, 31%) than for any other age group. In addition, no vaccine is 100% effective—cases of chickenpox have occurred in Virginia in vaccinated children. Still, the available evidence suggests that cases tend to be milder (but potentially atypical in appearance) in individuals who have been vaccinated.

Figure 4. HIV Prevalence: Ten-Year Trend, Virginia, 1996-2005

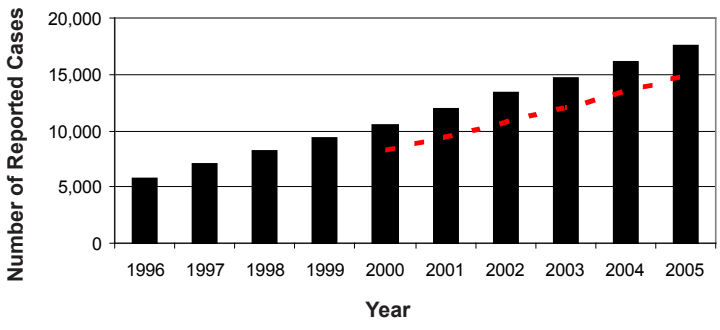


Figure 5. Human Arboviral Infections: Ten-Year Trend, Virginia, 1996-2005

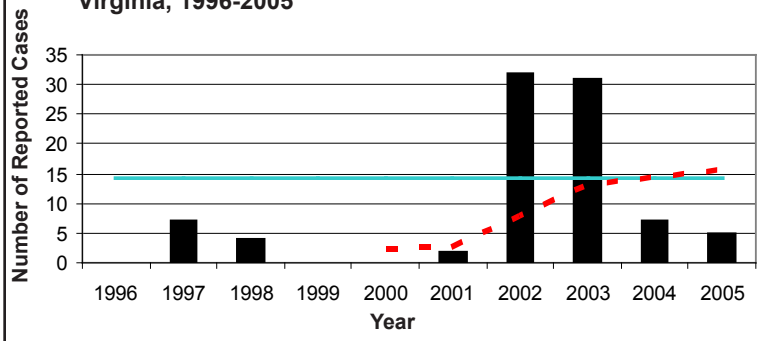


Figure 6. Campylobacteriosis: Ten-Year Trend, Virginia, 1996-2005

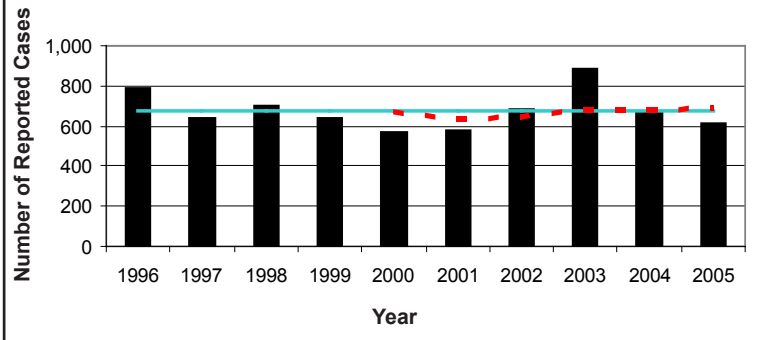
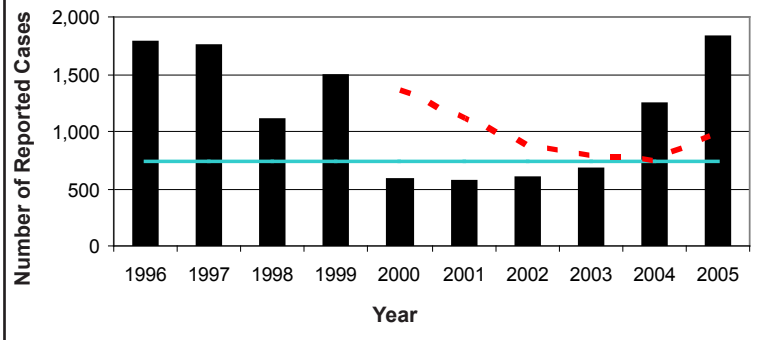


Figure 7. Chickenpox: Ten-Year Trend, Virginia, 1996-2005



E. coli O157:H7 and Other STEC Infections

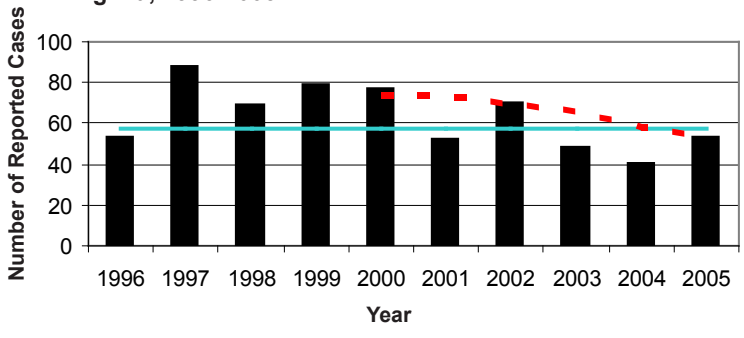
Infection by Shiga toxin-producing *Escherichia coli* (STEC), including *E. coli* O157:H7, does not account for a large proportion of the reported cases of gastroenteritis in Virginia compared to *Salmonella* spp. and *Campylobacter* spp. However, STEC infection can cause significant morbidity and mortality, including complications such as hemolytic uremic syndrome (HUS). In 2005, 53 cases of *E. coli* O157:H7 infection were reported, an increase of approximately 29% from 41 cases in 2004, but still about 8% less than the five-year mean of 58 cases/year (Figure 8). When total STEC infections for 2005 are considered, cases increased by 79% (from 62 cases in 2004 to 111 cases in 2005). Investigating STEC infections has become complicated as a result of increasing use of Shiga toxin testing without performing stool cultures—this does not allow isolating specimens for genetic fingerprinting and linking cases to potential outbreaks. Therefore, clinicians are encouraged to submit stool specimens for culture for patients who test positive for Shiga toxin so that additional testing can be performed, and a better understanding of STEC infections in Virginia can be developed.

Giardiasis

In 2005, the number of reported cases of giardiasis increased for the third con-

secutive year. The 602 cases reported in 2005 are 7% higher than the 563 cases reported in 2004 and 35% higher than the five-year mean of 446 cases (Figure 9). Similar patterns of increased cases of giardiasis have been observed in the past; however, the number of cases in 2005 was the highest ever recorded in Virginia. In addition, while the increase in the number of reported cases has occurred statewide, it is most significant in the southwest and central regions of Virginia. During this period, while the number of cases of giardiasis reported by age and sex remained relatively stable, a dramatic change occurred in the race category. By race, in 2003, the ratio of blacks to whites reported with giardiasis was 1:5; by 2005, this had changed to 3:1. This increase in the number of cases who reported race as black was not observed for other enteric infections (e.g., salmonellosis, shigellosis). The reason for this pattern is not fully understood, and requires additional investigation.

Figure 8. *Escherichia coli* O157:H7: Ten-Year Trend*, Virginia, 1996-2005



*Not a reportable condition prior to 1999

Figure 9. Giardiasis: Ten-Year Trend, Virginia, 1996-2005

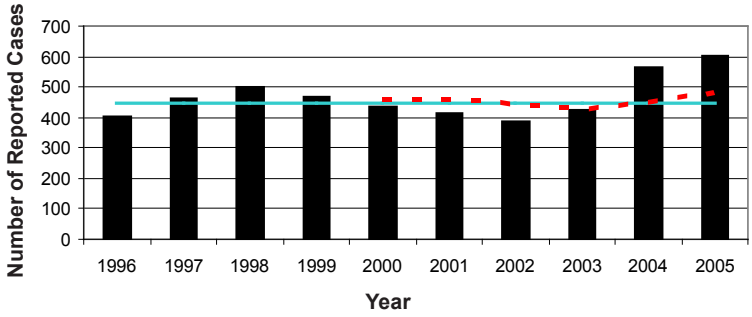


Figure 10. *Haemophilus influenzae* Infection, Invasive: Ten-Year Trend, Virginia, 1996-2005

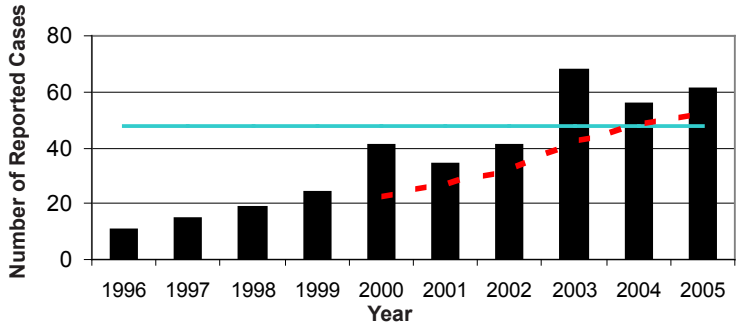
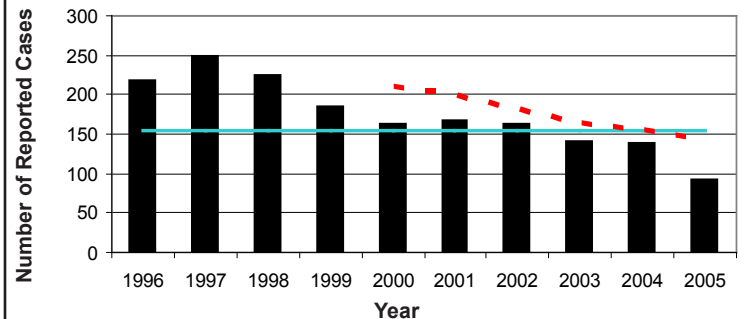


Figure 11. Hepatitis A: Ten-Year Trend, Virginia, 1996-2005



Haemophilus influenzae Infection, Invasive

Prior to the introduction of an effective vaccine, *Haemophilus influenzae* type b (Hib) was the leading cause of bacterial meningitis and other invasive bacterial disease among children less than five years of age. With the availability of a highly effective vaccine, Hib has become a rare cause of invasive disease in children in Virginia. In 2005, the annual number of reported cases of invasive infections due to all types of *H. influenzae* increased to 61 cases (compared with 56 cases reported in 2004). This remains approximately 27% higher than the five-year mean of 48 cases/year (Figure 10), but significantly lower than the number of cases seen in the 1990s. Only 10 (16%) of the 61 cases reported in 2005 were less than five years of age, and none of the ten cases were type b. Of note, 25 reported cases (41%) were not submitted for serotyping. The Virginia Department of Health recommends that clinicians assist in public health efforts related to vaccine-preventable diseases by encouraging laboratories to submit invasive *H. influenzae* specimens to the Division of Consolidated Laboratory Services (DCLS) for typing.

Hepatitis A

Data from 2005 show a continued decline in the annual number of reported cases of hepatitis A in Virginia, with the 93 cases reported in 2005 representing a 34% decrease from the number of cases reported in 2004. This is 40% below the five-year mean of 155 cases/year (Figure 11). Specific causes for the decline in Virginia are not known but may be a result of the cyclical nature of hepatitis A epidemics in the United States, combined with the impact of immunization.[2] In addition, as a result of the problem of hepatitis A IgM false positive test results, case classification changed in 2005 so that only reported cases with symptoms were counted. Therefore, VDH encourages all clinicians to report signs and symptoms consistent with hepatitis A infection when reporting cases. It is expected that the CDC's recommendations for routine

vaccination of children may lead to further reductions in the incidence of this illness in the future.

Hepatitis B, Acute

In 2005, the 146 reported cases of acute hepatitis B were 52% lower than 2004, and were significantly (36%) lower than the five-year mean (Figure 12). This represents a reversal in the trend of increasing reported cases since IgM antibody to hepatitis B core antigen (IgM anti-HBc) became a reportable condition by directors of laboratories in 1999. The cause of the decrease is unknown. Future levels should decrease as the cohort of persons (especially children) vaccinated against hepatitis B increases; however, this may take decades as most cases of acute hepatitis B in Virginia are reported among adults.

Lead, Childhood Elevated Blood Levels

There were 627 newly reported cases of childhood (less than 16 years of age) elevated blood lead levels in 2005 in Virginia. This is a decrease of 11% from the 703 cases reported in 2004, and is 11% lower than the 5-year mean of 708 cases per year. Although the number of cases dropped in 2005, the ten-year trend of childhood elevated blood lead cases continues to remain relatively stable (Figure 13). The mean age of reported cases was 2.7 years. The mean blood lead level was 14.3 µg/dL, with 71% of all cases in the 10 to 14 µg/dL range.

The Central Region, particularly the City of Richmond, consistently reports the highest number of new cases each year. This is due in part to more frequent screening for high-risk children by physicians in the region, as well as to the existence of older housing in the region where lead paint is more prevalent. However, while lead paint is still the most common source of lead exposure in children, other sources of lead have been recognized. These newer sources include some ethnic candies, traditional Hispanic, Indian, and Middle Eastern folk remedies, and ceramics purchased or brought from foreign countries. The continued education of healthcare professionals and parents is important for improving the identification of children at risk of lead exposure.

Figure 12. Hepatitis B, Acute: Ten-Year Trend, Virginia, 1996-2005

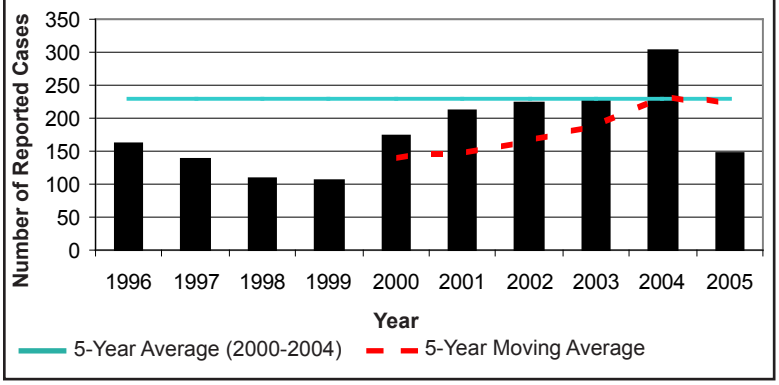


Figure 13. Elevated Childhood Blood Lead Level: Ten Year Trend, Virginia, 1996-2005

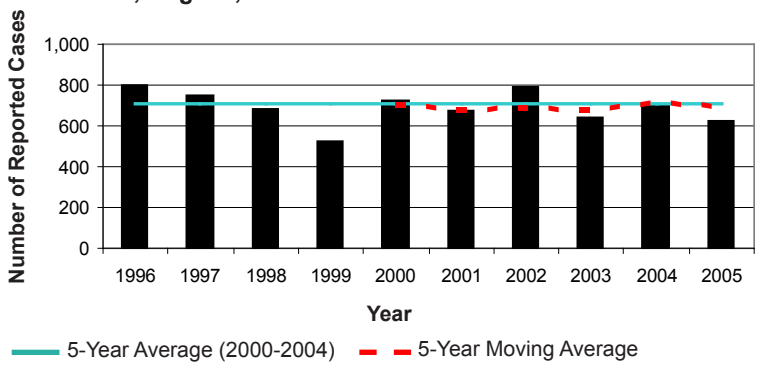


Figure 14. Legionellosis: Ten-Year Trend, Virginia, 1996-2005

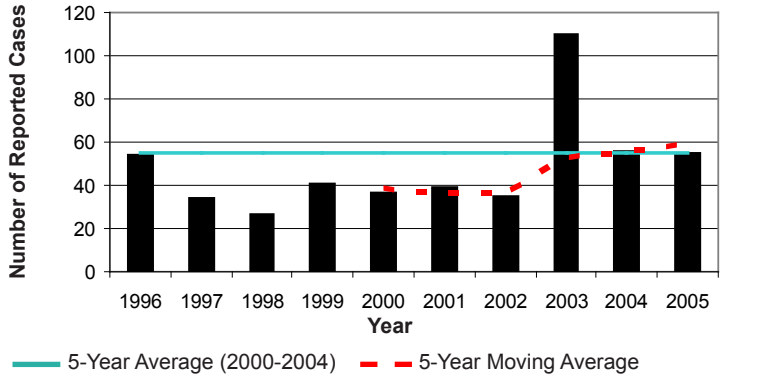
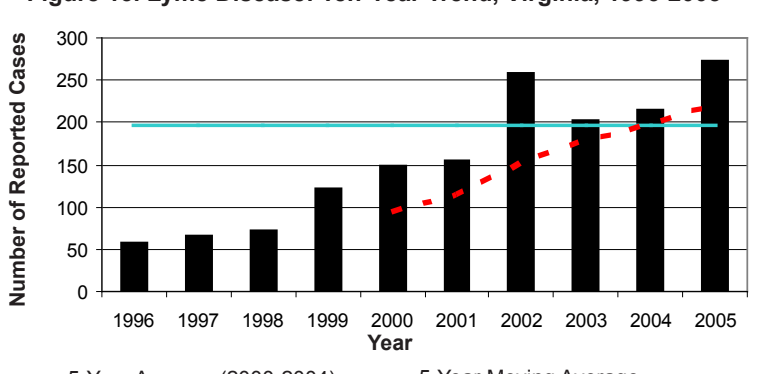


Figure 15. Lyme Disease: Ten-Year Trend, Virginia, 1996-2005



Legionellosis

In 2005, 55 cases of disease caused by *Legionella pneumophila* were reported. This was essentially unchanged from the 56 cases reported in 2004, and equivalent to the five-year mean (Figure 14). As seen in previous years, cases of Legionnaire's disease are most commonly reported in summer months (May-September) when environmental conditions are favorable for this ubiquitous organism. Persons 40 years of age and older represent the highest risk population for acquiring this infection.

Lyme Disease

Since becoming a notifiable disease, Lyme disease is the most frequently reported tickborne illness in Virginia, and levels of reported cases continue to increase. The 274 cases reported in 2005 represent a 27% increase above the 216 cases reported in 2004 and were 40% higher than the five-year mean

(Figure 15). Cases were reported from all regions of the state; however, the largest proportion (58%) was reported from the northern healthcare planning region of Virginia. These increases are probably due to increased awareness of the disease by the public and healthcare professionals, as well as due to increased case follow-up by local health departments. However, it is also possible that increasing urbanization of some parts of Virginia is bringing more individuals into contact with the tick vector, leading to increased numbers of cases.

Malaria

The 44 cases of malaria reported in 2005 represent a 25% decrease from 2004 and were 17% below the five-year mean. Newly identified cases almost always occur among U.S. residents with recent travel to malaria endemic countries, or among foreign residents immigrating to or visiting the U.S. No domestically acquired case of malaria was reported to VDH in 2005, although transmission of malaria in Virginia remains possible: three Virginia residents were confirmed to have acquired malaria domestically during 2002.

Measles

No cases of measles have been reported in Virginia since 2001, demonstrating the continued effectiveness of the vaccine and the benefit of efforts that have been made to protect children in Virginia from vaccine-preventable diseases.

Figure 16. Meningococcal Infections: Ten-Year Trend, Virginia, 1996-2005

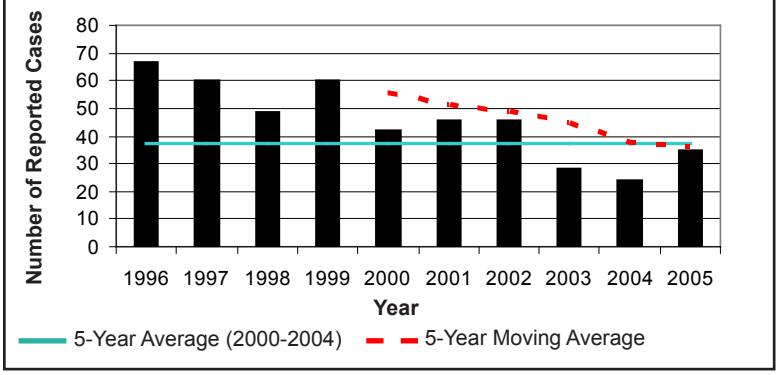


Figure 17. Mumps: Ten-Year Trend, Virginia, 1996-2005

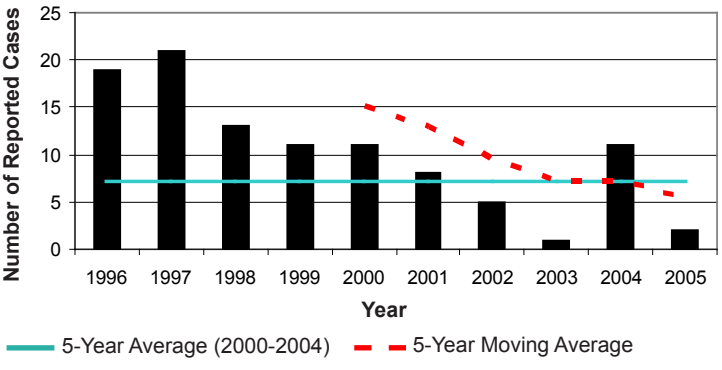


Figure 18. Pertussis: Ten-Year Trend, Virginia, 1996-2005

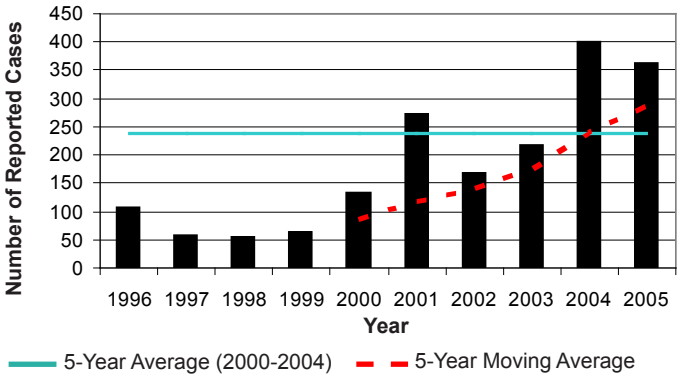
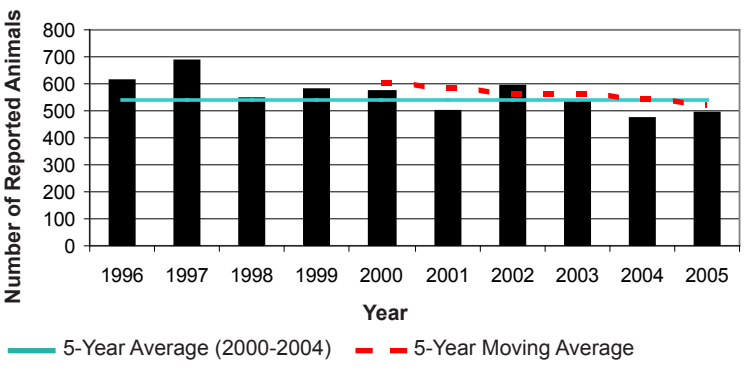


Figure 19. Rabies in Animals: Ten-Year Trend, Virginia, 1996-2005



Meningococcal Infection

Reported cases of meningococcal infection have generally been declining; however, the number of reported cases increased from 24 cases in 2004 to 35 cases in 2005 (a 46% increase) (Figure 16). Although this remains lower (by 6%) than the five-year mean of 37 cases/year, it indicates the continued potential for this disease. Two deaths from meningococcal infection were reported in 2005.

Persons living in crowded environments, such as campus dormitories, are at least three times more likely to contract the meningococcal bacteria.[3] The overall decline in cases in Virginia may be partly attributed to the 2001 Virginia law requiring that students enrolling in any four-year Virginia public college or university for the first time must be immunized against meningococcal disease. The recommendation for routine vaccination of young adolescents (11-12 years old) with tetravalent meningococcal polysaccharide-protein conjugate vaccine [MCV4 (Menactra®, Sanofi Pasteur)] may help to further reduce the incidence of this serious disease in the future; however, due to the current limited supply of vaccine, this recommendation has been temporarily suspended.

Mumps

Two cases of mumps were reported in 2005, representing a 72% decrease from the average of seven cases/year seen from 2000-2004 (Figure 17). The ease with which diseases such as mumps can be imported, and the recent (as of May, 2006) mumps outbreak in the Midwestern

U.S. states, highlights the need for maintaining high immunization rates.

Pertussis

The number of pertussis cases reported has increased in recent years in Virginia despite high levels of vaccination coverage in children. In 2005, 363 cases (including seven outbreaks) were reported, representing a 9% decrease from the 400 cases reported in 2004 (Figure 18). During 2005, most (242/363, or 67%) of the reported cases were less than 19 years of age. In addition, 11% (41 cases) of the reported cases were children less than six months of age, who are too young to be adequately immunized.

Generally, increases in reported pertussis cases typically occur in waves, with peak numbers appearing every 3-4 years. The decrease in cases in 2005 may be the start of a downward trend. However, recent cycles have not dipped to historic lows, indicating an overall increasing trend in the number of cases. Although not known for certain, this trend may be a result of: increased recognition of the disease in adolescents and adults by clinicians; increased susceptibility among adolescents and adults due to waning immunity following vaccination (until recently, no booster vaccine has been available for persons over seven years of age); and increased availability of more sensitive laboratory testing. The recent Food and Drug Administration approval of pertussis booster vaccines for older age groups (e.g., GlaxoSmithKline's Boostrix®, indicated for persons 10-18 years of age; Sanofi Pasteur's Adacel™, indicated for persons 11-64 years of age) may help to further reduce the incidence of this disease in the future.

Figure 20. Species of Animals Positive for Rabies, Virginia, 2005

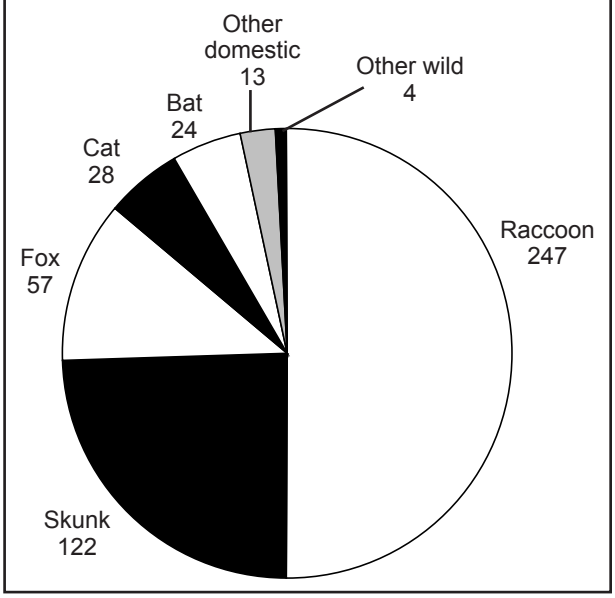


Figure 21. Salmonellosis: Ten-Year Trend, Virginia, 1996-2005

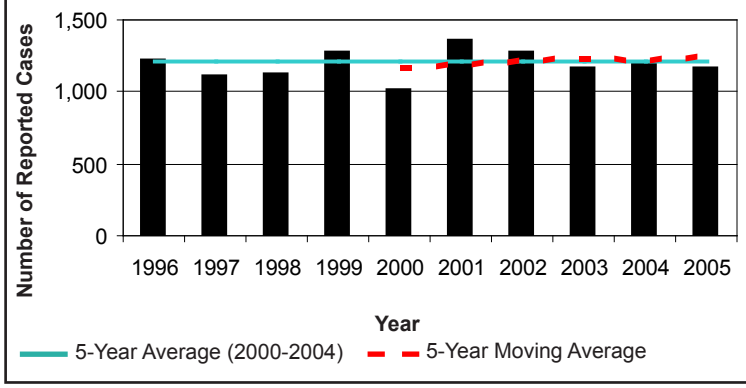
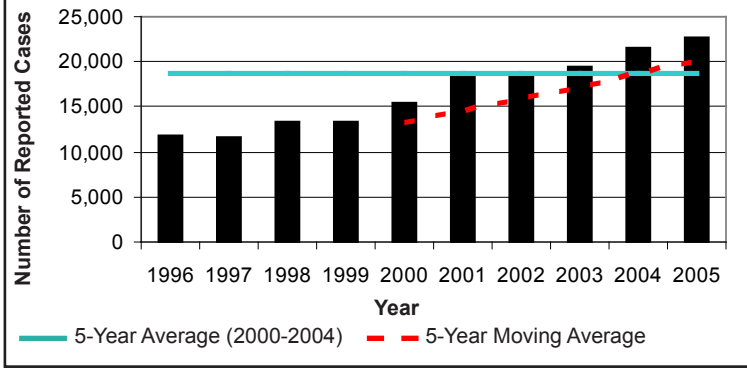


Figure 22. *Chlamydia trachomatis* Infections: Ten-Year Trend, Virginia, 1996-2005



Rabies

The number (495) of rabid animals reported in 2005 is an increase of four percent over the number reported in 2004, but the number of reports remains relatively low compared to historical trends (8% below the five-year mean of 537 cases/year) (Figure 19). Rabid raccoons (247 cases) accounted for 50% of all rabid animals (Figure 20). Other frequently reported rabid animals included skunks (122 cases), foxes (57 cases), cats (28 cases), and bats (24 cases). The number of rabid animals tends to cycle, probably due to changes in wildlife populations (especially raccoons) and the proportion of animals that is susceptible in those populations.

Overall, 14,859 animal bites of humans were reported to health departments in 2005; healthcare professionals reported initiating 789 courses of post-exposure prophylaxis. No human cases of rabies were reported in 2005. The last known human death from rabies in Virginia occurred in 2004 from a raccoon rabies virus variant; however, how the person became infected remains unknown.

Salmonellosis

Salmonella spp. infections are the most frequently reported enteric disease in Virginia. Reported cases in 2005 remained stable—the 1,172 reported cases of salmonellosis in 2005 were 2% less than the 1,196 cases reported in 2004 and 3% less than the five-year mean of 1,207 cases/year (Figure 21). Most cases were apparently sporadic, with few linked to wider outbreaks.

Sexually Transmitted Infections

In 2005, *Chlamydia trachomatis* infection (chlamydia) was the most frequently reported sexually transmitted infection (STI) in Virginia. The 22,668 cases reported represent the eighth consecutive year that the number of cases has increased, although the increase in 2005 was relatively small (5%) (Figure 22). This trend is likely a result of the increased awareness of the importance of this organism combined with the

increased use of sensitive laboratory amplification techniques that have enhanced case finding.

Conversely, *Neisseria gonorrhea* infection (gonorrhea) has decreased, with 2005 being the fourth year of decline. The 8,346 cases of gonorrhea reported in 2005 were 15% less than the five-year mean (Figure 23). This decline, which is also occurring nationally, may be partially attributable to increased efforts in STI education, detection, and treatment by local health departments.

Routine dual therapy of patients with gonorrhea, without testing for chlamydia, may be cost effective in some populations due to the probability of co-infection. Although specific testing to determine the etiology of cervicitis/urethritis is encouraged, clinicians may consider empiric treatment of symptoms without testing for patients who are at high risk for infection and who are unlikely to return for a follow-up evaluation. Such patients should be treated for both gonorrhea and chlamydia (this also prevents syphilis, if infection is present). Partners of patients who are treated empirically should also be evaluated and treated.

Early syphilis, which includes primary, secondary, and early latent stages of syphilis, increased again in 2005 (by 30% from 2004). The 291 cases reported in 2005 is 39% higher than the five-year mean (Figure 24). The increase in the number of reported cases is partly related to improved case finding by the VDH Virginia Epidemiology Response Team (VERT) in the eastern region of the Commonwealth. Contact tracing and social networking activities continue to identify pockets of high-risk activity and infection.

Figure 23. Gonorrhea: Ten-Year Trend, Virginia, 1996-2005

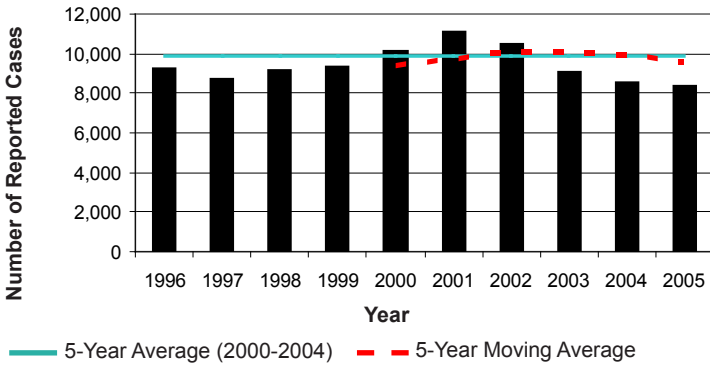


Figure 24. Early Syphilis: Ten-Year Trend, Virginia, 1996-2005

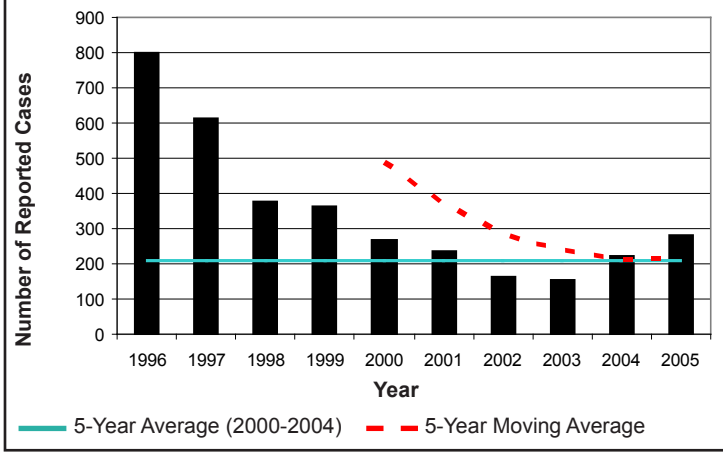


Figure 25. Shigellosis: Ten-Year Trend, Virginia, 1996-2005

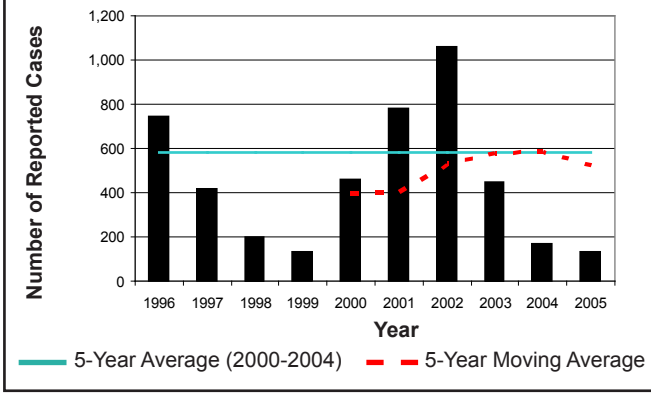
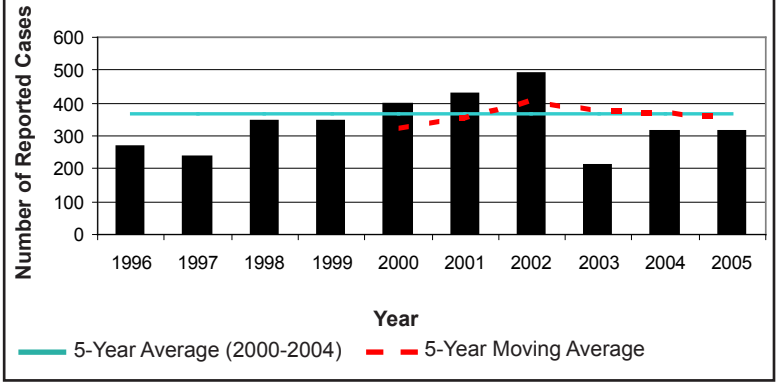


Figure 26. Adult Toxic Exposures: Ten Year Trend, Virginia, 1996-2005



Shigellosis

The 134 cases of shigellosis reported in 2005 represent a moderate (20%) decrease from the 167 cases reported in 2004, but a considerable decrease compared to the five-year mean of 584 cases/year (Figure 25). The cause of this decrease is not well understood, but the general trend may be cyclic. No shigellosis outbreaks were detected in 2005. Although the spread of this disease can occur through contamination of food and water, the predominant mode of transmission is by direct contact with an infected person. Thorough hand washing remains the most effective method of prevention.

Tickborne Rickettsial Diseases

Rocky Mountain spotted fever (RMSF) has been a relatively uncommon tickborne rickettsial disease in Virginia (five-year mean: 34 cases/year). However, in 2005, 121 cases of RMSF were reported to VDH, a 169% increase from 2004.

Ehrlichiosis is infrequently reported in Virginia (five-year mean: 6 cases/year). However, reported cases of ehrlichiosis have also been increasing, with the 13 cases reported in 2005 representing the largest number ever reported in one year, and a level 124% greater than the five-year mean.

The cause of the increased reports of tickborne rickettsial diseases is unknown, but may represent increased awareness and testing for these conditions, improved reporting among healthcare professionals, and increased efforts by local health de-

partments to more fully investigate reported cases and describe these conditions in Virginia.

Toxic Substance Exposure-Related Illnesses (Adult)

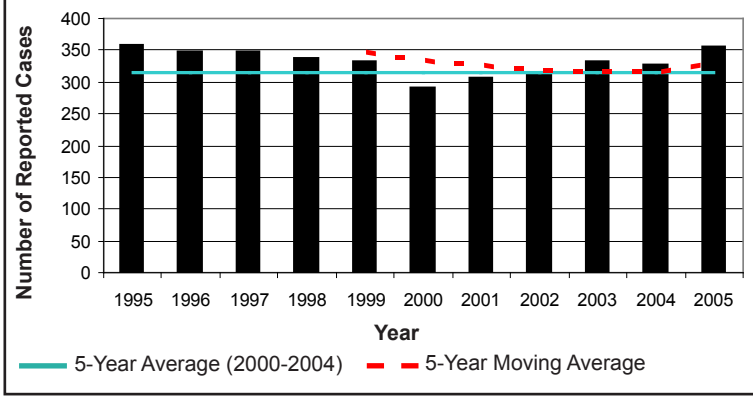
In 2005, there were 313 reported cases of adult toxic substance exposures. This is essentially unchanged from the 317 cases reported in 2004, but remains significantly (15%) below the 5-year mean of 369 cases per year (Figure 26).

Exposure to lead was the leading cause of adult toxic substance exposure, resulting in 140 cases during 2005. Pneumoconiosis among coal workers has increased dramatically in recent years (4 cases in 2003, compared with 115 in 2004 and 109 in 2005). This is due to increased and more accurate reporting from worker's compensation claims and death certificates. Asbestosis decreased by 47% (from 76 in 2004 to 40 in 2005) as a result of increased awareness of the harmful effects of asbestos combined with very restrictive legislation governing its removal or abatement. Other toxic exposures reported in 2005 included: mercury exposure (11 cases), non-specific pneumoconiosis (5 cases), mesothelioma (3 cases), methemoglobinemia (2 cases), silicosis (2 cases), and chronic pulmonary disease from dust (1 case). The mean age of adults affected by toxic substances reported during 2005 was 56 years. The most frequent industry reported was coal mining (32%), followed by automotive battery manufacturing (24%). Improving public and healthcare professional recognition and reporting of exposures due to heavy metals, pesticides, and industrial type dusts and gases remains important for reducing illness from these toxins.

Tuberculosis

The 355 reported cases of tuberculosis (TB) in 2005 represent an 8% increase compared to the 329 cases reported in 2004. This was 13% above the five-year mean (Figure 27). Three cases of multi-drug resistant TB (MDR-TB) were reported in 2005 compared to one in 2004. In 2005, 20 TB cases (6%) were co-infected with HIV compared to 15 cases (5%) reported in 2004. In addition, in 2005, 37% of cases were born outside the U.S. The remaining 63% likely represent cases that were infected early in life and have reactivated. As a result, tuberculosis should be considered in any older adult with recurrent episodes or a persistent case of community acquired pneumonia.

Figure 27. Tuberculosis: Ten Year Trend, Virginia, 1996-2005

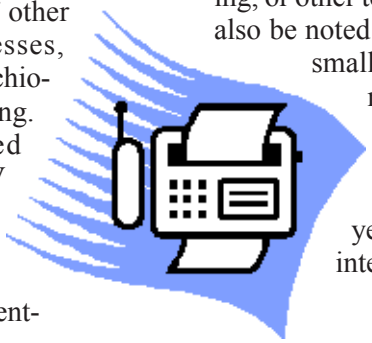


Summary

This report summarizes the disease surveillance statistics for selected notifiable conditions in Virginia during the 2005 calendar year. Conditions in 2005 with a significant increase in the number of cases, or that continued to be significantly elevated, included chickenpox, *C. trachomatis* infection, giardiasis, lead exposure in adults, Lyme disease, pneumoconiosis, Shiga toxin-producing *E. coli*, and syphilis. While fewer foodborne outbreaks of salmonellosis were reported in 2005, the overall number of cases did not change significantly. Meningococcal infections also increased in 2005, although it is hoped that new recommendations for vaccination will lead to sustained decreases in the future. Recent changes in the geographic distribution of LaCrosse encephalitis suggest that the ecology of the virus may be shifting. Reports of other arthropod-borne illnesses, such as RMSF and ehrlichiosis, have been increasing. While newly-reported cases of AIDS and HIV decreased, the increase in the prevalence of HIV demonstrates that continued work on preventing new infection remains necessary, and that issues related to HIV/AIDS care will continue to be prominent.

On the positive side, significant progress continues to be made in controlling many vaccine preventable diseases, particularly hepatitis A and measles. Reported cases of pertussis also declined in 2005. And while reported cases of invasive *H. influenzae* infection remained higher than the five-year mean in 2005, the number of Hib infections remained very low, demonstrating the continued importance of vaccination. In addition, the number of reported cases of asbestosis, campylobacteriosis, gonorrhea, elevated blood lead levels in children, and shigellosis all declined in 2005. Of note, human West Nile virus infections were very low compared to previous years. Finally, the number of new cases of TB remained relatively unchanged in 2005.

Limitations in the data include a lag in reporting associated with most reportable communicable diseases. This may range anywhere from hours (for highly acute diseases) to several years (as with some HIV/AIDS cases). As a result, continuing investigations of some reports of disease may lead to (minor) changes in the final report from the number of cases presented. In addition, some reportable diseases are undetected or underreported due to several factors, which may include: low incentive for testing for some conditions, not seeking healthcare (e.g., for asymptomatic infections or mild illness), lack of awareness of appropriate diagnostic testing by healthcare professionals, and inability to isolate an appropriate organism due to specimen quality, timing, or other technical factors. It should also be noted that conditions that have small numbers (e.g., mumps) may fluctuate dramatically from year to year, even when there is no meaningful difference. Year to year comparisons should be interpreted with caution.[4]



Cases of Selected Notifiable Diseases Reported in Virginia*

Disease	Total Cases Reported, April 2006						Total Cases Reported Statewide, January - April		
		Regions							
	State	NW	N	SW	C	E	This Year	Last Year	5 Yr Avg
AIDS	42	2	23	2	9	6	150	210	209
Campylobacteriosis	33	1	16	5	5	6	111	114	111
Chickenpox	225	34	65	42	26	58	613	94	205
***E. coli,* Shiga toxin-producing**	21	3	9	1	2	6	30	12	6
Giardiasis	45	8	20	6	8	3	136	181	107
Gonorrhea	435	18	25	48	166	178	2,143	2,781	2,980
Group A Strep, Invasive	26	3	5	6	6	6	50	28	32
Hepatitis, Viral									
A	6	1	5	0	0	0	21	27	30
B, acute	6	0	2	0	1	3	12	67	54
C, acute	0	0	0	0	0	0	1	5	2
HIV Infection	76	7	19	6	26	18	292	237	263
Lead in Children†	52	5	3	10	21	13	157	124	156
Legionellosis	7	1	3	0	2	1	14	5	4
Lyme Disease	6	1	5	0	0	0	7	28	6
Measles	0	0	0	0	0	0	0	0	0
Meningococcal Infection	2	1	1	0	0	0	10	11	8
Pertussis	11	0	9	0	1	1	53	63	41
Rabies in Animals	61	22	11	7	9	12	196	158	160
Rocky Mountain Spotted Fever	4	0	1	1	0	2	6	4	<1
Rubella	0	0	0	0	0	0	0	0	0
Salmonellosis	59	12	18	9	7	13	182	212	210
Shigellosis	7	1	4	0	2	0	17	27	78
Syphilis, Early§	23	2	6	1	4	10	107	64	60
Tuberculosis	25	2	0	13	6	4	74	75	65

Localities Reporting Animal Rabies This Month: Accomack 1 cat, 2 raccoons; Albemarle 1 dog; Arlington 1 bat, 1 raccoon; Augusta 1 raccoon, 1 skunk; Bath 1 raccoon; Bland 1 cat; Buckingham 1 skunk; Chesterfield 1 raccoon; Clarke 5 lambs, 1 raccoon; Culpeper 1 raccoon; Cumberland 1 raccoon; Fairfax 2 raccoons, 1 skunk; Fauquier 2 cats, 1 fox, 1 raccoon; Floyd 2 raccoons, 1 skunk; Fredericksburg 1 raccoon; Giles 1 cat; Hanover 2 raccoons; Henry 1 raccoon; Isle of Wight 1 raccoon; James City 1 skunk; Loudoun 1 fox, 2 raccoons; Mecklenburg 1 raccoon; Middlesex 1 fox, 1 raccoon; Northumberland 1 fox; Patrick 1 raccoon; Powhatan 1 cat, 1 raccoon; Prince William 3 raccoons; Rockbridge 1 fox; Rockingham 1 cow; Shenandoah 1 raccoon, 1 skunk; Spotsylvania 1 skunk; Stafford 1 skunk; Suffolk 1 raccoon; Sussex 1 raccoon; Virginia Beach 3 raccoons.

Toxic Substance-related Illnesses: Adult Lead Exposure 14; Asbestosis 1; Pneumoconiosis 5.

*Data for 2006 are provisional. †Elevated blood lead levels ≥10µg/dL. §Includes primary, secondary, and early latent.

Finally, only some key reportable conditions are included in this report. Other conditions that have not been included are: amebiasis, anthrax, brucellosis, chancroid, cholera, diphtheria, hantavirus pulmonary syndrome, invasive group A streptococcal infection, hemorrhagic fevers, hepatitis C, leprosy (Hansen's disease), lymphogranuloma venereum, plague, polio, psittacosis/ornithosis, Sudden Acute Respiratory Syndrome (SARS), smallpox, tetanus, trichinosis, tularemia, yellow fever, and cancers. For additional information about disease surveillance in Virginia, and updated information on reportable conditions, visit the VDH web site at: www.vdh.virginia.gov/epi/newhome.htm.

The primary purpose of the communicable disease surveillance system is to detect possible outbreaks, to trigger investigations and control measures, and to guide program planning and evaluation. However, these processes also help to monitor the health of communities. Healthcare professionals play a critical role in this system—it all begins with disease reporting. For more information on ways to improve the reporting process for your practice or facility, please contact your local health department.

References:

1. MMWR. 2004. 52(37): 884-5.
2. Samandari T, Bell BP, Armstrong GL. 2005. *Vaccine*. 22(31-32): 4342-50.
3. MMWR. 2000. 49(RR07): 11-20.
4. Reportable Communicable Diseases in Toronto. Available at: www.toronto.ca/health/cdc/communicable_disease_surveillance/statistics_and_reports/monthly_reports/pdf/cdsu_technical_notes.pdf. Accessed 05/10/2006.

Submitted by: Leslie Branch,
Division of Surveillance and Investigation