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EPIDEMIOLOGY BULLETIN

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Summary of Reportable Diseases, Virginia, 2001

Introduction

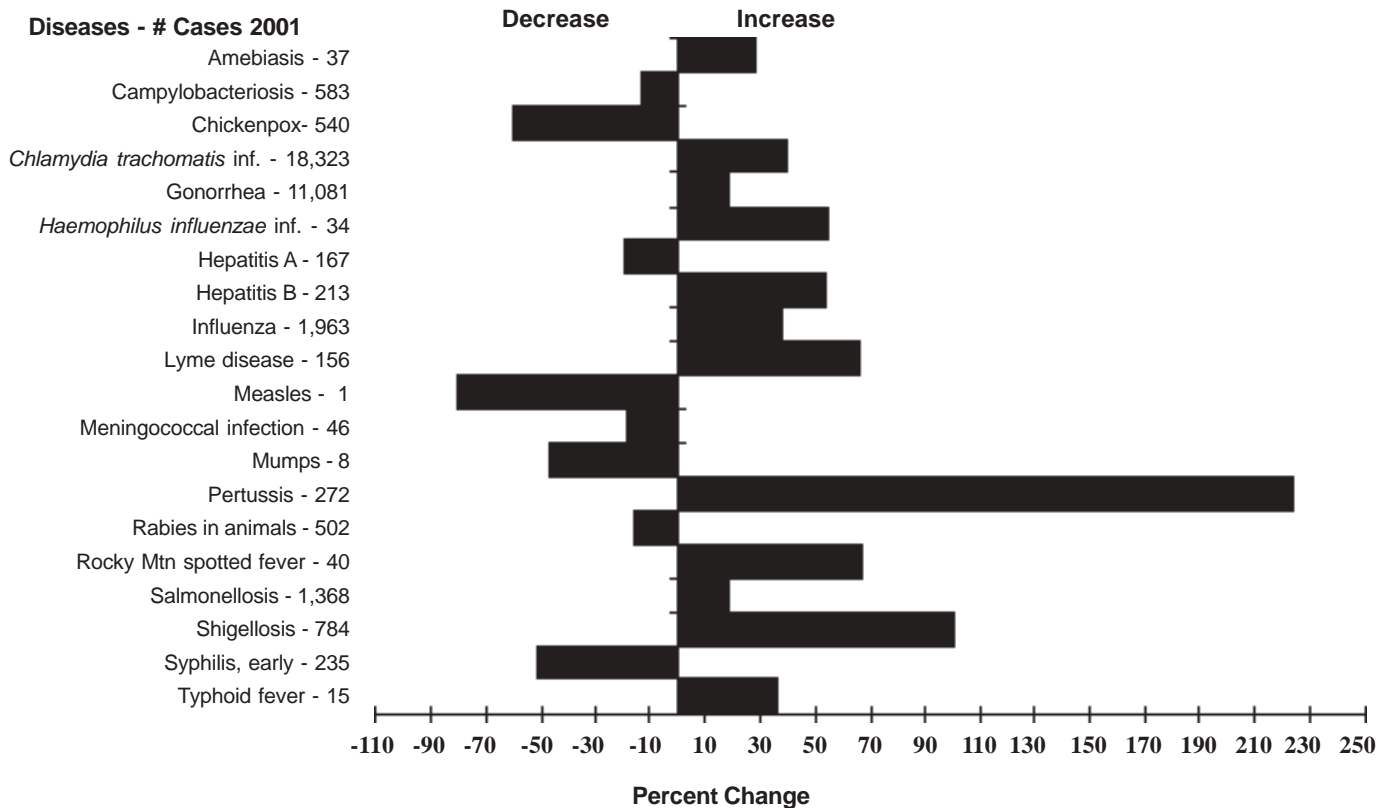
This issue of the *Virginia Epidemiology Bulletin* (VEB) summarizes the reports of notifiable disease in Virginia for 2001. A notifiable disease is one that must be reported to the health department according to the provisions of the *Regulations for Disease Reporting and Control*. These are conditions for which regular, frequent, and timely information regarding individual cases is considered necessary for the prevention and control of the disease.

The Office of Epidemiology, Virginia Department of Health, is responsible for the ongoing surveillance of notifiable diseases and conditions. 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. Disease reports are acted on when they are received by the local health department. Monthly and annual statistics are compiled and are available on the VDH web site (<http://www.vdh.state.va.us/epi/survdata.htm>).

Data Sources

Data in this summary were derived primarily from reports sent to the health department by physicians, directors of medical care facilities and directors of laboratories who report notifiable conditions. The current list of reportable conditions can be found on the VDH web site at <http://www.vdh.state.va.us/epi/list.htm>.

Figure 1. Percent Change in Disease Incidence in 2001 When Compared to Five-Year Mean



Trend Data

Figure 1 shows the diseases that demonstrated the greatest change (increase or decrease) in the number of cases reported in 2001 compared to the average 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 1992-2001. Table 2 shows the number of reported cases for selected diseases by health planning region. Regions are illustrated on page 7. Rates per 100,000 population are also presented.

2001 HIGHLIGHTS FOR SELECTED DISEASES

AIDS/HIV

The number of AIDS cases reported in 2001 reversed a five-year downward trend (Figure 2). The 971 cases reported in 2001 were 7% more than the 908 cases reported in 2000 but less than the five-year mean of 1031. The annual number of newly reported cases of HIV infection also increased. The 981 cases reported in 2001 were 22% more than the 804 cases reported in 2000. The number of HIV infections reported in 2001 was also higher than the five-year mean of 905 cases; however, in general, reported cases have been declining.

Anthrax

During the fall of 2001, two Virginia residents were identified with inhalation anthrax. These cases were caused by intentional release of *Bacillus anthracis* spores through the US postal system. The Virginia cases were exposed at their respective workplaces. Both patients survived.

Arboviral Infection

Two laboratory-confirmed human cases of arboviral infection were reported in Virginia in 2001. Both were cases of

LaCrosse encephalitis and occurred in adolescent males with onset of illness in September. Exposure for one boy likely occurred in West Virginia. The last reported cases of human arboviral infection in Virginia had occurred in 1998 and included 1 case of eastern equine encephalitis (EEE) and 3 cases of

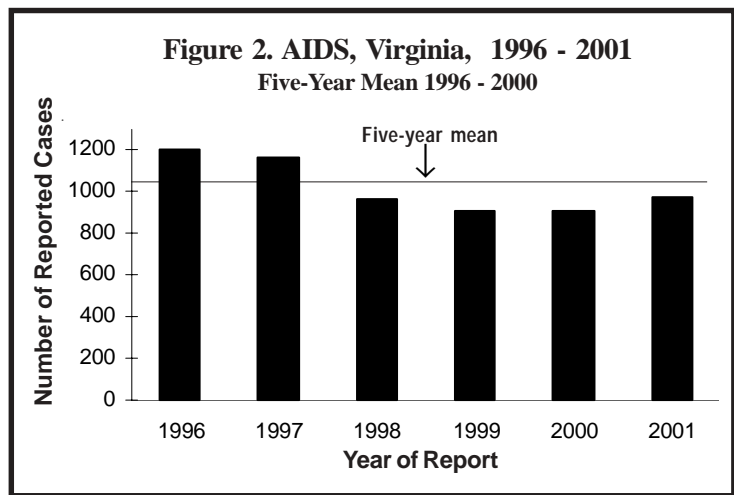


Table 1. Number of Reported Cases of Selected Diseases, Virginia, 1992 - 2001

Disease	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
AIDS†	743	1,629	1,191	1,458	1,209	1,170	961	909	908	971
Amebiasis	36	34	39	16	28	30	31	34	24	37
Campylobacteriosis	656	706	824	648	790	644	700	637	574	583
Chickenpox	3,911	2,917	2,844	2,667	1,778	1,760	1,115	1,490	592	540
<i>Chlamydia trachomatis</i> infection	11,305	11,389	12,976	12,287	11,755	11,604	13,370	13,427	15,366	18,323
<i>Escherichia coli</i> O157:H7‡	12	18	46	37	53	88	69	79	77	52
Giardiasis	366	373	337	318	405	465	503	471	437	417
Gonorrhea	15,773	11,620	13,414	10,342	9,292	8,731	9,215	9,315	10,166	11,081
<i>Haemophilus influenzae</i> infection	37	28	22	28	11	15	19	24	41	34
Hepatitis A	164	156	193	238	218	250	226	185	164	167
Hepatitis B	193	157	142	118	163	137	109	106	174	213
Hepatitis C/Non-A Non-B	48	54	26	21	17	27	13	11	3	3
HIV infection†	1,370	1,496	1,108	1,254	980	994	825	922	804	981
Influenza	148	1,363	957	1,484	957	517	1,160	2,558	1,909	1963
Kawasaki syndrome	27	31	27	32	19	27	36	33	29	28
Legionellosis	29	11	17	28	54	34	27	41	37	39
Listeriosis	10	23	17	17	20	12	9	17	9	15
Lyme disease	123	95	131	55	57	67	73	122	149	156
Malaria	47	41	37	55	60	73	61	76	55	55
Measles	16	4	3	0	3	1	2	18	2	1
Meningococcal infection	61	52	69	64	67	60	49	60	42	46
Mumps	58	40	48	28	19	21	13	11	11	8
Pertussis	18	75	37	31	108	59	56	65	134	272
Rabies in animals	362	387	428	459	612	690	549	581	574	502
Rocky Mountain spotted fever	26	14	22	34	54	23	14	20	7	40
Salmonellosis	957	1,055	1,135	1,358	1,229	1,120	1,135	1,286	1,020	1,368
Shigellosis	253	776	656	412	746	416	200	136	460	784
Syphilis, early	1,347	1,268	1,409	1,144	798	615	379	364	266	235
Toxic substance-related illness	68	111	103	214	268	237	349	345	328	417
Tuberculosis	456	458	372	359	349	349	339	334	292	306
Typhoid fever	5	7	9	10	11	5	7	11	22	15

†Some numbers have changed from those previously reported due to a reassessment of the data.

‡Not reportable prior to 1999.

Figure 3. Localities Reporting WNV Positive Birds, Virginia, 2001
(Total Birds = 215)



LaCrosse encephalitis.

EEE was confirmed in 6 horses in 2001. West Nile virus (WNV) was confirmed in 215 wild birds: 211 crows (98%) and 4 blue jays (2%). The majority (80%) of the positive birds were reported from the northernmost part of Virginia (Figure 3). In addition, 6 horses, 1 mosquito pool, and 1 sentinel chicken tested positive for WNV. The VDH web page pertaining to WNV can be found at <http://www.vdh.state.va.us/epi/wnv.htm>.

Campylobacteriosis

Reported cases of campylobacteriosis increased by 2% in 2001 when compared to the 574 cases reported in 2000. The annual number of cases, however, has shown a general decline over the past few years. The 583 cases reported in 2001 were 13% less than the five-year mean.

Chickenpox

The 540 cases of chickenpox reported in 2001 represented the lowest annual number of cases recorded since 1980. Figure 4 shows the ten-year trend for chickenpox.

Escherichia coli O157:H7

Escherichia coli O157:H7 infection became a notifiable condition in Virginia in 1999; however, voluntary reporting of this disease has occurred since 1992. Fifty-two cases were reported in 2001 compared to 77 in 2000. Although there was a decrease in the number of

cases in 2001, one *E. coli* O157:H7 outbreak was reported compared to none in 2000. The outbreak occurred in the northwest region of the state and may have been due to undercooked hamburgers. One of the most serious complications of *E. coli* O157:H7 infection is hemolytic uremic syndrome (HUS). Since 1992, the health department has maintained a database of reported cases of HUS; one HUS case was reported in 2001.

Haemophilus influenzae Infection, Invasive

The annual number of reported cases of invasive infections due to all types of *Haemophilus influenzae* decreased in 2001 when compared to 2000. Thirty-four cases were reported in 2001 compared to 41 cases in 2000. The decrease in the number of cases reported in 2001 reversed four consecutive years of increase in the annual number of reported cases. Prior to the introduction of effective vaccines, *H. influenzae* type b was

the leading cause of bacterial meningitis and other invasive bacterial disease among children <5 years of age. Two cases in the <5 years age group were identified as type b in 2001.

Hepatitis A

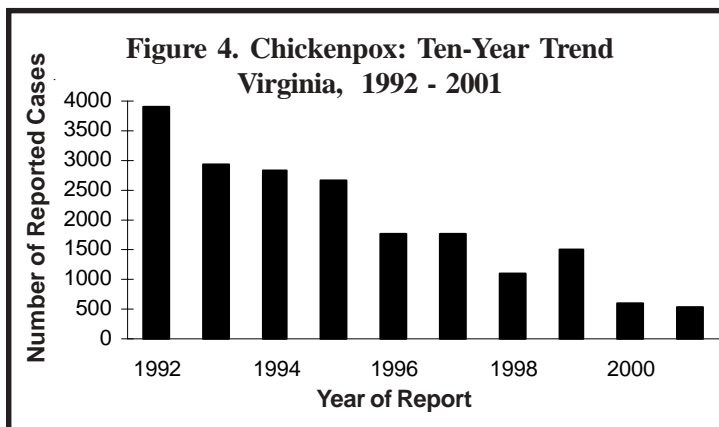
The annual number of reported cases of hepatitis A increased in 2001 (167 cases), but was comparable to the 164 cases reported in 2000. In general, reported cases of hepatitis A have been declining in recent years (Figure 5.)

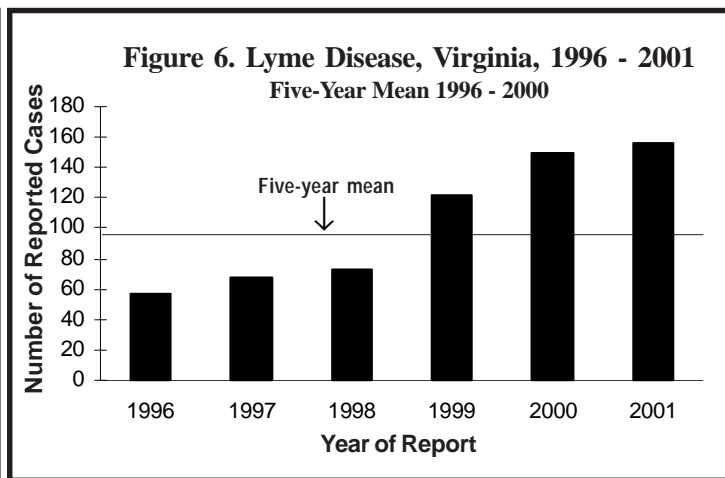
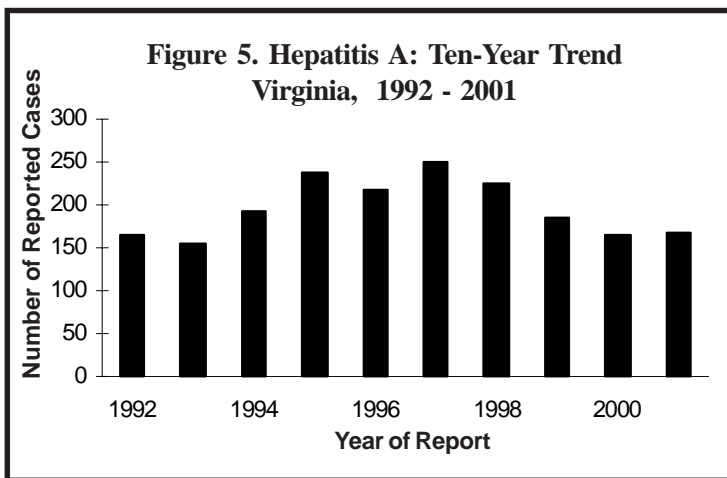
Hepatitis B

Reported cases of hepatitis B increased for the second consecutive year. The 213 cases represented a 22% increase over those reported in 2000 and were 54% higher than the five-year mean. This was the highest annual number of cases since IgM antibody to hepatitis B core antigen (IgM anti-HBc) became a reportable condition by directors of laboratories in 1999.

Lyme Disease

Since becoming a notifiable disease, Lyme disease is the most frequently reported tickborne illness in Virginia. The 156 cases reported in 2001 represented a 5% increase above the 149 cases reported in 2000 and were 66% higher than the five-year mean (Figure 6). Persons with Lyme disease were far more likely to be reported from





the northern region of the state where approximately 70% resided. Cases were fairly evenly distributed by gender and ranged in age from 1 to 81 years. The majority (87%) of cases occurred between April and September. No deaths due to Lyme disease were reported.

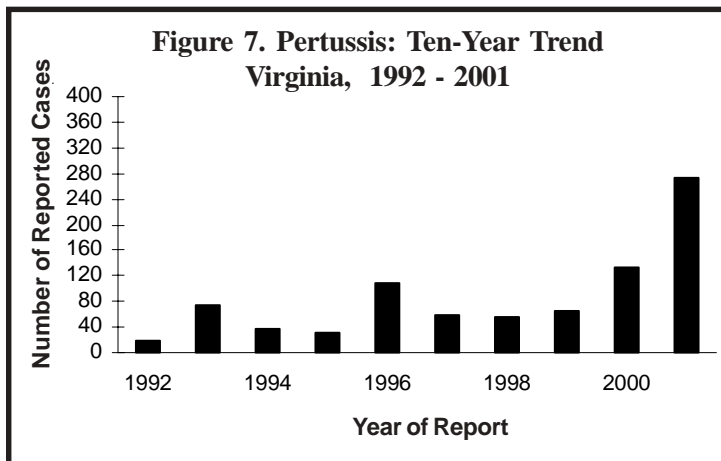
Measles

The annual number of reported measles cases decreased to one in Virginia in 2001 compared to the two cases in 2000. The one case reported in 2001 was well below the five-year mean of five cases.

Meningococcal Infection

The 46 cases of meningococcal infection reported in 2001 were 10% more than the 42 cases reported in 2000 and 18% less than the five-year mean. Serogroups identified included *Neisseria meningitidis* serogroup Y (37%), serogroup B (15%), and serogroup C (13%). The serogroup was recorded as unknown for 16 (35%) cases.

Two cases of meningococcal disease occurred in college students in 2001. Statistics show that those living in more crowded environments, such as campus dormitories, are at least three times more likely to contract the bacteria. A new Virginia law states that students enrolling in any four-year Virginia public college or university for the first time shall be immunized against meningococcal disease. However, if the institution of higher education provides the student or his parent (if student is a minor) information about the risks associated with meningococcal disease and the availability of the vaccine, the student or parent may waive



the vaccination by signing a written statement to that effect.

Three males, ranging in age from 24 to 57 years, died from meningococcal infection in 2001.

Pertussis

The number of cases increased 103% from 134 in 2000 to 272 cases in 2001 (Figure 7). An outbreak of 213 cases occurred primarily in the Albermarle/Charlottesville area and the counties of Madison, Orange, and Greene.

Most cases occurred during September through November, peaking in October when 102 cases were identified. Polymerase chain reaction testing may account for some of the increase in cases detected in Virginia, as well as a heightened awareness of the disease, at least partially due to the outbreak.

Rabies in Animals

The 502 cases reported in 2001 represented the second year of decline in the annual number of reported cases. Raccoons (288 cases) accounted for 57% of all rabid animals reported (Figure 8). Other reported rabid wild animals included skunks (116), foxes (34), bats (23), bobcats (6), groundhogs (3), and deer (1). Cats (20) were the most frequently reported rabid domestic animal, followed by cows (5), dogs (4), and horses (2).

Salmonellosis

The 1,368 reported cases of salmonellosis in 2001 were a 34% increase above the 1,020 cases reported in 2000 and 18% above the five-year mean. One restaurant-associated *Salmonella enteritidis* outbreak alone

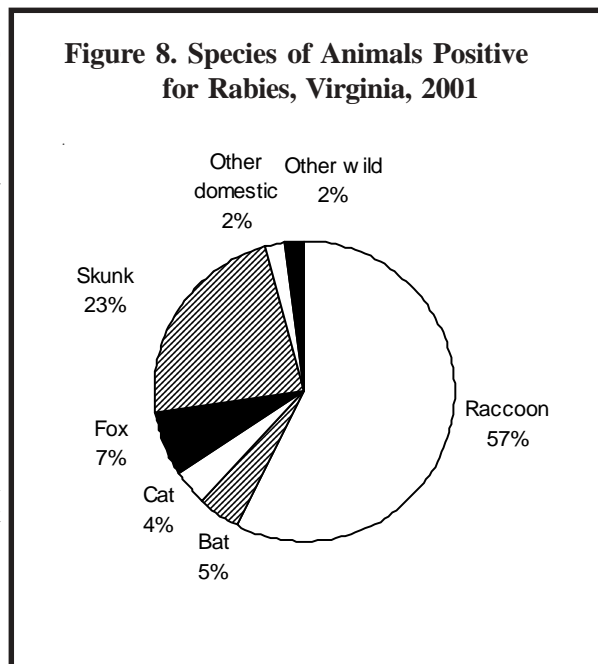
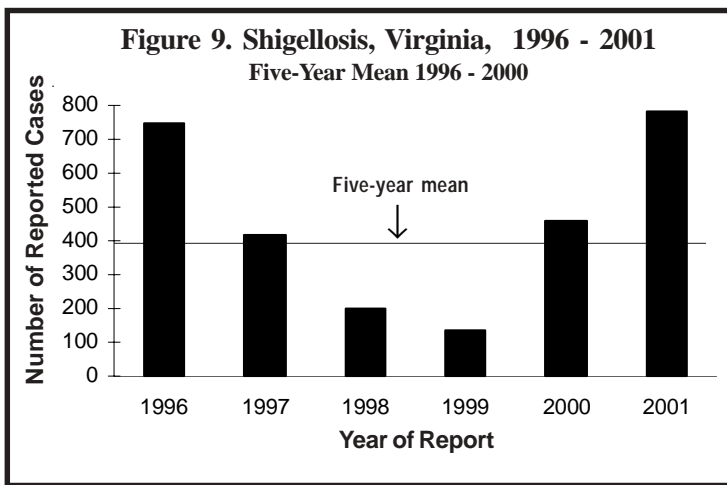


Table 2. Number of Reported Cases and Rate per 100,000 Population for Selected Diseases by Health Planning Region, Virginia, 2001

Disease	Total		Northwest Region		Northern Region		Southwest Region		Central Region		Eastern Region	
	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate
Population	7,078,515		1,019,548		1,815,197		1,307,816		1,218,327		1,717,627	
AIDS	971	13.72	87	8.53	272	14.98	81	6.19	164	13.46	367	21.37
Amebiasis	37	0.52	5	0.49	24	1.32	7	0.54	1	0.08	0	0.00
Campylobacteriosis	583	8.24	130	12.75	153	8.43	145	11.09	52	4.27	103	6.00
Chickenpox	540	7.63	48	4.71	124	6.83	47	3.59	27	2.22	294	17.12
<i>Chlamydia trachomatis</i> infection	18,323	258.85	2,174	213.23	2,355	129.74	2,696	206.15	4,262	349.82	6,836	397.99
<i>Escherichia coli</i> O157:H7	52	0.73	20	1.96	12	0.66	8	0.61	6	0.49	6	0.35
Giardiasis	417	5.89	89	8.73	162	8.92	75	5.73	57	4.68	34	1.98
Gonorrhea	11,081	156.54	464	45.51	706	38.89	1,352	103.38	3,484	285.97	5,075	295.47
<i>Haemophilus influenzae</i> infection	34	0.48	6	0.59	6	0.33	7	0.54	10	0.82	5	0.29
Hepatitis A	167	2.36	13	1.28	74	4.08	26	1.99	27	2.22	27	1.57
Hepatitis B	213	3.01	17	1.67	29	1.60	36	2.75	73	5.99	58	3.38
Hepatitis C/Non-A Non-B	3	0.04	0	0.00	1	0.06	0	0.00	1	0.08	1	0.06
HIV infection	981	13.86	74	7.26	276	15.20	71	5.43	207	16.99	353	20.55
Influenza	1,963	27.73	362	35.51	141	7.77	903	69.05	161	13.21	396	23.06
Kawasaki syndrome	28	0.40	2	0.20	3	0.17	2	0.15	2	0.16	19	1.11
Legionellosis	39	0.55	6	0.59	11	0.61	14	1.07	3	0.25	5	0.29
Listeriosis	15	0.21	3	0.29	3	0.17	4	0.31	0	0.00	5	0.29
Lyme disease	156	2.20	21	2.06	108	5.95	4	0.31	7	0.57	16	0.93
Malaria	55	0.78	7	0.69	32	1.76	2	0.15	10	0.82	4	0.23
Measles	1	0.01	0	0.00	1	0.06	0	0.00	0	0.00	0	0.00
Meningococcal infection	46	0.65	6	0.59	8	0.44	9	0.69	13	1.07	10	0.58
Mumps	8	0.11	1	0.10	1	0.06	2	0.15	0	0.00	4	0.23
Pertussis	272	3.84	235	23.05	14	0.77	6	0.46	2	0.16	15	0.87
Rabies in animals	502	--	139	--	77	--	82	--	96	--	108	--
Rocky Mountain spotted fever	40	0.57	7	0.69	5	0.28	7	0.54	15	1.23	6	0.35
Salmonellosis	1,368	19.33	168	16.48	287	15.81	240	18.35	459	37.67	214	12.46
Shigellosis	784	11.08	7	0.69	85	4.68	37	2.83	254	20.85	401	23.35
Syphilis, early	235	3.32	7	0.69	35	1.93	38	2.91	53	4.35	102	5.94
Tuberculosis	306	4.32	12	1.18	174	9.59	20	1.53	50	4.10	50	2.91
Typhoid fever	15	0.21	0	0.00	12	0.66	2	0.15	0	0.00	1	0.06



accounted for approximately 300 of the reported cases in 2001. An uncooked egg product was implicated as the cause of this outbreak.

Shigellosis

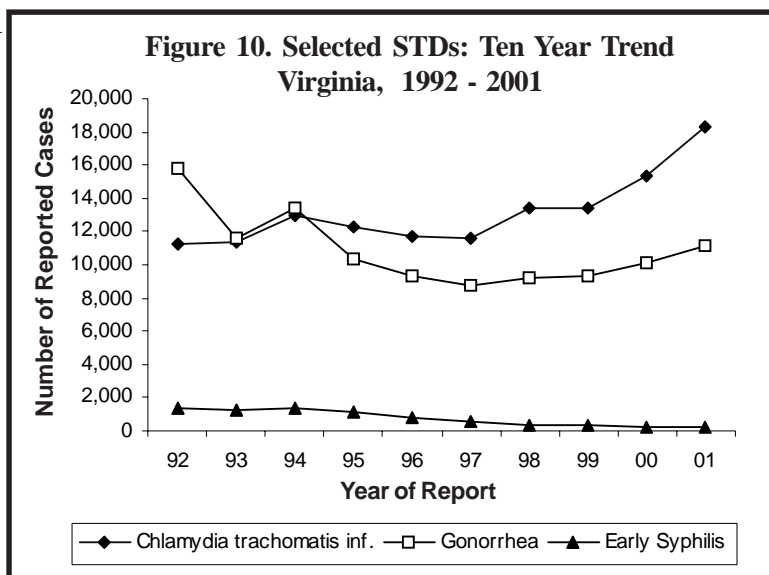
The number (784) of reported cases of shigellosis increased 70% in 2001 compared to the 460 cases reported in 2000 and was 100% higher than the five-year mean (Figure 9). Outbreaks of shigellosis involving child-care centers in the central and eastern health planning regions of the state were responsible for the increase. Although the spread of this disease can occur through contamination of food and water, the predominant mode of transmission is person-to-person. Personal hygiene (i.e., hand washing) remains the most effective method of prevention.

Sexually Transmitted Diseases

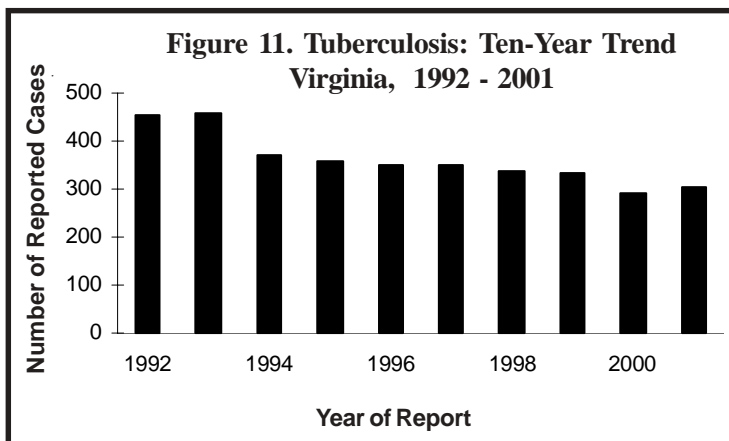
The annual number for two of the most frequently reported sexually transmitted diseases (*Chlamydia trachomatis* infection and gonorrhea) increased for the fourth consecutive year as shown in Figure 10. The 18,323 cases of *Chlamydia trachomatis* infection represented the highest annual number of cases ever reported in Virginia. The use of amplification laboratory techniques has enhanced case finding. It is estimated that 75% of women and 25% of men with uncomplicated *C. trachomatis* infection are asymptomatic. The 11,081 cases of gonorrhea were the highest annual number reported since 1994

The 306 reported cases of tuberculosis (TB) in 2001 represented a 5% increase compared to the 292 cases reported in 2000 (Figure 11). However, the number of cases reported in 2001 was still 8% less than the

Tuberculosis



five-year mean. In 2001 and 2000, 63% of cases were in persons born outside the United States. Prior to 2000, less than 50% of cases were in persons born outside of the US. Of the 306 cases reported in 2001, 34 (11%) were resistant to at least one first-line drug. Ten cases of multi-drug resistant TB (MDR-TB) were reported in 2001 compared to 7 in 2000. This is the highest annual number of MDR-TB cases since 12 were reported in 1993. In 2001, of the 197 TB patients tested,



and were 19% above the five-year mean. Early syphilis, which includes primary, secondary and early latent stages of syphilis, decreased for the seventh consecutive year. The 235 cases reported in 2001 were the lowest annual number reported in Virginia on record.

15% (29 cases) were co-infected with HIV, compared to 8% (15 cases) in 2000.

Typhoid Fever

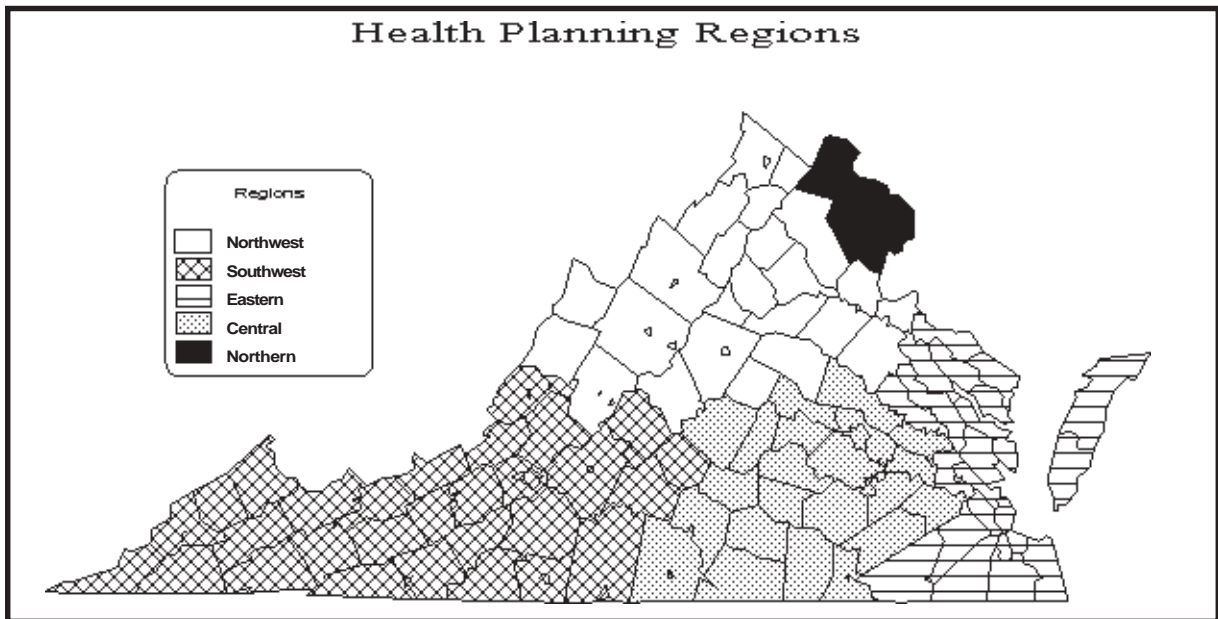
The annual number of reported cases of typhoid fever decreased 32% compared to the 22 cases reported in 2000. Most of the infected persons reported travel to another country prior to illness onset. An outbreak in northern Virginia in 2000 contributed to the higher than usual number of cases reported that year.

Vibrio Infection

Twenty-two cases of vibriosis were reported in 2001. *Vibrio parahaemolyticus* was the cause of 14 infections, *V. vulnificus* (4 infections) and *V. damsela* (1 infection). *Vibrio* serotype was unspecified for three cases. The 22 cases of vibriosis reported in 2001 were 53% higher than the five-year mean of 12 cases. A higher than expected number of *V. parahaemolyticus* infections contributed to the increase in the total number of reported cases in 2001. The number of reported *V. parahaemolyticus* infections exceeded the five-year annual mean of five cases by 180%. The majority (82%) of all reported *Vibrio* infections occurred between June and September. All cases except three occurred in adults and no deaths were reported.

EPIDEMIOLOGIC NOTES

This report presents a portion of disease surveillance statistics for 2001 and includes cases reported during the 2001 calendar year. These data may differ from the provisional data published in 2001 issues



Office of Epidemiology Welcomes Two New Staff Members

The Office of Epidemiology welcomes two new epidemiologists to our staff. **Dawn Hawkins** earned a Master of Science degree in health evaluation and epidemiology from the University of Virginia. Most recently, she had been working as a cancer prevention project manager at VDH. Dawn will serve as our Bioterrorism Surveillance Coordinator, working on enhanced methods of surveillance and epidemiologic response plans. **Julia Murphy** is a veterinarian who completed a residency in veterinary preventive medicine in 1998. She will be working on a variety of epidemiology projects with an emphasis on foodborne illness investigations.

of the VEB. Incidence rates were based on United States Census Bureau 2000 Census. For additional information about disease surveillance in Virginia, visit our Web site at <http://www.vdh.state.va.us/epi/newhome.htm>.

Submitted by: Leslie M. Branch and Seth Levine, MPH, Division of Surveillance and Investigation, Office of Epidemiology.

2000 Surveillance Report Available

The Virginia Department of Health's annual surveillance report entitled *Reportable Disease Surveillance in Virginia, 2000* is available. This document summarizes morbidity information reported in Virginia during calendar year 2000. In it you will find statistics on reportable diseases by year, region, age, race, sex, and time of onset. Through the report, information is presented in the form of narratives, graphs, tables, and maps. If you are interested in receiving a copy of this report, please call the Office of Epidemiology at (804) 786-6261. This publication is distributed free of charge.

Cases of Selected Notifiable Diseases Reported in Virginia*

Total Cases Reported, April 2002

Regions

**Total Cases Reported Statewide,
January through April**

Disease	State	Regions					Total Cases Reported Statewide, January through April		
		NW	N	SW	C	E	This Year	Last Year	5 Yr Avg
AIDS	60	2	31	4	9	14	230	322	303
Campylobacteriosis	27	2	8	8	6	3	105	102	111
<i>E. coli</i> O157:H7	3	1	2	0	0	0	7	6	7
Giardiasis	17	1	8	2	1	5	53	122	115
Gonorrhea	906	32	71	101	296	406	3463	2918	2864
Hepatitis A	14	4	5	1	3	1	30	45	56
B, acute	27	1	0	10	10	6	65	43	38
C/NANB, acute	1	0	0	1	0	0	1	0	3
HIV Infection	93	4	30	3	27	29	287	261	272
Lead in Children†	50	5	12	12	7	14	168	163	142
Legionellosis	0	0	0	0	0	0	2	4	5
Lyme Disease	5	0	2	0	2	1	6	7	5
Measles	0	0	0	0	0	0	0	0	1
Meningococcal Infection	4	0	1	3	0	0	16	20	20
Mumps	0	0	0	0	0	0	2	2	4
Pertussis	31	27	2	0	1	1	62	8	11
Rabies in Animals	53	11	12	12	8	10	186	126	168
Rocky Mountain Spotted Fever	0	0	0	0	0	0	1	0	0
Rubella	0	0	0	0	0	0	0	0	0
Salmonellosis	59	17	14	7	13	8	203	306	211
Shigellosis	60	5	6	2	13	34	324	39	62
Syphilis, Early§	4	0	0	0	0	4	31	102	153
Tuberculosis	14	2	5	1	0	6	61	64	88

Localities Reporting Animal Rabies This Month: Albemarle 1 raccoon; Arlington 1 rabbit, 1 raccoon; Augusta 1 skunk; Bedford 1 raccoon; Brunswick 1 fox; Buckingham 1 raccoon, 1 skunk; Campbell 1 fox; Caroline 1 raccoon; Chesapeake 1 raccoon; Clarke 1 raccoon; Fairfax 1 fox, 5 raccoons; Fauquier 1 raccoon; Franklin 1 raccoon; Giles 1 bobcat; Halifax 1 raccoon; Hampton 1 raccoon; Hanover 1 raccoon, 1 skunk; Henry 1 skunk; James City 1 raccoon; King and Queen 1 raccoon; King George 1 raccoon; Loudoun 1 horse, 3 raccoons; Lunenburg 1 raccoon; Mecklenburg 1 skunk; Norfolk 2 raccoons; Northampton 1 raccoon; Orange 2 raccoons; Pittsylvania 2 raccoons, 1 skunk; Spotsylvania 1 sheep; Stafford 1 raccoon; Tazewell 3 raccoons; Virginia Beach 3 raccoons; Warren 1 raccoon; Washington 1 bobcat.

Toxic Substance-related Illnesses: Asbestosis 91; Lead Exposure 5; Pneumoconiosis 8.

*Data for 2002 are provisional. †Elevated blood lead levels $\geq 10\mu\text{g/dL}$.

§Includes primary, secondary, and early latent.

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