

Communicable Disease Summary 2010



FAIRFAX COUNTY

FAIRFAX COUNTY HEALTH DEPARTMENT
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Fairfax County Health Department 2010 Communicable Disease Summary



Dear Colleague:

Communicable disease surveillance, prevention, and control are core activities of the Fairfax County Health Department. Each year, the Communicable Disease/Epidemiology Unit receives and investigates thousands of reports of suspected communicable diseases and outbreaks from the healthcare community, laboratories, public safety professionals, and others.

This first edition of the Health Department's *Communicable Disease Summary* provides a synopsis of the results of those investigations and highlights the communicable diseases that most impacted the Fairfax community in 2010. The report also describes the communicable disease services provided by the Health Department and offers practical guidance for clinicians that we believe will help mitigate the future impact of these diseases on our community.

As you know, clinicians play a critical role in ensuring the rapid identification of and response to cases and outbreaks of communicable diseases. Although recent technological advances have improved the efficiency, timeliness, and overall utility of public health surveillance systems, these systems still rely heavily on the astute observations, proper diagnoses, and timely reporting of healthcare providers. Rapid identification and reporting of situations of public health concern can dramatically influence the course of outbreak or case investigations. Such prompt notification allows for quicker diagnosis, earlier implementation of disease prevention and control measures, and the use of time-sensitive interventions such as antibiotic or vaccine prophylaxis.

The information presented in this report represents the collaborative efforts of all of the Fairfax County public health system partners who contribute to the communicable disease surveillance, prevention, and control activities undertaken by the Health Department. We thank you for your contributions and look forward to your continued partnership and support in the ongoing effort to improve the health and well-being of the Fairfax community.

Sincerely,

Gloria Addo-Ayensu, MD, MPH
Director of Health

Table of Contents

Disease Summary	2
Highlighted Diseases	
Measles.....	3
Pertussis.....	4
Influenza	5
Tuberculosis	6
HIV/AIDS.....	7
Chlamydia	8
Rabies.....	9
Lyme Disease	10
Foodborne Illness	11
Outbreak Summary	12
CD/Epi Unit Description & Contact Information	13
Reporting Information	14

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The mission of the Fairfax County Health Department is to protect, promote and improve health and quality of life for the residents of Fairfax County.

Reported Cases of Selected Communicable Diseases, Fairfax County, 2001-2010*

Disease										2010 ^a	5 year average 2005-2009
	2001	2002	2003	2004	2005	2006	2007	2008	2009		
AIDS	93	70	82	66	59	72	74	69	65	52	67.8
Amebiasis	14	5	9	4	12	10	9	17	7	5	11.0
Brucellosis	0	0	0	1	1	0	0	0	0	0	0.2
Campylobacteriosis	76	72	98	80	91	93	83	101	121	105	97.8
<i>Chlamydia trachomatis</i> infection	866	833	728	924	1284	1272	1310	1577	1572	1543	1403.0
Cryptosporidiosis	2	2	11	6	4	7	5	13	19	17	9.6
Cyclosporiasis	0	0	1	1	0	0	0	0	0	0	0.0
Dengue fever	0	0	0	0	0	0	8	2	0	3	2.0
<i>Escherichia coli</i> infection, Shiga toxin-producing	6	6	7	4	21	31	30	59	27	27	33.6
Ehrlichiosis	0	0	1	0	2	2	2	11	1	7	3.6
Giardiasis	80	65	73	92	86	83	100	78	93	110	88.0
Gonorrhea	203	234	188	201	229	120	88	224	216	203	175.4
<i>Haemophilus influenzae</i> , invasive	6	1	3	1	4	3	2	6	9	8	4.8
Hepatitis A, acute	39	26	29	28	34	20	24	24	10	8	22.4
Hepatitis B, acute	16	9	10	6	6	6	8	10	5 [±]	1	7.5
HIV infection	109	109	110	103	125	149	121	126	105	93	125.2
Kawasaki syndrome	1	2	1	0	2	0	0	0	0	0	0.4
Lead, elevated blood levels	46	54	33	60	28	41	16	26	33	31	28.8
Legionellosis	8	0	6	6	3	5	3	9	7	7	5.4
Listeriosis	2	0	2	3	3	3	2	2	0	0	2.0
Lyme disease	37	69	10	1	10	102	208	191	260	256	154.2
Malaria	18	6	15	16	7	17	21	13	16	19	14.8
Measles	1	0	0	0	0	0	0	0	0	0	0.0
Meningococcal disease (<i>Neisseria meningitidis</i>)	1	6	0	2	2	4	1	1	1	2	1.8
Mumps	1	0	0	0	0	6	5	2	0	3	2.6
Pertussis	2	7	0	67	41	40	13	39	31	33	32.8
Rabies, human	0	0	1	0	0	0	0	0	1	0	0.2
Rocky Mountain spotted fever	2	0	1	7	8	11	5	9	6	11	7.8
Salmonellosis	165	190	205	188	173	152	187	165	111	147	157.6
Shigellosis	45	55	62	43	30	27	49	25	26	37	31.4
<i>Staphylococcus aureus</i> infection, invasive (MRSA)	-	-	-	-	-	-	12	97	52	51	53.7
<i>Streptococcus pneumoniae</i> , invasive	0	0	0	4	4	8	1	6	3	8	4.4
Streptococcus disease, Group A, invasive	3	1	2	0	8	11	13	11	14	15	11.4
Syphilis, early stage	6	20	19	15	31	36	33	34	37	38	34.2
Toxic-shock syndrome	1	0	0	0	0	0	1	0	0	0	0.2
Tuberculosis	89	98	85	95	93	120	108	98	86	84	101.0
Typhoid fever	11	0	10	5	10	7	10	8	2	6	7.4
Varicella (Chickenpox)	87	83	32	86	211	301	180	155	64	59	182.2
Vibrio infection	4	2	3	3	3	4	5	4	0	5	3.2
West Nile infection	0	13	3	1	0	3	1	1	1	2	1.2
Yersiniosis	0	0	1	0	1	1	2	2	1	1	1.4
Total	2040	2038	1841	2119	2626	2767	2739	3215	2997	2997	2868.8

Selected reportable diseases with only one case in the past ten years: Botulism (infant), Cholera, Influenza-associated pediatric mortality, LaCrosse encephalitis, Powassan virus, Rubella, and Trichinosis.

* Unless otherwise indicated, all communicable disease data in this report are primary surveillance data from the Fairfax County Health Department and the Virginia Department of Health.

^a 2010 data are provisional

± Includes one case of perinatal Hepatitis B in 2009

- Not a reportable illness during the year listed.

Measles

Endemic transmission of measles has not been identified in the U.S. since the late 1990s. However, measles remains prevalent in much of the world, and international importation of the virus continues.¹ Maintaining high levels of 2-dose MMR vaccination coverage in the community and ensuring adequate vaccination for residents traveling overseas are the keys to limiting disease transmission in Fairfax County.

- Between 2008 and 2010, a total of 10 measles cases were identified in the National Capital Region. Six of these cases had traveled overseas during the incubation period and were classified as internationally-imported. Three additional cases had no travel history but were linked to an internationally-imported case.
- Although none of these measles cases were among Fairfax County residents, many of the infected individuals worked, visited, or sought medical care in the County. FCHD conducted multiple, large-scale investigations, contacting nearly 1,500 exposed individuals to determine their immune status and provide appropriate recommendations for exclusion and prophylactic immunization.
- Prompt reporting of suspected measles cases allows for a timely and effective public health response. In a recent contact investigation conducted in August 2010, FCHD was notified immediately of exposures to a known measles case at a private medical practice. Within hours of the exposure incident, FCHD staff was on-site and, working closely with the private practice, rapidly identified 92 exposed patients and staff members. Immune status was assessed for all 92 of these contacts within 48 hours of initial exposure. Eighteen of these individuals were considered non-immune and exclusion in the home was recommended. Appropriate prophylaxis with immune globulin or MMR vaccine was administered within 72 hours for all eligible contacts. No secondary cases were identified during this investigation.

Measles Vaccination and International Travel

All patients traveling internationally should be fully vaccinated against measles.

- Adults should have 2 doses of measles vaccine prior to travel.
- Children traveling internationally can be given measles vaccine as early as 6 months of age. These children should then receive a measles vaccine at 12-15 months of age. This second dose should be given at least 28 days after the initial dose.
- Children who are older than 12 months of age and have already received one dose of vaccine should receive a second dose prior to travel. The interval between doses should be 28 days or more.

Clinician Pearls

To help prevent measles transmission, FCHD recommends the following for suspect measles patients (i.e. patients with a febrile rash and clinically compatible symptoms, such as cough, coryza, and/or conjunctivitis):

- If you are aware that a suspect measles patient will be arriving at your facility, ensure that the patient is masked prior to entering the building. Notify other facilities before referring suspect measles patients so that appropriate infection control measures can be implemented;
- Immediately triage the patient and do not allow the patient to remain in your waiting area;
- Place a surgical mask on the patient as soon as possible;
- Place the masked patient in a private, negative pressure room if available, or a room with a closed door. This room should not be used for 2 hours after the suspect measles patient leaves;
- Use standard and airborne precautions, if possible;
- Only health care workers with documented immunity to measles should work with the patient;
- Collect a serum specimen to test for measles IgM and IgG antibodies and a throat swab for viral isolation;
- Contact the Health Department's Communicable Disease/Epidemiology Unit immediately at 703-246-2433 (normal business hours) or 703-409-8449 (evenings and weekends) to report the suspected case.

FCHD Services

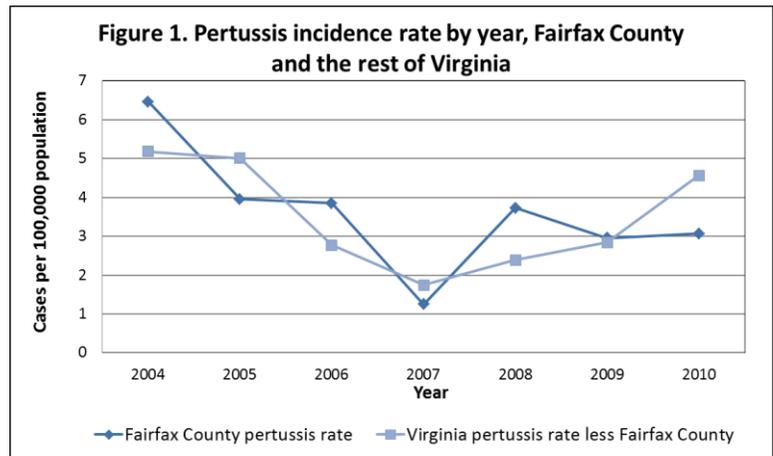
Once notified of a suspected measles case, FCHD will:

- Provide detailed recommendations and assistance regarding laboratory testing;
- Provide infection control guidance;
- Conduct a thorough investigation to identify all exposed individuals and provide appropriate recommendations regarding prophylactic immunizations.

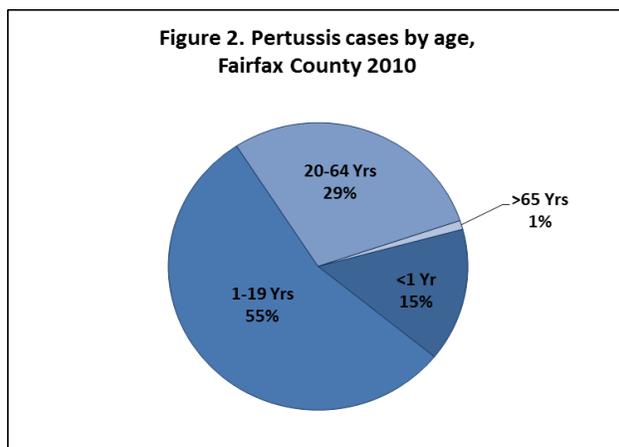
¹ CDC. Measles --- United States, January--May 20, 2011. MMWR 2011; 60(20): 666-668.

Pertussis

Pertussis incidence has steadily increased in the U.S. since the 1980s, with cyclical increases in disease incidence every 3 to 5 years and numerous outbreaks. In 2010, pertussis incidence rates reached historic levels in several states, and Virginia saw a 70% increase in disease incidence compared to 2009.^{2,3} These trends highlight the importance of universal vaccination against pertussis, the early identification and treatment of disease, and the prompt reporting of suspected cases to FCHD.



- In Fairfax County, as in the rest of Virginia, pertussis is endemic with significant annual variability in disease incidence (Figure 1). Between 2004 and 2010, an average of 38 cases of pertussis were identified each year, equivalent to an average annual incidence rate of 3.6 cases per 100,000 population.



- In 2010, a total of 33 cases of pertussis were identified in Fairfax County. Nearly 55% of these cases were associated with 4 school-based outbreaks. Although the majority of cases were among children, approximately 30% of the cases occurred in patients older than 19 years of age (Figure 2).
- Outbreaks of pertussis occur most frequently at middle and high schools, when protection from the primary childhood vaccines series has waned. The relatively high incidence of pertussis among adolescents and adults reinforces the importance of providing booster vaccinations in these populations.

Clinician Pearls

- Due to waning immunity from natural infection or vaccination, pertussis can affect individuals of all ages. Therefore:
 - Ensure all patients are fully vaccinated according to the Advisory Committee on Immunization Practices guidelines. This includes the administration of Tdap booster doses as indicated. Updated pertussis vaccination guidance is available at <http://www.cdc.gov/vaccines/vpd-vac/pertussis/recs-summary.htm>;
 - Consider pertussis in the differential diagnosis for all patients presenting with cough illness, regardless of age and vaccination status.
- Laboratory testing should be conducted to confirm the etiologic agent in symptomatic patients. Nasopharyngeal specimens should be collected and tested by PCR within 3 weeks of cough onset. Currently, serologic testing is of limited benefit for pertussis diagnosis.
- Suspected pertussis cases should be immediately reported to FCHD to enable the rapid identification of exposed contacts, as chemoprophylaxis is most effective when administered promptly after exposure. *Do not wait for laboratory confirmation to report.*

FCHD Services

Once notified of a suspected pertussis case, FCHD will:

- Provide recommendations and assistance regarding laboratory testing;
- Conduct a thorough investigation to identify exposed individuals;
- Provide guidance regarding infection control and the administration of antibiotic chemoprophylaxis.

² CDC. (2010, September 21). Pertussis: surveillance & reporting. Retrieved from <http://www.cdc.gov/pertussis/surv-reporting.html>.

³ CDC. (2011, March 15). Pertussis: outbreaks. Retrieved from <http://www.cdc.gov/pertussis/outbreaks.html>.

Influenza

In Fairfax County, as in the rest of the U.S., the peak of influenza activity during the 2009-2010 influenza season occurred in October, 2009, with continued activity well into 2010. By comparison, the 2010-11 influenza season followed a more typical pattern, with disease activity peaking during January and February, 2011. State and national level virologic surveillance identified primarily 2009 H1N1 viruses during the 2009-2010 season and co-circulation of 2009 H1N1, influenza A(H3), and influenza B viruses during the 2010-2011 season.⁴ No influenza-associated pediatric deaths were reported in Fairfax County during the past two influenza seasons.

Influenza surveillance is conducted each October through May in Fairfax County. Unlike surveillance for other communicable diseases, which relies heavily on the reporting of individual cases, influenza surveillance assesses disease activity at the community level. FCHD utilizes multiple influenza surveillance systems and approaches, including:

- **Emergency Department Syndromic Surveillance:** FCHD uses the Electronic Surveillance System for the Early Notification of Community-Based Epidemics (ESSENCE) to collect influenza-like illness chief complaint data from emergency departments and other sources. This information is primarily used to follow temporal trends in disease activity.
- **Public School Absenteeism Surveillance:** The Health Department School Illness Monitoring System is a web-based system that enables the early detection of influenza (and gastrointestinal) outbreaks. Student absences are compared to a rolling average and statistically elevated levels of absenteeism prompt an epidemiologic investigation by FCHD.
- **Sentinel Provider Influenza Surveillance:** FCHD and the Virginia Department of Health partner with private providers to conduct virologic surveillance. Each month, participating providers submit specimens from patients with influenza-like illness to the Division of Consolidated Laboratory Services (the Virginia state laboratory) for PCR confirmation, typing, and sub-typing. Data from Fairfax County is combined with testing results from other areas in the state and used to monitor temporal and geographic virologic trends.

FCHD Influenza Vaccination Initiatives

- During the 2009-10 influenza season, FCHD administered nearly 75,000 doses of 2009 H1N1 influenza vaccine. Vaccine was also made available to over 370 outpatient practices, hospitals, and other organizations in Fairfax County who registered with Virginia Immunization Information System (VIIS). Collectively, community providers administered approximately 200,000 doses of 2009 H1N1 vaccine.
- For the 2010-11 influenza season, FCHD conducted a targeted vaccine campaign among ethnic minorities, the homeless, the incarcerated, and other hard-to-reach populations who do not traditionally receive influenza vaccine. Using American Recovery and Reinvestment Act (ARRA) funded vaccine, FCHD worked with community partners to distribute and administer over 18,000 doses of influenza vaccine (FCHD normally administers approximately 4,000 doses annually).

Clinician Pearls

- The Advisory Committee on Immunization Practices now recommends routine influenza vaccination for all persons aged 6 months and older.
- Vaccination efforts should continue throughout the influenza season, because the duration of the influenza season varies and disease activity might not peak until February or March.
- Influenza-associated deaths in children < 18 years of age and all suspected institutional outbreaks of influenza should be immediately reported to FCHD.
- Achieving high influenza vaccination rates among health care professionals (HCP) and patients is a critical step in preventing healthcare-associated influenza infections.

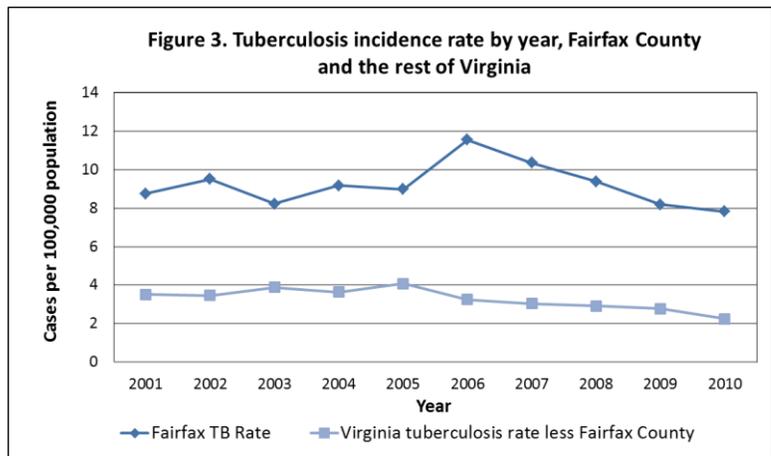
FCHD Services

- In addition to the targeted vaccine outreach efforts described above, FCHD provides free influenza vaccine to all Health Department clients through our five district offices. Vaccine is also available for a nominal fee to the general public.
- When notified of institutional outbreaks of influenza, FCHD will:
 - Facilitate laboratory testing to verify the etiologic agent of illness;
 - Provide infection control recommendations to limit the further spread of illness.

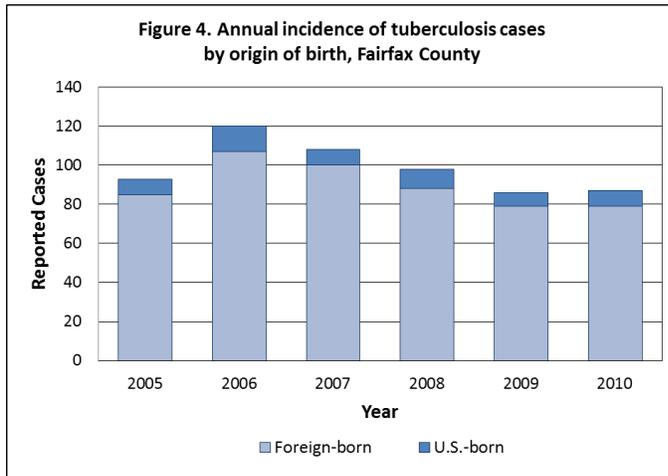
⁴ CDC. (2011, June 24). Fluviv: 2010-2011 influenza season week 24 ending June 18, 2011. Retrieved from <http://www.cdc.gov/flu/weekly/index.htm#whomap>.

Tuberculosis

Over the last decade, the annual number of tuberculosis (TB) cases reported in the U.S. has decreased by approximately 30%, with an average annual rate of decline of over 4.0%. This trend has been driven primarily by a decrease in cases among U.S.-born persons, while the number of cases among foreign-born persons has remained relatively stable. In 2010, approximately 60% of TB cases identified in the U.S. were among foreign-born individuals.^{5, 6}



- In Fairfax County, the TB incidence rate has remained relatively stable over the last decade and is consistently much higher than the incidence rate for the rest of Virginia (Figure 3). In 2010, the Fairfax County TB incidence rate of 7.8 cases per 100,000 was 3.5 times higher than the rate for the rest of Virginia (2.2 per 100,000), and more than double the 2010 U.S. rate (3.6 per 100,000).
- Fairfax County is an immigrant gateway and TB incidence remains high due to the continued predominance of foreign-born individuals among local TB cases. Between 2005 and 2010, approximately 90% of incident TB cases identified in Fairfax County were among foreign-born persons (Figure 4). Forty-nine percent (49%) of these foreign-born TB cases had resided in the United States for 5 years or less at the time of diagnosis. On



aggregate, the most common countries of origin for foreign-born cases identified between 2005 and 2010 were Vietnam (11.3%), India (11.2%), Ethiopia (7.8%), South Korea (6.6%), and El Salvador (5.9%). The remaining 57% of cases originated from 51 additional countries.

- In 2010, 19% of Fairfax County TB cases exhibited INH resistance, but none exhibited multi-drug resistance (MDR). Between 2005 and 2009, 7 cases of MDR TB were identified for a rate of 1.1%, which is consistent with the U.S. national rate.
- Eighteen cases of TB/HIV co-infection were reported between 2005 and 2010 in Fairfax County.

Clinician Pearls

- Consider TB in the differential diagnosis for foreign-born individuals presenting with compatible signs and symptoms (e.g. cough, fever, night sweats, or weight loss).
- Immediately report all suspected TB cases to FCHD.
- Fluoroquinolones should be avoided for treatment of foreign-born individuals diagnosed with community-acquired pneumonia as these are anti-TB medications. If fluoroquinolones are used for pneumonia treatment, the individual may transiently recover and the chest x-ray may improve. However, if the patient is actually infected with TB, the individual will regress clinically and may acquire fluoroquinolone-resistant TB.

FCHD Services

Once notified of a suspected TB case, FCHD will:

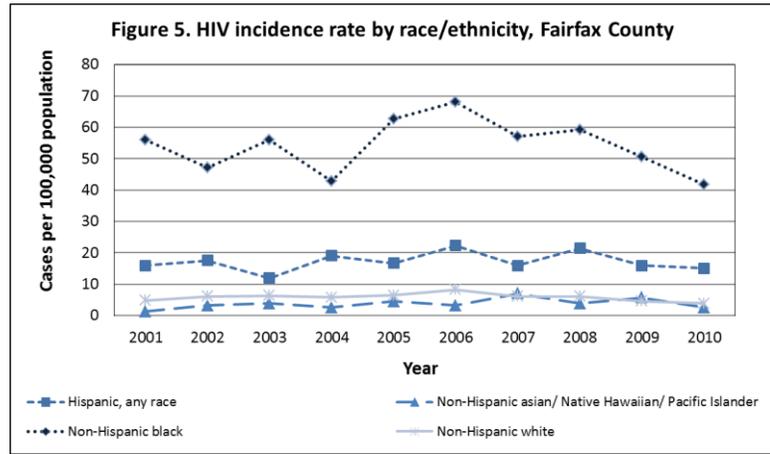
- Provide recommendations and assistance regarding diagnosis and treatment;
- Provide free laboratory testing, chest x-rays, medications, and case management services for Fairfax County residents;
- Conduct contact investigations to identify exposed individuals and provide appropriate follow-up.

⁵ CDC. Trends in Tuberculosis --- United States, 2010. MMWR 2011; 60(11): 333-337.

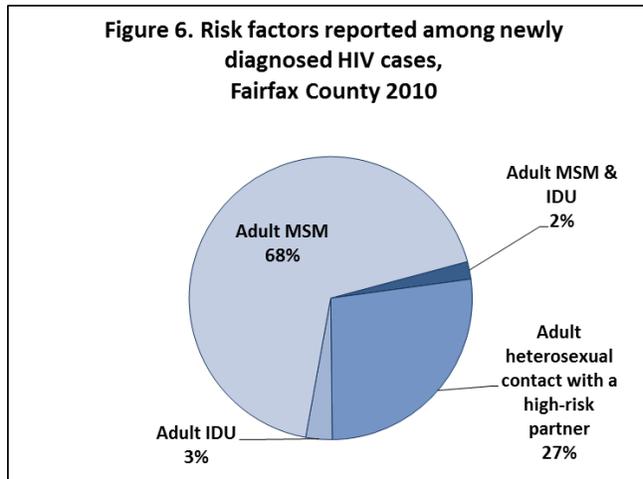
⁶ CDC. (2010, February 7). Online Tuberculosis Information System (OTIS) Data. Retrieved from <http://wonder.cdc.gov/tb.html>.

HIV/AIDS

Annual HIV incidence rates in the U.S. have remained relatively stable in recent years. However, there has been a marked increase in the number of individuals living with HIV and AIDS as treatment modalities and access to services improve. Specific demographic groups continue to be disproportionately affected at the national level. Among racial and ethnic groups, non-Hispanic blacks face the highest burden of disease, followed by Latinos. By risk group, men who have sex with men (MSM) are the most severely affected by HIV and AIDS.⁷



- In Fairfax County, the incidence of HIV has fluctuated over the last decade (range 93-149 cases) with no clear increase or decrease in the number of reported cases. Approximately 75% of incident HIV cases identified between 2001 and 2010 were male and the most common age at diagnosis was 30-39 years.
- 2160 Fairfax County residents were living with HIV or AIDS at the end of 2010.



- In 2010, the Fairfax County HIV incidence rate for non-Hispanic blacks was more than 10 times greater than that seen among white residents. Hispanics were also disproportionately affected, with an incidence rate nearly 4 times that seen among whites (Figure 5).
- In 2010, the majority of new HIV diagnoses in Fairfax County were among MSM. Other high-risk groups included adults reporting heterosexual contact with a high-risk partner and intravenous drug users. (Figure 6).

Clinician Pearls

- The CDC recommends routine HIV screening for all patients aged 13-64 in all health care settings. Screening should be performed regardless of whether the patient is known or suspected to have specific behavioral risks for HIV infection.
- In 2008, Virginia adopted an “opt-out” screening process for HIV testing. Under this process, consent for HIV testing is inferred unless the patient verbally declines. A medical care provider must inform the patient that the test is planned, provide information about the test, and advise the patient of their right to decline the test. A specific written consent form is not necessary; general consent for medical care is sufficient. If a patient declines an HIV test, clinicians must document the declination in the patient’s medical record.

FCHD Services

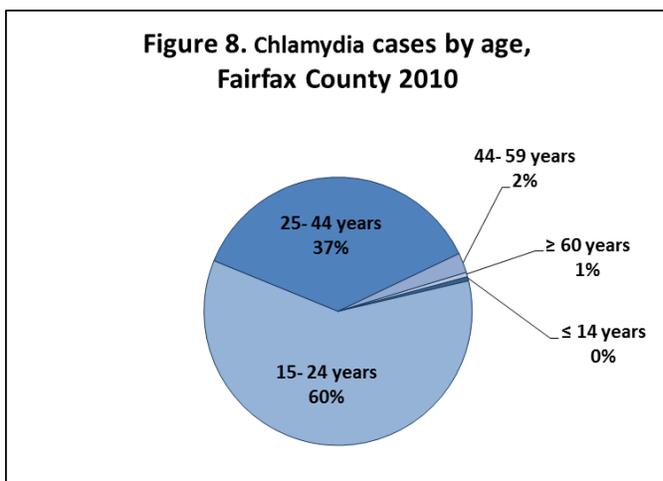
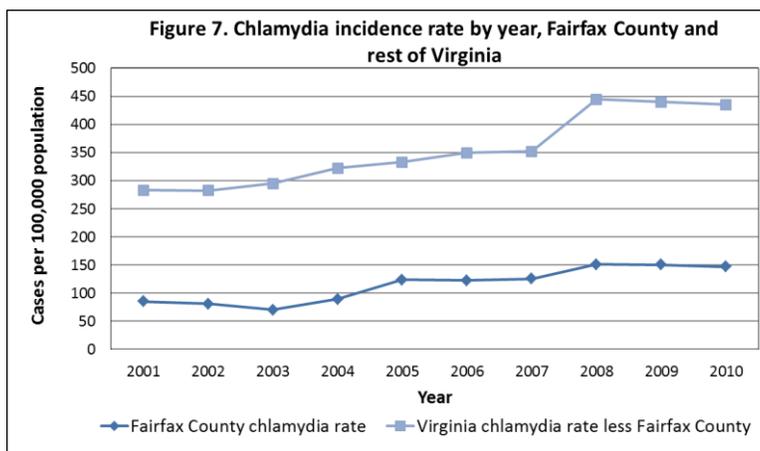
Confidential HIV testing is available free of charge at each of the five FCHD district offices through “walk-in” clinic or STD clinic. Harm reduction counseling before and after testing is included. All Health Department offices are open Monday – Friday, 8:00 am to 4:30pm. Clients may call 703-246-2411 to confirm service hours.

⁷ CDC. HIV Surveillance --- United States, 1981-2008. MMWR 2011; 60(21): 689-693.

Chlamydia

Chlamydia is the most commonly reported nationally notifiable disease in the U.S. and in Fairfax County. At the national level, there has been a clear increase in disease incidence over the last ten years. Sexually active adolescents and young adults have the highest rates of infection and significant racial and ethnic disparities in disease burden exist.^{8,9}

- The chlamydia incidence rate in Fairfax County has increased over the last decade, but has remained consistently lower than the rate for the rest of Virginia (Figure 7). In 2010, the Fairfax County incidence rate of 143.6 per 100,000 was approximately one-third the rate for the rest of Virginia (429.0 per 100,000).



- As with other sexually-transmitted diseases, chlamydia disproportionately affects communities of color in Fairfax County. In 2010, the rate of infection among non-Hispanic blacks was more than 8 times the rate of infection seen in whites. The rate among Hispanics was over 3 times the rate for whites.
- In 2010, over 70% of Fairfax County chlamydia cases were females* and approximately 60% of new cases were between the ages of 15-24 (Figure 8).

** A bias towards reproductive age females exists due to chlamydia testing during pregnancy and gynecological exams.*

Clinician Pearls

- CDC recommends annual chlamydia screening for all sexually active women aged ≤ 25 years and screening of older women with risk factors (e.g., those who have a new sex partner or multiple sex partners). Screening of sexually active young men should be considered in clinical settings with a high prevalence of chlamydia (e.g., adolescent clinics, correctional facilities, and STD clinics).
- Timely treatment of sex partners can reduce the risk of re-infection with chlamydia. Individuals who have had sexual contact with a chlamydia patient during the 60 days preceding the onset of symptoms or diagnosis in that patient should be seen for evaluation, testing, and treatment. If your patient's sex partner(s) is not enrolled in your practice, please refer them to their primary care provider or to FCHD.
- Testing and treatment of chlamydia not only reduces the burden of chlamydial disease, but can help reduce the risk of HIV infection. Inflammation caused by genital ulcers, as well as non-ulcerative STDs such as chlamydia, can increase susceptibility to HIV infection by providing the HIV virus with a higher concentration CD4 cells to target. STDs can also increase the transmissibility of HIV because individuals with STDs are more likely to shed HIV virus through genital secretions.¹⁰

FCHD Services

STD services, including testing and treatment, are available free of charge at each of the five FCHD district offices. All Health Department offices are open Monday – Friday, 8:00 am to 4:30pm. Clients may call 703-246-2411 to confirm service hours.

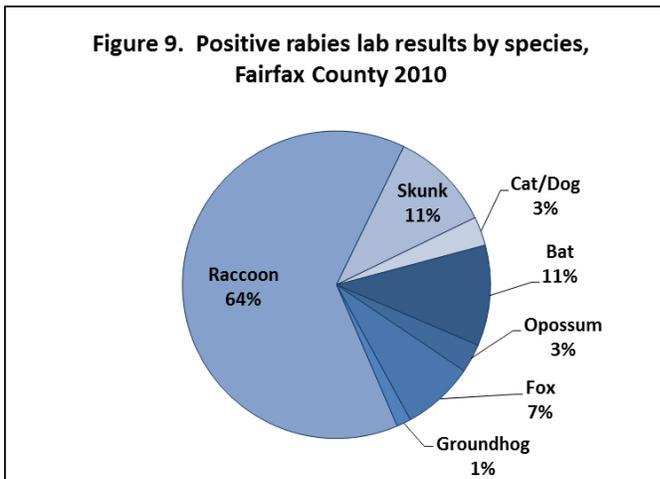
⁸ CDC. (2011, January 21). 2009 Sexually Transmitted Disease Surveillance: Chlamydia. Retrieved from <http://www.cdc.gov/std/stats09/chlamydia.htm>.

⁹ CDC. CDC Grand Rounds: Chlamydia Prevention: Challenges and Strategies for Reducing Disease Burden and Sequelae. MMWR 2011; 60(12): 370-373.

¹⁰ CDC. (2009, October 20) The Role of STD Detection and Treatment in HIV Prevention - CDC Fact Sheet. Retrieved from <http://www.cdc.gov/std/hiv/STDFact-STD-HIV.htm>.

Rabies

The epidemiology of rabies in the U.S. has changed dramatically over the last half century due to the elimination of canine rabies (through domestic animal vaccination programs) and the development of modern rabies prophylaxis regimens. Currently, more than 90% of all animal rabies cases reported in the U.S. occur among wild mammals, with domestic animal and human disease occurring much more rarely.¹¹



- In 2010, the FCHD Public Health Laboratory conducted direct fluorescent antibody testing for rabies virus on 472 animals submitted from within Fairfax County. Sixty-six (14 %) of these animals tested positive for rabies. Raccoons accounted for a majority of the positive tests, followed by skunks, bats, and foxes (Figure 9). These animals are considered to be the highest risk species in the County. Smaller mammals such as squirrels, rabbits, and mice very rarely test positive for rabies.
- Between 2001 and 2010, two human rabies cases were reported. The most recent case, a fatal infection with internationally-imported canine rabies, occurred in 2009.

- In 2010, approximately 1300 human exposures to animals (primarily bites) were reported to the Fairfax County Animal Services Division (ASD). Each of these exposures required significant follow-up to determine the need for rabies post-exposure prophylaxis (PEP). In the vast majority of cases, ASD and FCHD were able to locate the offending animal for quarantine or laboratory testing (or otherwise rule-out rabies exposure), thus eliminating the need for rabies PEP.

Rabies Exposure Definition
Any bite, scratch, or other situation where saliva or central nervous system tissue from a potentially rabid animal enters a fresh, open wound or contacts a mucous membrane by entering the eye, mouth, or nose.

- FCHD surveillance identified a total of 257 Fairfax County residents who initiated rabies PEP in 2010. Although PEP was indicated for most of these individuals, 62 (24%) did not have a rabies exposure history that met the Advisory Committee on Immunization Practices' criteria and should not have received PEP. PEP was incorrectly administered in 53 (21%) of these 257 patients. Failure to infiltrate the wound with HRIG was the most common PEP administration error.

Clinician Pearls

Thorough rabies exposure assessment and appropriate administration of post-exposure prophylaxis (PEP) are critical for preventing disease and ensuring that an adequate supply of vaccine remains available for truly exposed individuals.

- Not all individuals exposed to a potentially rabid animal will require PEP. If the offending animal can be located for quarantine or testing, PEP may not be necessary.
- All exposures to potentially rabid animals must be reported immediately to the Fairfax County Animal Services Division (ASD) at 703-691-2131 (Fax: 703-830-7806). ASD staff can assist with locating the offending animal.
- When anatomically feasible, the full dose of HRIG should be thoroughly infiltrated into the area in and around the wound(s). Any remaining HRIG should be administered at a site distant from vaccine administration.
- PEP administration should be reported to FCHD using a Virginia Department of Health Confidential Morbidity Report (Epi-1 form) or by calling 703-246-2433.

FCHD Services

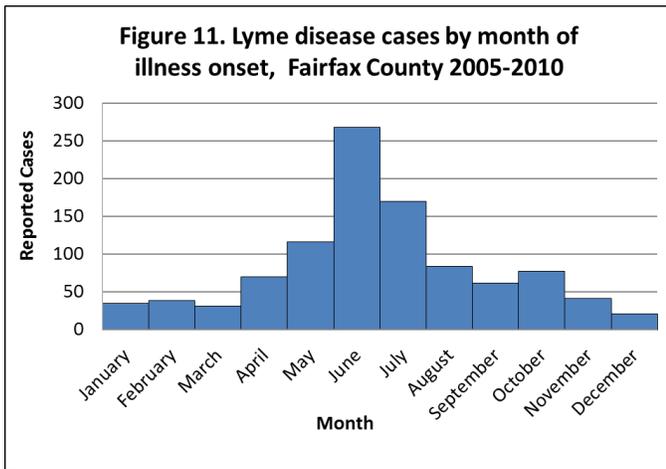
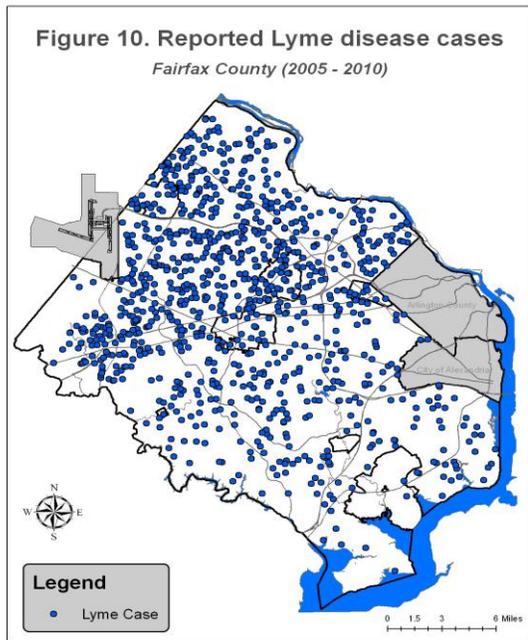
FCHD Rabies Program staff are available at 703-246-2433 (business hours) or 571-274-2296 (after hours) to assist with rabies exposure assessments and to provide guidance regarding PEP administration.

¹¹ Blanton, J.D., Palmer, D., & Rupprecht, C.E. (2010). Rabies surveillance in the United States. *Journal of the American Veterinary Medical Association*, 237(6), 646-657.

Lyme Disease

Lyme disease is the most commonly reported vector-borne disease in the United States. The geographic distribution of disease is highly focused, with the majority of reported cases occurring in the northeastern and north-central states.¹² In recent years, the northeastern zone of disease activity has expanded southward and westward to include Northern Virginia.

- Between 2000 and 2009, Fairfax County experienced a 13-fold increase in the number of reported cases of Lyme disease, from 19 cases in 2000 to 260 cases in 2009. This increase was consistent with trends seen in neighboring jurisdictions. In 2010, 256 cases of Lyme disease were reported to the FCHD.



- Reported Lyme disease cases are not uniformly distributed in Fairfax County, with higher rates of disease noted in the less densely-populated western portions of the County. However, cases are reported from all areas and all Fairfax County residents should be considered at risk of disease (Figure 10).
- Lyme disease cases are identified throughout the year in Fairfax County. However, disease incidence is highest during the early summer months when the number and activity of nymphal *Ixodes scapularis* ticks, the primary vector for human disease, is highest (Figure 11).

Clinician Pearls

- Maintain a high index of suspicion for Lyme disease in all patients presenting with clinically compatible signs and symptoms. Note that a significant proportion of patients with Lyme disease never develop an erythema migrans rash.
- Early recognition and treatment of patients with Lyme disease can help avoid the potentially severe complications of this disease.
- All suspected Lyme disease cases should be reported to FCHD.
- For surveillance purposes, the CDC Lyme Disease case definition requires clinical and laboratory evidence of infection (i.e. 2-tier testing with EIA and Westernblot).
 - Necessary clinical evidence includes Lyme-associated signs and symptoms (e.g. erythema migrans rash, arthritis, or Bell's palsy) and date of symptom onset.
 - Necessary laboratory evidence includes positive or equivocal results from ELISA (or IFA) serology and positive Western Blot IgM serology if the blood was drawn within 30 days of onset OR positive Western Blot IgG serology alone if blood was drawn more than 30 days after onset.
 - Note that the CDC case criteria are for surveillance purposes and not necessarily for clinical diagnosis.

FCHD Services

- Conduct human disease surveillance.
- Monitor tick abundance and infection rates through the Health Department's Disease Carrying Insects Program.
- Provide public and healthcare provider outreach to promote the prevention, recognition, and early treatment of Lyme disease.
- Provide tick identification services to residents and healthcare providers. For information regarding the submission of a tick, please visit <http://www.fairfaxcounty.gov/hd/westnile/tick-id.htm> or call 703-246-2300.

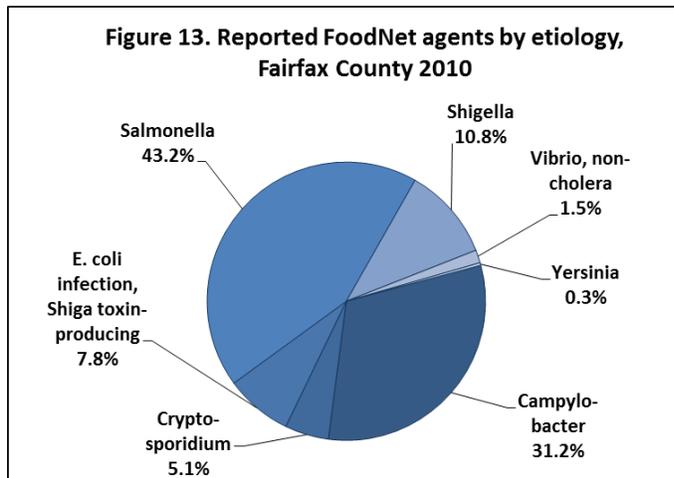
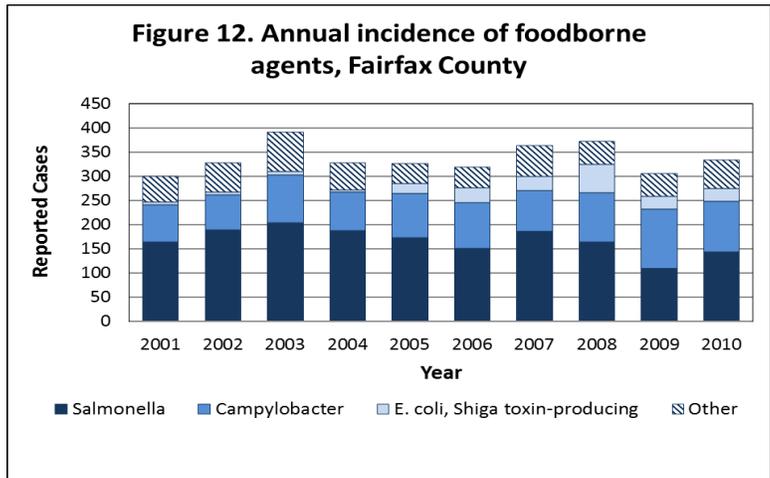
¹² CDC. Surveillance for Lyme disease --- United States, 1992-2006. MMWR 2008; 57(SS10): 1-9.

Foodborne Illness

CDC estimates that each year roughly 1 out of 6 Americans (or 48 million people) become ill, 128,000 are hospitalized, and 3,000 die from foodborne diseases. The most commonly recognized foodborne infections in the U.S. are those caused by *Campylobacter*, *Salmonella*, *E. coli* O157:H7, and noroviruses. Rates of reported foodborne illnesses in the U.S. have remained relatively stable in recent years.¹³

- To better understand trends in foodborne illnesses in the County, FCHD aggregates the reported cases for the 10 CDC FoodNet pathogens

(*Campylobacter*, *Cryptosporidium*, *Cyclospora*, *Listeria*, *Salmonella*, Shiga toxin-producing *Escherichia coli* (STEC) O157, STEC non-O157, *Shigella*, *Vibrio*, and *Yersinia*). Over the last decade, the aggregated incidence of these 10 pathogens has been cyclical and relatively stable (Figure 12).



- Between 2001 and 2010, the incidence of *Campylobacter* and Shiga-toxin producing *Escherichia coli* infections among Fairfax County residents have increased slightly, while rates of *Salmonella* infection have remained relatively stable (Figure 12).
- In 2010, *Salmonella* was the most commonly identified agent of foodborne illness in Fairfax County, followed by *Campylobacter*, *Shigella*, and Shiga-toxin producing *E. coli* (Figure 13).

Clinician Pearls

- Conduct confirmatory laboratory testing for potential cases of foodborne illness, whenever possible. In Virginia, all positive isolates from stool specimens are forwarded by local laboratories to the state laboratory for confirmatory testing and DNA fingerprinting. FCHD uses this information to identify outbreaks of foodborne illness.

FCHD Services

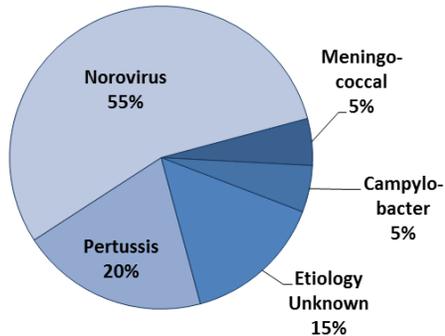
- For each laboratory-confirmed case of foodborne illness, FCHD conducts an investigation to determine possible sources of exposure and to assess for epidemiologic links with previously reported cases.
- The Health Department has educational materials available on proper food handling and handwashing, which are keys to preventing foodborne illness. Posters are also available as part of a broader handwashing campaign for posting in physician offices, restaurants, and public bathrooms (visit <http://www.fairfaxcounty.gov/hd/food/>).

¹³ CDC. Preliminary FoodNet Data on the Incidence of Infection with Pathogens Transmitted Commonly Through Food --- 10 States, 2009. MMWR 2010; 59(14): 418-422.

Outbreak Summary, 2010

For public health purposes, an outbreak is defined as more cases of a particular disease than would normally be expected, either in a specific setting (e.g. school, hospital, business, other facility) or in the community as a whole. For rare diseases or diseases that require significant public health response (e.g. measles, anthrax, smallpox, diphtheria), one case constitutes an outbreak. Outbreaks are not limited to diseases on the reportable disease list and suspected outbreaks of any disease should be immediately reported to FCHD. For each reported outbreak, the CD/Epi Unit: 1) verifies the existence of the outbreak; 2) conducts an investigation to determine the causative agent; 3) facilitates specimen collection and laboratory testing; and 4) recommends and/or implements appropriate infection control measures to limit disease spread. When necessary, enhanced or active surveillance methods are utilized.

Figure 14. Outbreak etiology, Fairfax County 2010

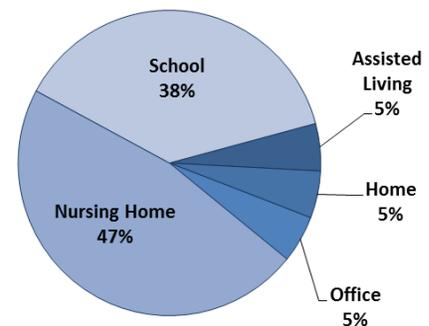


- In 2010, FCHD participated in numerous outbreak investigations that originated in nearby jurisdictions and investigated 20 outbreaks of illness that originated within Fairfax County. The Health Department also conducted over 50 significant contact investigations related to individual cases of disease (e.g. meningococcal disease, pertussis, and hepatitis A).
- Of the 2010 outbreaks originating in Fairfax County, norovirus was identified as the causative agent in 55% and pertussis in 20% (Figure 14). As in previous years, the majority of outbreaks were non-foodborne gastroenteritis outbreaks in long-term care facilities (Figure 15).

Norovirus Outbreaks

- Of the 11 norovirus outbreaks investigated in 2010, 73% occurred in long-term care facilities, and the remainder occurred in schools and other community settings.
- The median number of cases associated with each outbreak was 27 (range 9 – 331 cases) and a total of 645 infected individuals were identified.
- The median length of these outbreaks was 13 days (range 5 – 46 days).
- Infected individuals typically exhibited short durations of illness (24 – 48 hours), incubation periods of 12 – 60 hours, and high incidence of vomiting (>50 percent of infected individuals).

Figure 15. Outbreak location, Fairfax County 2010



Clinician Pearls

- Prompt reporting of all outbreaks of gastroenteritis in long-term care facilities, schools, and other institutions is critical to limit the spread of norovirus.
- Frequent and proper hand washing with soap and water is the key measure for preventing norovirus transmission. Alcohol-based hand sanitizers ($\geq 62\%$ ethanol) may be helpful as an adjunct method of hand hygiene.
- Frequent and thorough cleaning using a chlorine bleach solution, or other commercial product registered with EPA as effective against norovirus, can interrupt the disease transmission cycle during outbreaks.

FCHD Services

If you are uncertain whether a case or cases of disease you have identified constitute an outbreak, please call 703-246-2433 (business hours) or 703-409-8449 (after hours) for assistance.

Fairfax County Health Department

Communicable Disease/Epidemiology Unit

The Fairfax County Communicable Disease/Epidemiology (CD/Epi) Unit conducts human disease surveillance with the goal of reducing morbidity and mortality from communicable diseases. The Unit works in partnership with healthcare providers, the Virginia Department of Health, the Fairfax County Public School System, the Fairfax County Department of Animal Control, laboratories, and others to promptly identify, prevent, control, and monitor diseases in the community.

The CD/Epi Unit is divided into four programmatic areas: Communicable Disease Surveillance and Investigation, HIV/AIDS, Sexually-transmitted diseases (STD), and Tuberculosis.

In addition to disease prevention and control activities, the HIV/AIDS, STD, and Tuberculosis programs provide a wide range of direct client services, including testing, counseling, and referral for HIV/AIDS, as well as the provision of clinical care for clients with STDs and Tuberculosis.

Contact Information

Communicable Disease/Epidemiology Unit

(for all communicable disease reports & guidance during business hours)

703.246.2433 • TTY 711

FAX 703.385.3681

Communicable Disease Hotline

Health care providers should call 703-246-2433 to obtain the Communicable Disease Hotline number for reporting on weekends and evenings.

Fairfax County Public Health Laboratory

703.246.3218 • TTY 711

FAX 703.591.3641

Rabies Program

(for all rabies reports & guidance during business hours)

703.246.2433 • TTY 711

FAX 703.385.3681

Rabies Hotline

Health care providers should call 703-246-2433 to obtain the Rabies Hotline number for reporting on weekends and evenings.

Communicable Disease Reporting

The Code of Virginia requires that suspected or confirmed cases of the following diseases be reported by Fairfax County physicians and other specified individuals. Conditions identified in red require immediate communication to the Fairfax County Health Department by the most rapid means available upon suspicion or confirmation. Other conditions should be reported within three days of suspected or confirmed diagnosis.

To report, call the Communicable Disease/Epidemiology Unit at 703-246-2433. Reports may also be faxed to 703-386-3681 using a Virginia Department of Health Confidential Morbidity Report (Epi-1 Form), available on line at www.fairfaxcounty.gov/hd/comdis/.

Virginia Reportable Disease List

Available at www.vdh.virginia.gov/Epidemiology/documents/pdf/Reportable_Disease_List.pdf.

Acquired immunodeficiency syndrome (AIDS)	MONKEYPOX
Amebiasis	Mumps
I ANTHRAX	MYCOBACTERIAL DISEASES (INCLUDING AFB), (IDENTIFICATION OF ORGANISM) AND DRUG SUSCEPTIBILITY
Arboviral infections (e.g., dengue, EEE, LAC, SLE, WNV)	Ophthalmia neonatorum
BOTULISM	OUTBREAKS, ALL (including but not limited to foodborne, healthcare-associated, occupational, toxic substance-related, and waterborne)
I BRUCELLOSIS	PERTUSSIS
Campylobacteriosis	PLAGUE
Chancroid	POLIOVIRUS INFECTION, INCLUDING POLIOMYELITIS
Chickenpox (Varicella)	PSITTACOSIS
<i>Chlamydia trachomatis</i> infection	Q FEVER
I CHOLERA	RABIES, HUMAN AND ANIMAL
Creutzfeldt-Jakob disease if <55 years of age	Rabies treatment, post-exposure
Cryptosporidiosis	RUBELLA, INCLUDING CONGENITAL RUBELLA SYNDROME
Cyclosporiasis	I Salmonellosis
I DIPHTHERIA	SEVERE ACUTE RESPIRATORY SYNDROME (SARS)
DISEASE CAUSED BY AN AGENT THAT MAY HAVE BEEN USED AS A WEAPON	Shigellosis
Ehrlichiosis/Anaplasmosis	SMALLPOX (VARIOLA)
I <i>Escherichia coli</i> infection, Shiga toxin-producing	Spotted fever rickettsiosis
Giardiasis	<i>Staphylococcus aureus</i> infection, (invasive methicillin-resistant) and (vancomycin-intermediate or vancomycin-resistant)
Gonorrhea	I Streptococcal disease, Group A, invasive or toxic shock
Granuloma inguinale	<i>Streptococcus pneumoniae</i> infection, invasive, in children <5 years of age
I HAEMOPHILUS INFLUENZAE INFECTION, INVASIVE	Syphilis (report PRIMARY and SECONDARY immediately)
Hantavirus pulmonary syndrome	Tetanus
Hemolytic uremic syndrome (HUS)	Toxic substance-related illness
HEPATITIS A	Trichinosis (Trichinellosis)
Hepatitis B (acute and chronic)	I TUBERCULOSIS, ACTIVE DISEASE
Hepatitis C (acute and chronic)	Tuberculosis infection in children <4 years of age
Hepatitis, other acute viral	TULAREMIA
Human immunodeficiency virus (HIV) infection	I TYPHOID/PARATYPHOID FEVER
# Influenza	UNUSUAL OCCURRENCE OF DISEASE OF PUBLIC HEALTH CONCERN
I (report INFLUENZA A, NOVEL VIRUS immediately)	VACCINIA, DISEASE OR ADVERSE EVENT
INFLUENZA-ASSOCIATED DEATHS IN CHILDREN <18 YEARS OF AGE	VIBRIO INFECTION
Lead, elevated blood levels	VIRAL HEMORRHAGIC FEVER
Legionellosis	YELLOW FEVER
Leprosy (Hansen disease)	I Yersiniosis
I Listeriosis	
Lyme disease	
Lymphogranuloma venereum	
Malaria	
MEASLES (RUBEOLA)	
I MENINGOCOCCAL DISEASE	

I These conditions are reportable by directors of laboratories. In addition, these and all other conditions except methicillin-resistant *Staphylococcus aureus* (MRSA), invasive and mycobacterial diseases are reportable by physicians and directors of medical care facilities. Laboratory reports may be by computer-generated printout, Epi-1 form, CDC surveillance form, or upon agreement with VDH, by means of secure electronic transmission.

I A laboratory identifying evidence of these conditions shall notify the local health department of the positive culture and submit the initial isolate to the Virginia Division of Consolidated Laboratory Services (DCLS) or, for tuberculosis, to another lab designated by the Board.

A Laboratories that use a Shiga toxin EIA methodology without a simultaneous culture should forward all positive stool specimens or positive broth cultures to DCLS for confirmation and further characterization.

Physicians and directors of medical care facilities should report influenza by number of cases only (report total number per week and by type of influenza, if known); however, individual cases of influenza A novel virus should be reported immediately by rapid means.

Note: 1. Central line-associated bloodstream infections in adult intensive care units are reportable. Contact the VDH Healthcare-Associated Infections Program at (804) 864-8141 or see 12VAC5-90-370 for more information.

2. Cancers are also reportable. Contact the VDH Virginia Cancer Registry at (804) 864-7866 or see 12VAC5-90-150-180 for more information.