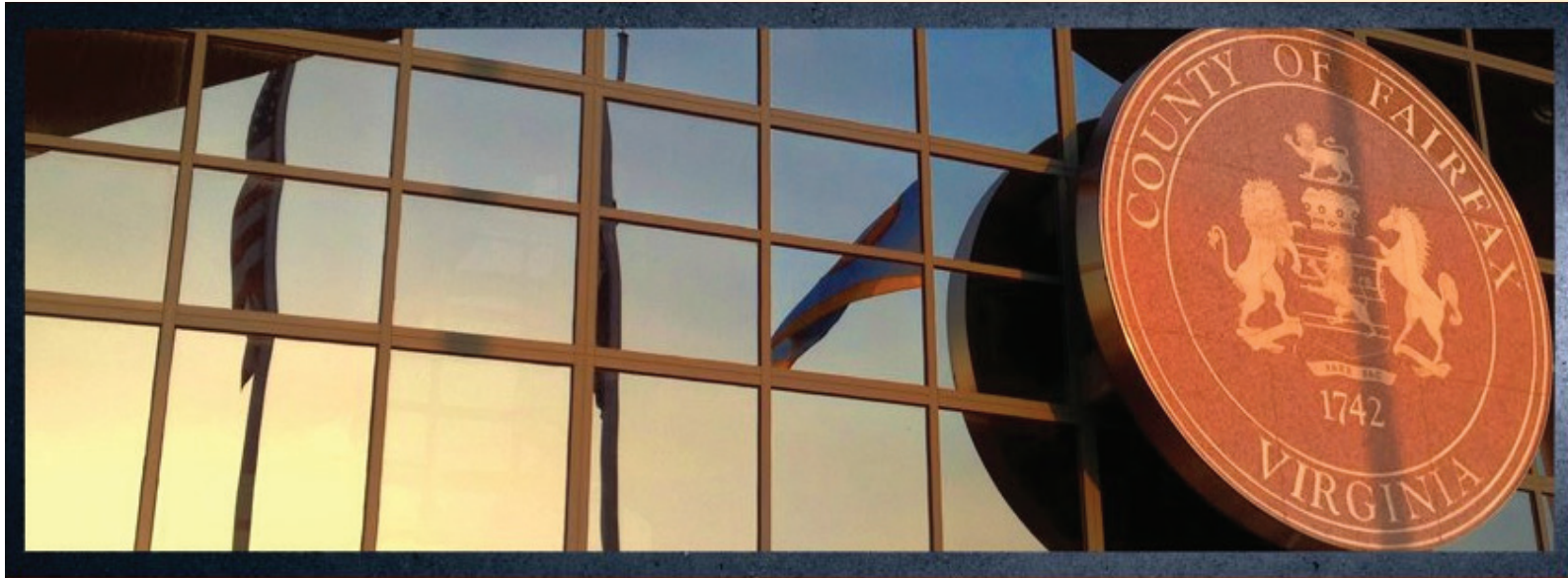


Communicable Disease Summary 2016



FAIRFAX COUNTY HEALTH DEPARTMENT
www.fairfaxcounty.gov/health



Fairfax County Health Department 2016 Communicable Disease Summary



Dear Colleague:

This seventh edition of the Fairfax County Health Department’s Communicable Disease Summary highlights the reportable diseases that most impacted the Fairfax community in 2016. Each year, the Communicable Disease Section of the Division of Epidemiology & Population Health investigates thousands of reports of suspected communicable diseases, in partnership with local public health system partners such as the healthcare community, laboratories, public safety professionals, schools and institutions of higher education, the Virginia Department of Health and other agencies, to promptly identify, prevent, control and monitor diseases in the community. Our local response to the ongoing Zika outbreak demonstrated how our local public health system operates. Together with our partners, we worked together to provide education and promote behaviors that would reduce the risk of infection, and to ensure that at-risk individuals were tested at public health laboratories and that correct follow-up was provided, particularly for Zika positive pregnant females. This collaboration highlights the integral partnership between our healthcare community and the Fairfax County Health Department and the importance of this partnership for our community.

Communicable disease surveillance, prevention, and control are core activities of the Fairfax County Health Department. As a critical partner and contributor to this core public health function, this report is intended to provide you with information and practical guidance that we believe will help mitigate the potential impacts of ongoing and emerging communicable disease threats in our community.

The effectiveness of public health communicable disease investigations often depends on the timeliness of notification. Prompt reporting by clinicians, particularly of suspected outbreaks or unusual occurrences can lead to initiation or refinement of investigations and help limit the spread of illness. Staff are able to conduct timely epidemiologic studies to determine the source of illness or perform contact tracing to identify exposed individuals when time-sensitive interventions such as antibiotic and vaccine prophylaxis are still indicated.

Fighting infectious diseases within our community requires a vigilant and strong local public health system. We thank you for your contributions and look forward to your continued partnership and support.

Sincerely,

Gloria Addo-Ayensu, MD, MPH
Director of Health

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

**Table 1. Reported cases of selected communicable diseases
Fairfax County 2007-2016***

Disease	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	5 year average (2012-2016)
AIDS^	74	69	65	62	51	57	48	53	34	26	44
Amebiasis	9	17	7	5	4	12	9	4	10	11	9
Brucellosis	0	0	0	0	0	0	2	0	1	0	1
Botulism, infant	0	0	1	0	1	0	0	0	0	0	0
Campylobacteriosis	83	101	121	105	93	98	108	118	282	264	174
Chikungunya Fever	0	0	0	1	0	0	2	17	7	6	6
<i>Chlamydia trachomatis</i> infection^	1250	1391	1293	1453	1652	1816	2062	2163	2535	2969	2199
Cholera	0	0	0	1	0	0	0	0	0	1	<1
Cryptosporidiosis	5	13	19	17	24	26	33	29	48	44	36
Cyclosporiasis	0	0	0	0	0	0	0	2	0	4	1
Dengue fever	8	2	0	3	7	7	5	7	8	8	7
<i>Escherichia coli</i> infection, Shiga toxin-producing ‡	30	59	27	27	13	12	13	14	8	30	15
Ehrlichiosis/Anaplasmosis	2	11	1	7	17	6	11	5	8	5	7
Giardiasis	100	78	93	110	52	59	69	61	54	64	61
Gonorrhea^	105	197	170	190	189	219	286	270	326	525	325
<i>Haemophilus influenzae</i> , invasive	2	6	9	8	13	8	11	8	13	13	11
Hansen's Disease (Leprosy)	0	0	0	1	1	0	0	0	0	0	0
Hepatitis A, acute	24	24	10	8	0	14	8	6	12	27	13
Hepatitis B, acute ±	8	10	5	1	4	1	4	1	2	1	2
Hepatitis C, acute	0	0	1	0	1	0	0	0	0	0	0
HIV infection^	121	126	105	113	108	123	127	127	110	117	121
Hemolytic uremic syndrome (HUS)	0	0	0	0	1	0	2	0	0	1	1
Influenza-associated deaths (less than age 18)	0	0	1	0	1	0	0	1	0	0	<1
Lead, elevated blood levels in Children (0-15 years)	16	26	33	31	21	18	19	26	21	114	40
Legionellosis	3	9	7	7	9	5	13	7	15	9	10
Listeriosis	2	2	0	0	4	5	7	3	3	1	4
Lyme disease	208	191	260	256	146	149	260	284	202	214	222
Malaria	21	13	16	19	29	28	16	29	17	27	23
Measles	0	0	0	0	0	0	0	1	1	0	<1
Meningococcal disease (<i>Neisseria meningitidis</i>)	1	1	1	2	2	0	2	0	0	0	<1
Mumps	5	2	0	3	0	2	0	2	4	5	3
Pertussis	13	39	31	33	55	55	33	46	25	16	35
Q fever	0	0	0	1	0	0	1	1	0	0	<1
Rabies, human	0	0	1	0	0	0	0	0	0	0	0
Salmonellosis	187	165	111	147	123	106	127	152	150	144	136
Shigellosis	49	25	26	37	26	16	29	48	33	27	31
Spotted fever rickettsiosis	5	9	6	11	20	26	23	20	14	10	19
<i>Staphylococcus aureus</i> infection, invasive (MRSA)	12	97	52	51	91	96	96	74	105	79	90
Streptococcal disease, Group A, invasive	13	11	14	15	34	14	16	30	25	22	21
<i>Streptococcus pneumoniae</i> , invasive (less than age 5)	1	6	3	8	5	6	6	3	3	6	5
Syphilis, early stage^	30	32	40	38	31	59	63	38	44	89	59
Toxic Substances Investigation v α	10	17	21	26	20	19	24	24	27	112	41
Trichinellosis	0	0	0	0	0	2	0	1	0	0	1
Tuberculosis	108	98	86	87	82	92	59	61	66	67	69
Typhoid fever	10	8	2	6	4	2	6	4	4	4	4
Varicella (Chickenpox)	180	155	64	59	56	87	61	56	49	74	65
<i>Vibrio</i> infection (non-cholera)	5	4	0	5	6	5	3	7	3	1	4
West Nile Virus infection	1	1	1	2	1	8	3	0	8	0	4
Yersiniosis	2	2	1	1	0	0	1	2	3	3	2
Zika disease, congenital	-	-	-	-	-	-	-	-	-	1	1
Zika disease, non-congenital	-	-	-	-	-	-	-	-	-	28	28
Zika infection, non-congenital	-	-	-	-	-	-	-	-	-	9	9
Total	2703	3017	2704	2957	2997	3258	3668	3805	4280	5140	3858

^ Surveillance data are updated retrospectively as reports are received by FCHD and VDH. FCHD only updates the previous three years for case counts in this table.

* 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 more restrictive case definition for *Escherichia coli* infection, Shiga toxin-producing was implemented in 2011

± Includes three case of perinatal Hepatitis B (2009, 2011, and 2013)

α Toxic substances investigations includes arsenic, asbestos, elevated levels of cadmium, elevated levels of carbon monoxide, elevated levels of mercury, and pesticide poisoning.

- Not a reportable illness during the year listed

Executive Summary

Background

The purpose of the annual report is to provide a summary of disease surveillance data for reportable diseases in Fairfax County, to offer insights into select disease trends, and highlight public health and clinical implications. The intended audience is healthcare providers and other stakeholders across the Fairfax Health District. All data and recommendations in this report can be shared externally; however, small changes in some of the case numbers may occur if more information becomes available.

Fairfax County

In 2016, several noteworthy local, national and global events occurred affecting communicable diseases experienced by our population. The most significant was the emergence of **Zika virus** infections as a threat to pregnant women across the Western Hemisphere. In late-2015, Zika outbreaks were recognized in Brazil and subsequently spread throughout Latin America and the Caribbean. While disease is asymptomatic or mild, infection in pregnant women can lead to severe birth defects, including microcephaly and brain dysfunction, identified in about 5-10% of infants. During the year, 38 Zika cases were identified in Fairfax County, including 13 in pregnant women. Infant follow-up through 24 months as part of the U.S. Zika Pregnancy Registry is ongoing to assess impacts. Although case numbers have declined since 2016, consistent with decreased disease in Latin America, educating pregnant women traveling to at-risk areas and appropriately testing symptomatic

pregnant women with possible Zika exposure or asymptomatic women with ongoing exposure remain important.

The number of **hepatitis A** cases reported to the Health Department in 2016 was higher than any other year during the past decade as a result of cases associated with exposure to hepatitis A contaminated frozen strawberries at Tropical Smoothie Cafes. Of 143 cases reported from 9 states, 109 occurred among Virginia residents and 18 in Fairfax County. Vaccination and immunoglobulin were recommended for prevention, as appropriate, and no secondary cases in the County were identified. Hepatitis A is most commonly associated with exposures during travel. Outbreaks occurring in several U.S. cities among the homeless emphasize the risk of spread in settings where sanitation is poor, and outbreaks in Europe among men who have sex with men (MSM) highlight the risk in that community associated with sexual practices.

Consistent with national trends, rates of **sexually transmitted infections (STI)** – syphilis, gonorrhea and chlamydia all increased in Fairfax County in 2016. Most notably, syphilis cases increased from 44 in 2015 to 89 in 2016, a 102% increase. Cases in our county were almost exclusively (99%) among men, a substantially higher proportion than seen in the rest of the state. Gonococcal infections increased by 61% to 525, also with a male predominance (71%) and chlamydia cases increased by 17% compared with 2015. These increasing STI rates emphasize the importance of not only appropriate diagnosis, treatment, and management of partners of symptomatic persons but also of screening high risk groups: all persons aged 13-64 years should be tested

Executive Summary, *continued*

at least once for HIV; all pregnant women should have a documented STI screening; and all MSM should be screened for STI at least annually and more frequently if they have multiple sexual partners.

Tuberculosis cases in Fairfax County remain higher than in the rest of Virginia and the U.S. overall, reflecting the higher proportion of foreign born individuals in the County who are at highest risk for infection and disease. In 2016, sixty-seven cases were reported (rate 5.7 per 100,000). About 94% were foreign-born, most often from Vietnam, India and Philippines. One 2016 Fairfax County case exhibited multi-drug resistance (MDR) and no case had extensively drug resistant (XDR) disease.

Clinician Pearls

In addition to case reporting, healthcare providers are required to report to the Health Department all confirmed or suspect disease outbreaks – whether caused by a reportable infection or another (or unknown) agent. Outbreaks are not defined by a specific

number of cases but by the presence of illness clustered in time or place, with case numbers above expected for that population, location (e.g., school, hospital, business, or other facility), or exposure (e.g., surgery, ingestion of a food or medication). Forty-one outbreaks were investigated in 2016, a substantial increase compared to the thirty-three outbreaks investigated in 2015. Most common outbreak settings included schools, long-term care facilities, and daycares. Gastrointestinal, respiratory and rash illness outbreaks predominated. The Health Department also contributed to several state and national investigations such as the hepatitis A outbreak, described above.

Other communicable diseases, including all those listed in the reportable disease table as well as those described in specific chapters, also have had an impact on our community. Although not highlighted in this summary, information on the number of infections, risk groups, and information on diagnosis and prevention can help providers, in collaboration with the Health Department reduce the disease burden.

Zika

Background

Zika virus is a mosquito-borne flavivirus closely related to dengue virus. In late 2015, Zika virus outbreaks were recognized first in Brazil and subsequently across most of Latin America and the Caribbean. Infection generally is asymptomatic (80%) or clinically mild, characterized by fever, rash, arthralgia and conjunctivitis. Severe consequences may occur with infection of a pregnant woman: fetuses and infants may have microcephaly, brain and/or eye abnormalities, and other consequences of CNS dysfunction such as hearing loss. CDC analyzed outcomes of maternal infection in U.S. territories finding about 5% of infants of an infected mother suffer a Zika-associated defect.¹ Rates are not statistically different for symptomatic and asymptotically infected women or by trimester of maternal infection. While locally acquired infections were identified in South Florida and Texas in 2016, no local transmission in the U.S. currently occurs. Despite substantially lower rates of disease across the Americas, cases among travelers continue to occur and ongoing education of travelers and lab testing, particularly for pregnant women, remain important.

Fairfax Data

- 38 Zika cases were reported to FCHD (see Figure 1):
 - 1 case of congenital Zika virus disease
 - 28 cases of symptomatic non-congenital Zika virus disease: 18 Females (4 pregnant); 10 Males
 - 9 cases of asymptomatic non-congenital Zika virus infection: 9 Females (9 pregnant); 0 Males
- All cases were travel associated; no local transmission was reported in Virginia or Fairfax County.
- 22 mother/infant pairs have been enrolled in the US Zika pregnancy registry since its start (this includes cases that have been transferred from other jurisdictions and those without confirmatory testing). Case exposures occurred primarily in Central America and also included the Caribbean, Mexico and South America (See Figure 2).
- In 2016, 1077 on-line requests for Zika laboratory testing at the Virginia Department of Health were submitted through the Fairfax County Health Department (note that testing also is commercially available)

Clinician Pearls

- Zika virus cases peaked in Fairfax County, the U.S. and the Western Hemisphere in 2016 and have since declined substantially. Nevertheless, it remains an ongoing health threat for pregnant women and their infants, and clinicians need to continue educating women who are or may become pregnant about prevention, and to test as appropriate.
 - CDC recommends Zika virus testing for:
 - Symptomatic pregnant women with possible Zika virus exposure*
 - Asymptomatic pregnant women with **ongoing** possible Zika virus exposure*
 - Pregnant women with possible Zika virus exposure* who have a fetus with prenatal ultrasound findings consistent with congenital Zika virus infection
 - Anyone with possible Zika virus exposure* who has or recently experienced symptoms of Zika.
 - Travel screening questions should be asked at every prenatal visit to identify possible Zika virus exposure.
 - Zika virus testing is **not** recommended for non-pregnant asymptomatic individuals OR for preconception screening
 - Local and State health departments are continuing to collect medical information on mothers and infants with Zika exposure. Information is shared with the CDC's US Zika Pregnancy Registry to analyze health impacts and update clinical guidance for providers.²
- *Possible exposure includes living in, traveling to, or having unprotected sex with someone who lives in or traveled to an area with risk of Zika.

Figure 1. Zika cases by age and gender, Fairfax Health District 2016

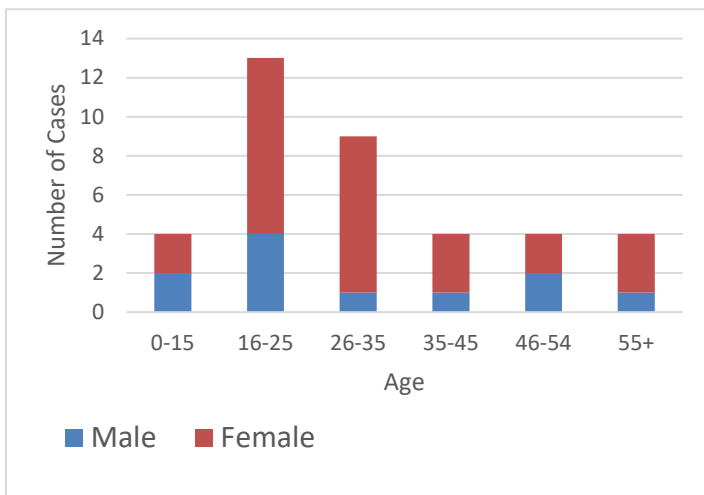
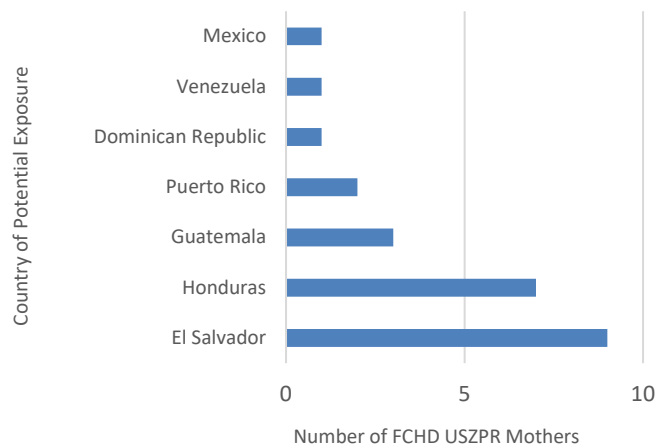


Figure 2. US Zika Pregnancy Registry cases by country of potential Zika exposure[^], Fairfax Health District 2016



[^] 1 case cited 3 countries as potential Zika exposure

¹Shapiro-Mendoza CK, Rice ME, Galang RR, et al. Pregnancy outcomes after maternal Zika virus infection during pregnancy – U.S. territories, January 1, 2016 – April 25, 2017. *Morbidity and Mortality Weekly Report* 2017;66:615-21

²CDC. (updated: 2018, January 23). Research and tracking: US Zika and pregnancy registry. Retrieved from <https://www.cdc.gov/pregnancy/zika/research/index.html>

Hepatitis A

Background

Acute hepatitis A was one of the most frequently reported vaccine-preventable diseases in the pre-vaccine era. Since the licensure of the vaccine in 1995, rates of hepatitis A rates have declined significantly.¹ Risk factors for hepatitis A infection include exposure to contaminated food or water – often during international travel, and fecal-oral transmission often among high-risk groups such as men who have sex with men (MSM).² A large outbreak of hepatitis A infection in San Diego, California, among the homeless population highlights the risk among persons for whom sanitation and hygiene and particularly challenging. Multistate outbreaks have occurred associated with contaminated food products, including pomegranate arils from Turkey (2013) and frozen scallops from the Philippines (2016).

Fairfax Data

- Twenty-seven acute hepatitis A cases were reported to FCHD during 2016. Hepatitis A rates in Fairfax County have been consistently higher than the rate seen across the rest of Virginia over the past ten years (Figure 1).
- The most common risk factors identified for 2016 cases include consumption of a contaminated food product and travel (Figure 2).
- In 2016 a multistate outbreak of foodborne hepatitis A occurred, associated with frozen imported strawberries used at Tropical Smoothie Cafés. 143 people with hepatitis A were reported from nine states, with 109 cases occurring in Virginia and 18 cases in Fairfax. FCHD investigated each Fairfax case identifying close contacts, including at a local restaurant with an infected food handler. Vaccination or immune globulin was recommended for prevention, as appropriate. No secondary cases were identified.

Clinician Pearls

- Hepatitis A is diagnosed by a combination of non-specific clinical symptoms, jaundice or elevated transaminases, and a positive IgM anti-HAV test. To improve the predictive value of a positive lab test, clinicians should limit testing to persons with compatible clinical findings and those who have been exposed to settings where HAV transmission is suspected.³
- Hepatitis A vaccination decreases risk for individuals and the population. ACIP recommends hepatitis A vaccination for children 12-23 months old and other high risk groups (see <http://www.cdc.gov/mmwr/PDF/rr/rr5507.pdf>).⁴
- Since June 2016, a large hepatitis A outbreak primarily affecting MSM has been identified in 22 European countries with cases spilling over to the U.S. Providers should be diligent in vaccinating MSM (a group routinely recommended for vaccination) and having a high index of suspicion for unvaccinated MSM with compatible disease.
- Hepatitis A outbreaks occurring among homeless and drug using persons have been reported in several U.S. cities. Vaccinating homeless populations may reduce risk of an outbreak in Fairfax County.
- Promptly report suspected and confirmed hepatitis A cases to FCHD. Reporting enables investigation to ensure that patients, particularly those in occupations such as food handlers, do not transmit infection, as well as facilitating timely prophylaxis of exposed contacts. Investigation may also identify a foodborne source contributing to investigation and prevention, potentially affecting residents of multiple states.

Figure 1. Hepatitis A incidence rates by year, Fairfax Health District and VA 2006-2016

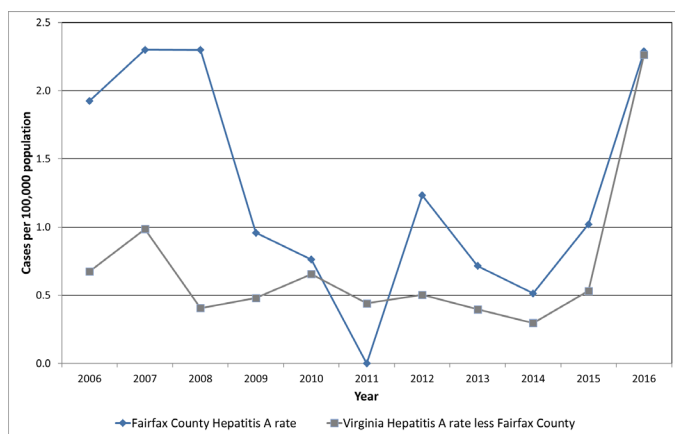
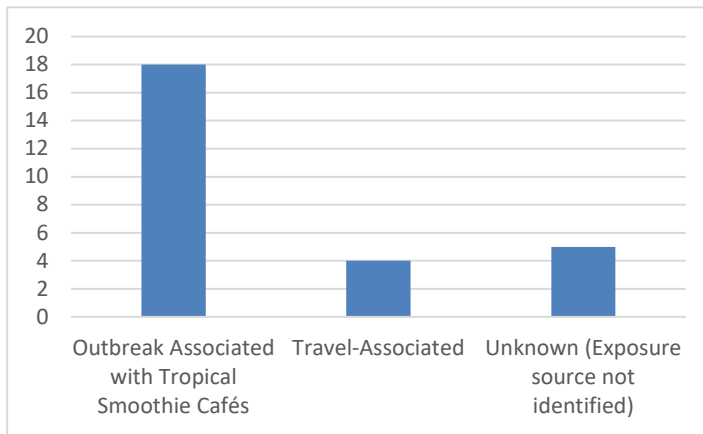


Figure 2. Hepatitis A cases by suspected exposure source, Fairfax Health District 2016



¹ Red Book: 2015 Report of the Committee on Infectious Disease. (30th edition). American Academy of Pediatrics. 2015.

² CDC. (updated: 2009, June 2). Guidelines for Viral Hepatitis Surveillance and Case Management. Retrieved from <http://www.cdc.gov/hepatitis/Statistics/SurveillanceGuidelines.htm#hepa>.

³ CDC. (updated: 2015, October 19). Surveillance for Viral Hepatitis – United States, 2013. Retrieved from <http://www.cdc.gov/hepatitis/Statistics/2013Surveillance/Commentary.htm#hepA>.

⁴ CDC. Prevention of hepatitis A through active or passive immunization. Recommendations of the ACIP. MMWR 2006;55(No. RR-7).

Measles

Background

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 continues¹. 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. Nationally, the number of measles cases has been decreasing since 2014, with 667 cases reported in 2014, 188 cases reported in 2015, and 86 cases reported in 2016. The 2014 large outbreak in an unvaccinated Amish community in Ohio and the 2015 amusement park outbreak in California highlight that significant outbreaks can still occur in the U.S. in under-vaccinated communities, given the extremely infectious nature of measles².

Fairfax Data

- No measles cases were identified in Fairfax County in 2016.
- FCHD had two cases of measles reported since 2011, one each reported in 2014 and 2015.
- Since 2011, ten cases of measles have been reported to VDH throughout Virginia. Five of those cases (50%) resided in Northern VA. Of the ten cases reported in VA since 2011, 60% (n=6) were imported cases, while four were thought to be caused by secondary transmission from a previous case.
- Ninety percent of the ten Virginia cases were unvaccinated or had an unknown vaccine history; only one case was less than 1 year of age.

Clinician Pearls

- Immediately report suspected cases of measles (i.e. patients with a febrile rash and clinically compatible symptoms, such as cough, coryza, and/or conjunctivitis) to FCHD. FCHD can assist with expedited confirmatory laboratory testing through the Division of Consolidated Laboratory Services (DCLS).
- Ensure that ALL employees in healthcare facilities have documentation of immunity for measles (2 vaccines or positive titers).
- To help prevent measles transmission within your facility, FCHD recommends the following for suspect measles patients:
 - 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;
 - 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;
 - 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;
- All patients traveling internationally should be fully vaccinated against measles.
 - Adults should have 2 doses of measles vaccine prior to travel;
 - Children 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

The Public Health Impact of One Case of Measles

In the fall of 2015, one case of imported measles visited multiple locations in Fairfax County while they were infectious. To prevent or limit the spread of disease in our community, FCHD's identified, investigated and made prevention recommendations for all potentially exposed persons. The summary of this investigation is below:

- Persons in 8 different building were considered exposed, including multiple medical facilities and two retail stores.
- FCHD attempted to contact over 2,000 exposed persons in a three-day period, with over 1,600 exposed persons contacted and given public health guidance.
- Given the case was in multiple buildings in the exposed hospital, every employee and hospitalized patient was assessed to assure immune status via titers and/or checking vaccination records.
- Over 5 percent (n=83) individuals assessed were non-immune and furloughed from work/school for 21-days, post-exposure.

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

² CDC. (January 2018). Measles Cases and Outbreaks. Retrieved January 21, 2017 from <https://www.cdc.gov/measles/cases-outbreaks.html>.

Influenza

Background

The 2016-17 influenza season in the United States started earlier than the previous, 2015-2016 influenza season. Nationally, influenza activity peaked in mid-February and Fairfax Health District influenza like illness (ILI) activity peaked the week ending February 25, 2017 (MMWR Week 8). VDH reported widespread flu activity for 16 consecutive weeks (widespread flu activity is defined as outbreaks of influenza or increases in ILI cases and recent laboratory-confirmed influenza in at least half the regions of the state). Influenza A(H3N2) viruses predominated through mid-March and were predominant overall for the season; influenza B viruses were most commonly reported from late March through May (Figure 1). Data collected through the U.S. Influenza Vaccine Effectiveness Network during November 28, 2016–April 14, 2017, indicated that influenza vaccination reduced the overall risk for influenza-associated medical visits by 42% (95% CI = 35%–48%).¹

Fairfax Data

- FCHD monitoring of emergency department and urgent care center visits showed that at peak, 9% of all visits were for patients presenting with ILI. (Figure 1)
- Local data indicated that influenza epidemiology in Fairfax and Virginia during the 2016-17 influenza season mirrored that seen at the national level in relation to timing and viral types (Figure 2).
- Ten influenza like illness outbreaks were investigated during the 2016-2017 season:
 - 3 were confirmed as influenza A outbreaks (two in long-term care facilities and one in a school)
 - 1 was confirmed as an influenza B outbreak (in a school).
 - 6 were suspected influenza (etiology not confirmed; five in schools and one in a child care center).
- No pediatric deaths were reported in the Fairfax Health District.

Clinician Pearls

- The Advisory Committee on Immunization Practices recommends routine influenza vaccination for all persons aged 6 months and older. Vaccination efforts should continue throughout the influenza season as the duration of the influenza season varies and disease activity might not peak until February or March.
- All healthcare facilities should have a comprehensive, evidence-based healthcare worker immunization policy for influenza. This policy should include all employees and volunteers who may come into contact (within 6 feet) with patients. Any unvaccinated personnel should take measures to reduce the risk of transmitting influenza to a patient such as wearing a facemask throughout the influenza season. To assist in ensuring appropriate documentation of immunity, a one-page summary of the Advisory Committee on Immunization Practices recommendations for healthcare worker immunization is available at <http://www.immunize.org/catg.d/p2017.pdf>.
- For the 2016-2017 influenza season CDC's Advisory Committee on Immunization Practices (ACIP) recommended **not to use** live attenuated influenza vaccine (the "nasal spray" flu vaccine). Current recommendations can be checked annually.
- Influenza-associated deaths in children <18 years of age and all suspected institutional outbreaks of influenza should be immediately reported to the FCHD.

Figure 1: Comparison of 2014-2015, 2015-2016, and 2016-2017 Influenza Seasons by Percentage of Visits for Influenza-like Illness (ILI) Reported by Fairfax Emergency Departments.

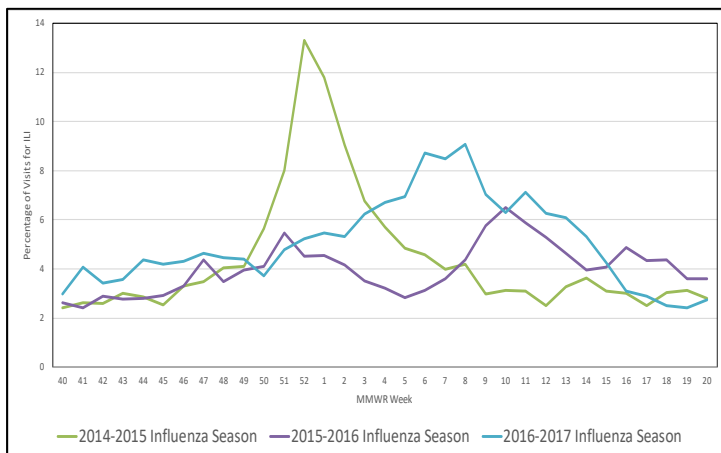
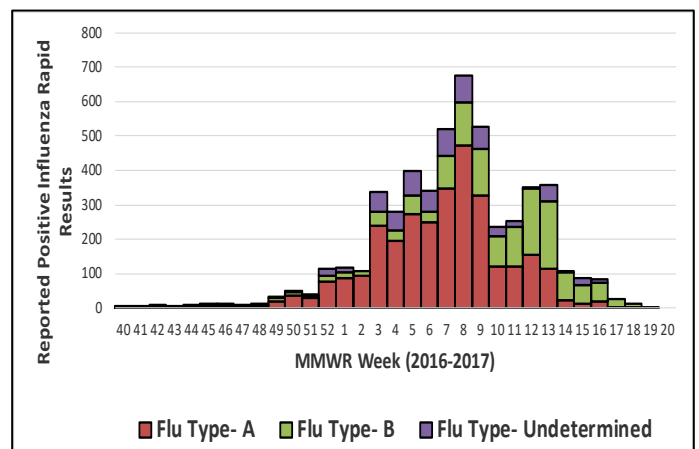


Figure 2: Positive rapid results reported to FCHD by influenza type, Fairfax County, 2016-2017



¹ CDC. (2017 June 30). Update: Influenza Activity in the United States During the 2016–17 Season and Composition of the 2017–18 Influenza Vaccine. MMWR 2017;66(25):668-6

Tuberculosis

Background

In 2016, the number of reported U.S. tuberculosis (TB) cases decreased by 2.9% (from 9,547 to 9,272, marking the lowest recorded number of annual cases). Similarly, a 3.6% decline in the U.S. TB incidence rate to 2.9 cases per 100,000 persons was observed. As in previous years, the majority (68.5%) of U.S. TB cases continued to be among non-U.S.-born persons. Nationally, about 86% of genotyped TB cases reported during 2015-2016 were attributed to reactivated latent TB infection.¹ A national goal has been established to eliminate TB in the U.S., defined as less than 1 case per 1 million people. Achieving this goal will require detection and treatment of latent TB infection (LTBI) in addition to continued detection and effective management of TB disease.

Fairfax Data

- In 2016, TB incidence in the Fairfax Health District was 5.7 cases per 100,000 persons, three times higher than the rate for the rest of Virginia (1.9 per 100,000), and about double the U.S. rate (2.9 per 100,000).
- As is observed for the nation, non-U.S.-born individuals comprise the majority of local TB cases. Approximately 90% of incident TB cases identified in the Fairfax Health District between 2012 and 2016 were among non-U.S.-born persons. The most common countries of birth, for non-U.S.-born TB cases reported during this 5-year period, were Vietnam (14.8%), India (11.3%), Ethiopia (7.8%), Republic of Korea (7.5%), and Philippines (5.5%) (Table 1). Locations of cases in the county are consistent with areas where more non-U.S.-born persons are likely to reside (Figure 1).
- Of the non-U.S.-born TB cases reported by the Fairfax Health District in 2016, 56% occurred among individuals residing in the U.S. for 10 or more years, and 29% were among individuals residing in the U.S. for 20 or more years.
- In 2016, one Fairfax Health District TB case exhibited multi-drug resistance (MDR), defined as no previous history of TB and resistance to at least isoniazid and rifampin. During 2007-2016, a total of 10 MDR-TB cases were identified in the Health District. No extensively drug-resistant (XDR) TB cases were reported by the Fairfax Health District in 2016.
- Four cases of TB/HIV co-infection were reported between 2015 and 2016 in the Fairfax Health District.

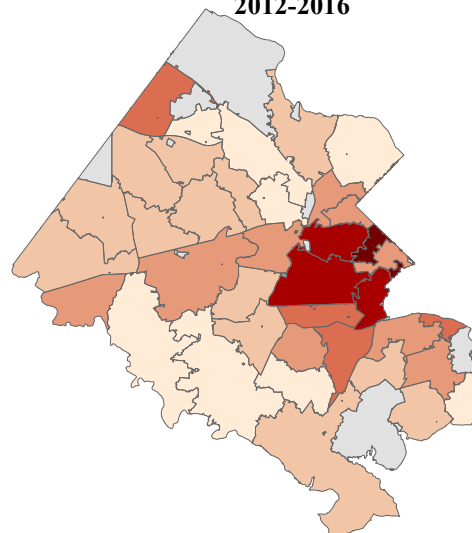
Clinician Pearls

- The QuantiFERON®-TB Gold In-Tube (QFT-GIT) test result is not affected by prior BCG vaccination.
- Consider TB in the differential diagnosis for individuals presenting with compatible signs and symptoms (e.g., prolonged cough, fever, night sweats, or weight loss), particularly in non-U.S.-born persons.
- Suspect TB cases can be referred to the Fairfax County Health Department (FCHD) for evaluation to determine if they have active TB disease. All patients who are started on TB treatment should be reported to the Health Department, regardless of whether TB has yet been confirmed. **Report all suspect TB cases, and persons treated for TB, to FCHD by calling 703-246-2433.**
- Clinicians should develop and implement a strategy to screen persons in high risk groups for LTBI. Active TB disease should be excluded prior to starting treatment for LTBI. FCHD can consult with providers regarding LTBI detection and management.

Table 1. Tuberculosis cases by country of birth, Fairfax Health District 2012-2016

Country	No. of cases	Percent
Vietnam	51	14.8%
India	39	11.3%
Ethiopia	27	7.8%
Republic of Korea	26	7.5%
United States	20	5.8%
Philippines	19	5.5%
Remaining 38 countries	163	47.2%

Figure 1. Rate (per 100,000 population) of reported TB cases by zip code, Fairfax Health District 2012-2016



¹ CDC. *Reported Tuberculosis in the United States, 2016*. Atlanta, GA: US Department of Health and Human Services, CDC; 2017.

Human Immunodeficiency Virus

Background

In the United States from 2011 to 2015, the annual estimated number of Human Immunodeficiency Virus (HIV) infections decreased. In 2016, the estimated rate of newly diagnosed HIV infections was 12.3 per 100,000 population. Specific demographic groups continue to be disproportionately affected by HIV and AIDS at the national level, with persons identifying as black, non-Hispanic facing the highest burden of disease, followed by Hispanics. By risk group, men who have sex with men (MSM) are the most severely affected. As treatment and healthcare access has improved, an increase in the number of individuals living with HIV has been observed. In 2016, HIV infections progressing to AIDS was 5.6 per 100,000 population. At the end of 2015, the estimated national prevalence rate of diagnosed HIV infection was 303.5 per 100,000 population.

Fairfax Data

- From 2010 to 2015, the incidence rate of newly identified HIV infections decreased from 12.4 to 7.8 cases per 100,000 population.
- In 2016, 117 newly-diagnosed HIV cases were identified in Fairfax County, equivalent to a rate of 10.3 per 100,000 population. This was less than the 2016 annual Virginia statewide incidence rate of 11.0 per 100,000 population.¹³
- The 2016 Fairfax County HIV incidence rate for persons identifying as black, non-Hispanic was 9 times greater than that seen among residents identifying as white, non-Hispanic. Hispanic residents were also disproportionately affected, with an incidence rate more than 3.5 times that seen among white, non-Hispanic residents (Figure 1).
- In 2016, the most commonly reported risk group among newly identified HIV cases in Fairfax County was men who have sex with men (MSM) (38%) (Figure 2).
- At the end of 2016, 2,817 Fairfax County residents were living with HIV or AIDS, equivalent to a prevalence rate of 249 per 100,000 population; a 4% rate increase from 2015.
 - Among the Fairfax residents living with HIV at the end of 2016, 44% were black non-Hispanic, 33% were white non-Hispanic, and 16% were Hispanic. The most frequently identified transmission risk among individuals living with HIV was MSM (50%).
 - Among persons living with HIV, 48% had been diagnosed with AIDS by the end of 2016.

Clinician Pearls

- The Centers for Disease Control and Prevention (CDC) recommends a onetime opt-out approach HIV screening for all patients aged 13-64 years regardless of risks for infection. Additional risk based screenings are recommended.
- All pregnant women should be tested for HIV infection as early during pregnancy as possible. A second test during the third trimester, preferably at <36 weeks gestation, should be considered for all pregnant women and is recommended for women known to be at high risk for acquiring HIV.²
- The CDC issued new STD Guidelines in June 2015 and continues to recommend HIV, syphilis, gonorrhea, and chlamydia screening tests for sexually active MSM, including those with HIV infection (see specific screening guidelines at <http://www.cdc.gov/std/tg2015/>). To detect chronic Hepatitis B infection, all MSM should be tested for HBsAG. Serological screening for Hepatitis C (HCV) is recommended at initial evaluation of persons with newly diagnosed HIV infection. MSM with HIV infection should be screened at least yearly using HCV antibody assays followed by HCV RNA testing for those with a positive antibody result.
- Confidential HIV testing is available at each of the five Fairfax County Health Department District Offices. Harm reduction counseling before and after testing is included. Appointments can be made by calling 703-246-2411.

Figure 1. HIV incidence rates, by race/ethnicity, 2010-2016.

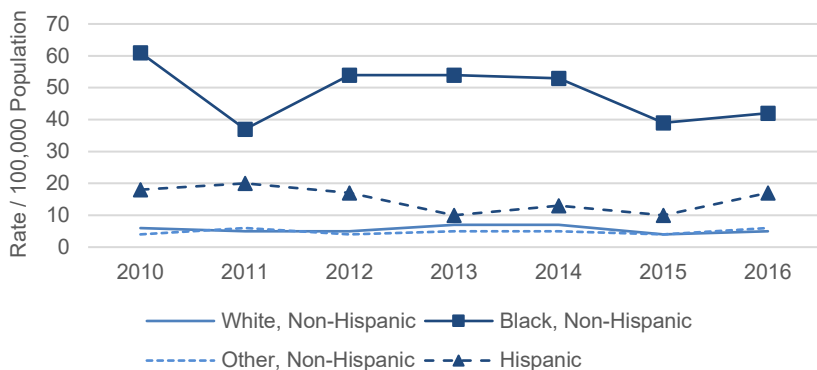
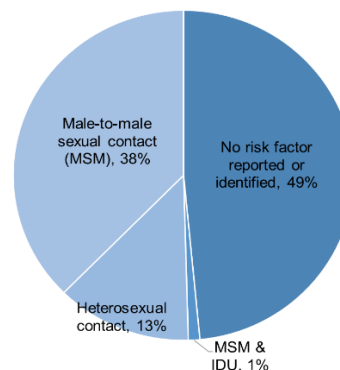


Figure 2. Risk factors reported among newly diagnosed HIV cases, 2016 (n=117).



¹ CDC. HIV Surveillance Report, 2016; vol. 28. <https://www.cdc.gov/hiv/pdf/library/reports/surveillance/cdc-hiv-surveillance-report-2016-vol-28.pdf> Published November 2017.

² CDC. Sexually Transmitted Diseases Treatment Guidelines, 2015. MMWR 2015; 64 (No. RR-3).

Sexually Transmitted Infections

Background

The Centers for Disease Control and Prevention (CDC) estimates that at any time a total of 110 million sexually transmitted infections (STI) are present in the United States. This estimate includes 20 million new STIs each year that cost the healthcare system nearly \$16 billion in direct medical costs alone. Persons aged 15-24 years represent 50% of all new cases. Each infection is a potential threat to an individual's immediate and long-term health, especially if not diagnosed and treated early. The most commonly reported sexually transmitted diseases in the U.S. in 2016 were chlamydia with 1,598,354 cases and gonorrhea with 468,514 cases. There were 27,814 total early syphilis cases reported in 2016.¹

Fairfax Data

- The 5-year incidence rate trend has been increasing for chlamydia, gonorrhea, and syphilis across Virginia.¹⁶
- In Fairfax County, the rates of STIs have been increasing, but are below the overall rates for Virginia (Table 1).
- In 2016, 2,969 cases of chlamydia were identified in Fairfax County; a 17% increase from 2015. Chlamydia cases in Fairfax County follow statewide and national demographic trends with most persons identified to be infected being of younger age (88% of cases aged 15-35 years) and female (63%). Individual chlamydia cases are not investigated in Virginia.
- In 2016, 525 cases of gonorrhea were identified in Fairfax County; a 61% increase from 2015. Among persons for whom demographic data were reported, gonorrhea cases are more frequently identified among persons aged 15-35 years (76%) and males (71%). Only high priority (minor, pregnant, repeat infections, or co-infection with human immunodeficiency virus or early syphilis) gonorrhea cases are investigated in Virginia.
- In 2016, 89 cases of early syphilis were identified in Fairfax County; a 102% increase from 2015. All early syphilis infections are investigated in Virginia. The dramatic increase in syphilis cases in Fairfax County in 2016 was not a result of an identified outbreak, but reflects statewide and national trends of increasing incidence. In Fairfax County, identified syphilis infections are almost exclusively among males (99%). This distribution is different from other areas of Virginia where a higher proportion of cases are female (14-22%).²² From 2015 to 2016, the incidence of syphilis increased across all age groups; however, the largest increase was among persons aged 25-34 years (144%). In 2016, 66% of early syphilis cases identified as being among the men who have sex with men (MSM) risk group.

Clinician Pearls

Screening

- As infections can be asymptomatic, laboratory screening for STIs needs to be a standard of care for all patients. Some of the population specific guidance on STI screening includes:
 - All patients aged 13-64 years should be tested at least once for HIV.
 - All pregnant women should have a documented STI screening. Additional screenings should occur throughout a pregnancy for at risk populations.
 - All sexually active, gay, bisexual, and other men who have sex with men (MSM) should have an annual STI screening. MSM who have multiple sexual partners should have more frequent STI screenings (every 3 to 6 months).
- Laboratory tests remain imperfect for the identification of a current syphilis infection. A full medical history needs to be considered when interpreting laboratory results and, if needed, appropriate treatment.
 - Fairfax County Health Department healthcare professionals are available for consultation during normal business hours at 703-246-2411.

Treatment

- In June 2015, the CDC updated Sexual Transmitted Diseases Treatment Guidelines² to assist healthcare providers in the appropriate management and treatment of sexually transmitted infections. The full guidelines can be found at <http://www.cdc.gov/std/tg2015/default.htm>

Table 1. Rate per 100,000 population and percentage of cases of reportable sexually transmitted diseases, Fairfax County, 2016.

	Rate per 100,000 population		Percentage in Fairfax County								
			Gender		Age at Diagnosis (years)						
	Virginia	Fairfax County	Male	Female	<15	15-24	25-34	35-44	45-54	55-64	65+
Chlamydia	462.6	252.8	37	63	0	58	30	8	3	1	0
Gonorrhea	129.2	44.7	71	28	0	42	34	14	8	2	1
TES	12.0	7.6	99	1	0	19	44	18	15	3	1

Note: At the time of reporting, demographics by race / ethnicity were not available from the Virginia Department of Health.

¹ CDC. Sexually Transmitted Disease Surveillance 2016. Atlanta: U.S. Department of Health and Human Services; 2016. Retrieved from <https://www.cdc.gov/std/stats16/default.htm>.

² CDC. Sexually transmitted diseases treatment guidelines, 2015. MMWR 2015; 64 (1-137). Retrieved from <https://www.cdc.gov/mmwr/preview/mmwrhtml/rr6403a1.htm>.

Rabies

Background

As a result of improved canine vaccination programs and stray animal control, a marked decrease in domestic animal rabies cases in the United States occurred after World War II. An estimated 16,000–39,000 persons are exposed to a potentially rabid animal and receive rabies virus post-exposure prophylaxis (PEP) each year in the United States. Administration of rabies PEP is a medical urgency, not a medical emergency, but decisions must not be delayed.¹ **Prophylaxis is indicated for 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.**

Fairfax Data

- **Rabies is endemic in Fairfax County's wildlife.**
- In 2016, the Fairfax County Health Department (FCHD) Public Health Laboratory conducted direct fluorescent antibody testing for rabies virus on 289 animals of which 33 (11%) tested positive for rabies (Figure 1).
 - Among wild animals testing positive for rabies the most common species were raccoons (55%), foxes (15%), skunks (12%), and bats (6%). Among the 60 bats tested for rabies, only 2 (3%) were positive for rabies.
 - In 2016, while no dogs tested positive for rabies, three feral cats did test positive.
- In 2016, 1,998 human exposures to animals were reported to the Fairfax County Animal Protection Police (APP).
 - For more than 95% of these exposures, APP or FCHD were able to locate the offending animal for quarantine or testing, eliminating the need for rabies PEP for the exposed individuals.
- Rabies PEP was initiated in a total of 234 Fairfax County residents in 2016.
 - Among these patients, 78 (33%) did not have an exposure history that met the Advisory Committee on Immunization Practices' criteria and should not have received rabies PEP.
- No human rabies cases were identified in Fairfax County in 2016. The most recent human case of rabies in Fairfax County was a fatal internationally-acquired canine rabies infection that occurred in 2009.

Clinician Pearls

- All exposures to a potentially rabid animal must be reported immediately to the Fairfax County Animal Protection Police (APP) at 703-691-2131 (Fax: 703-830-7806). APP staff can assist with locating the exposing animal.
- Accurate rabies exposure assessment and correct administration of post-exposure prophylaxis (PEP) are critical for preventing disease and ensuring that vaccine remains available for truly exposed individuals.
- Only a small percentage of individuals exposed to a potentially rabid animal will require PEP. If the offending animal can be located, PEP administration should be delayed pending the outcome of confinement or testing.
- FCHD rabies staff are available for consultation regarding rabies exposure assessment and PEP administration at 703-246-2433 (business hours) or 571-274-2296 (evenings, weekends, and holidays).
- FCHD investigations identified and corrected 80 errors in rabies PEP administration in 2015 (Figure 8). An online course with CME credits is available to provide further information about rabies exposure assessment and PEP administration at <https://phpa.health.maryland.gov/training/SitePages/rabies.aspx>.
- PEP administration must be reported to FCHD using a Virginia Department of Health Confidential Morbidity Report (Epi-1 form) or by calling 703-246-2433.

Figure 1. Rabies animal testing results, Fairfax County, 2016 (n=289).

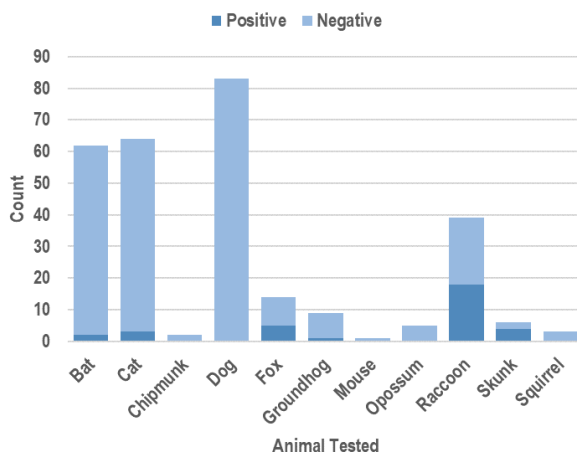
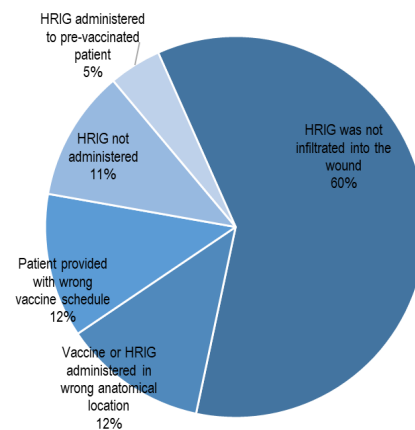


Figure 2. Errors made in rabies post-expose prophylaxis, Fairfax County, 2016 (n= 80).



¹ Centers for Disease Control and Prevention. Human Rabies Prevention- United States, 2008. Recommendations of the Advisory Committee on Immunization Practices. Retrieved from <https://www.cdc.gov/mmwr/pdf/rr/rr57e507.pdf>

Tickborne Diseases

Background

Over the last two decades in the United States, the incidence of tickborne diseases has steadily increased due to geographical range expansion and population increase of ticks, improved diagnostics and clinical recognition of infection, and lack of effective prevention strategies. The epidemiology of specific tickborne diseases reflect the geographic distribution and seasonal activity of the transmitting tick species.¹ Therefore, tickborne disease risk is highly localized to the point that neighboring jurisdictions can experience substantial differences in disease burden. In Virginia, as well as the United States, the most commonly reported tickborne illness is Lyme disease, followed distantly by spotted fever group rickettsiosis, ehrlichiosis, and anaplasmosis. In 2016, over 35,000 people were diagnosed with Lyme disease in the United States.² From 2008 to 2016, the incidence of Lyme disease has increased from 12.1 to 16.1 cases per 100,000 population in Virginia.

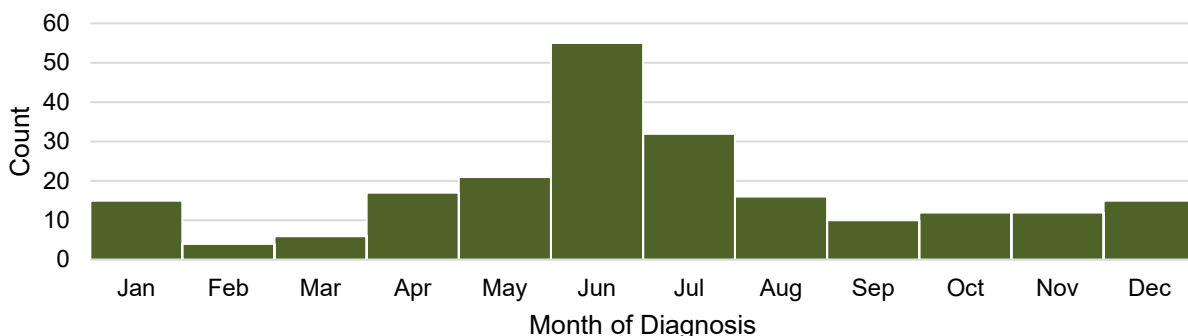
Fairfax Data

- Tickborne disease cases are reported throughout Fairfax County therefore all Fairfax County residents should be considered at risk of infection.
- In 2016, 215 cases of Lyme disease were reported in Fairfax County, a 6% increase from 2015. Lyme disease cases ranged in age from 3 to 87 years with a median of 38 years; 50% were male. Cases of Lyme disease most frequently reported onset of illness in June and July (41%) (Figure 1).
- The incidence of spotted-fever group rickettsiosis (including Rocky Mountain spotted fever) in Fairfax County has increased over the past decade, but has remained consistently lower than the rate for the rest of Virginia. In 2016, 10 cases of Spotted Fever Rickettsiosis were reported in Fairfax County, a 29% decrease from 2015. Cases ranged in age from 18 to 80 years with a median of 38 years and 60% were female.
- The incidence of ehrlichiosis and anaplasmosis in Fairfax County has fluctuated over the last decade but remained near or below the rate for the rest of Virginia. In 2016, 5 cases of ehrlichiosis/anaplasma were reported in Fairfax County, compared with 8 in 2015. Cases ranged in age from 15 to 85 years with a median of 55 years and 60% were female.
- The Fairfax County Health Department – Disease Carrying Insects Program captures ticks for surveillance purposes. In 2016, 3,492 ticks were captured, including species of Lone Star (87%), Blacklegged/Deer (8%), American Dog (5%), and Gulf Coast (<1%). Among the 77 (27%) Blacklegged/Deer ticks submitted for testing, 8 (10%) tested positive for the bacterium *B. burgdorferi*, the causative pathogen for Lyme disease.

Clinician Pearls

- Avoiding tick bites and promptly removing attached ticks remain the best disease prevention strategies.
- When prevention fails, early recognition and prompt treatment of patients with tickborne diseases can help avoid potentially severe complications. The Centers for Disease Control and Prevention (CDC) provides guidance for clinicians in [Tickborne Diseases of the United States-A Reference Manual for Health Care Providers](#).
- Maintain a high index of suspicion for Lyme and other tickborne diseases in all patients presenting with clinically compatible signs and symptoms. Approximately 70 to 80 percent of Lyme disease infected persons will present with an erythema migrans rash.
- Laboratory testing is an important component in diagnosing a tickborne disease. However, Lyme disease patients tested within the first few weeks of illness may not have developed antibodies and may test negative.
- All suspected and confirmed Lyme disease cases should be reported to the Fairfax County Health Department.
- For surveillance purposes, the Lyme Disease case definition requires clinical and laboratory evidence of infection.
 - Clinical evidence includes signs and symptoms of erythema migrans rash, arthritis, or Bell's palsy.
 - 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 illness onset OR positive Western Blot IgG serology alone if blood was drawn more than 30 days after illness onset.

Figure 1. Cases of Lyme disease by month of diagnosis, Fairfax County, 2016 (n=215).



¹ CDC. Diagnosis and management of tickborne rickettsial diseases: Rocky Mountain spotted fever, ehrlichiosis, and anaplasmosis – United States. MMWR 2006;55(No. RR-04).

² CDC. Lyme Disease. Retrieved on February 10, 2018 from <https://www.cdc.gov/lyme/index.html>.

Toxic Substances

Background

One of the roles of public health in the US is to identify, examine, and describe epidemiological trends of elevated levels of toxic substances in humans. This surveillance and investigation is important as certain populations are more exposed and vulnerable than others to toxic substances in their environment. Of particular concern is elevated lead levels found in children less than 72 months of age given the developmental risks associated with this exposure.¹ Starting in 2016, lower levels of lead (≥ 5 ug/dL) were required to be reported to public health throughout the US. People encounter a range of chemicals in their daily lives, whether it is through an occupational exposure or through the environment in which they live. As public health identifies epidemiological trends and risk factors, information and education is shared with healthcare providers and the general public to help limit exposures in our community.

Fairfax Data

- Incidence of toxic substance reports has remained low and relatively stable since 2011 in Fairfax County; the only significant increase is due to the addition of required reporting of lower levels of lead in pediatric populations in 2016 (Table 1).
- Of the 114 pediatric elevated lead levels reported in 2016 in Fairfax County, 74.6% were less than 10ug/DL (previous reportable level) and 4.4% were greater than 20 ug/dL (more intensive public health follow-up required).
- Over an 18-month period in 2015 and 2016, FCHD examined the suspect reason for elevated lead levels in our pediatric cases (Table 2). The use of a non-US product and recent immigration were the top suspected reason for the elevated lead level (20.7% for both).
- Excluding lead, the vast majority of all other elevated toxic substance cases (n=114) in Fairfax County since 2011 are in adults (99.1%) and in males (64%).

Clinician Pearls

- Elevated levels of toxic substance in blood, urine, etc.) is a reportable condition in Virginia and should be reported to local public health departments. Reportable toxic substance levels can be found at the following link: <http://www.vdh.virginia.gov/content/uploads/sites/13/2016/03/Regulations-for-Disease-Reporting-and-Control-October-2016.pdf>.
- The Agency for Toxic Substances and Disease Registry (ATSDR) offers environmental health and medicine education products for health professionals, community members, and interested members of the public. Resources for health care professionals, including self-instructional, continuing-education primers, can be found at the following link: https://www.atsdr.cdc.gov/emes/health_professionals/index.html
- The primary treatment for elevated toxic substances is to reduce or prevent further exposure. Chelation therapy, hemodialysis and other supportive treatment is sometimes indicated in symptomatic patients.²
- Asymptomatic adults and children with slightly elevated levels of arsenic, cadmium, and/or mercury should stop seafood consumption and are recommended to be re-tested in one to three months.
- FCHD is available for consultation on remediation steps for repeated/continual elevated blood lead levels in adults.
- Public health consultation and lead risk assessments (home visit with environmental testing) is recommended for all children with elevated blood lead levels (>15 ug/dL). FCHD Communicable Disease/Epidemiology Unit is available at 703-246-2433 for any lead or toxic substance questions/consultations.

Table 1. Cases of elevated toxic substances reported to FCHD by year, Fairfax County 2011- 2016.

Elevated Toxic Substance Cases	2011	2012	2013	2014	2015	2016	Total
Arsenic	13	6	10	13	8	9	59
Asbestosis	1	2	0	0	1	0	4
Cadmium, elevated levels	0	0	2	1	0	0	3
Carbon monoxide, elevated levels	0	3	2	0	1	3	9
Lead, elevated levels	1	10	15	26	22	197*	271
Mercury, elevated levels	6	8	8	5	3	7	37
Pesticide poisoning	0	0	2	0	0	0	2
Total	21	29	39	45	35	216	385

Table 2. Suspect Reason for Elevated Lead Levels in Children over 18-months, 2015-2016.

Suspect reason for elevated lead level	Cases
Unknown	11
Recent Immigration (exposure in country of origin)	6
Use of Non-US products	6
Living in or regularly visiting housing built before 1978	2
Living in or regularly visiting housing in which one or more persons have evidence of lead exposure	1
Recent Travel (not immigration)	1

*Large increase is due to surveillance bias as lower levels of lead (5-10ug/dL) were required to be reported to public health

¹ Raymond J, Brown MJ. Childhood Blood Lead Levels in Children Aged <5 Years — United States, 2009–2014. MMWR Surveill Summ 2017;66(No. SS-3):1–10. DOI: <http://dx.doi.org/10.15585/mmwr.ss6603a1>.

² Fourth National Report on Human Exposure to Environmental Chemicals. Department of Health and Human Services Centers for Disease Control and Prevention, 2009.

Outbreak Summary, 2016

Background

Outbreaks are defined by an illness that is clustered in time or place, with case numbers above expected for a specified population, location (e.g., school, hospital, business, or other facility), or exposure (e.g., surgery, ingestion of a food or medication). For rare diseases or diseases that require significant public health response, such as measles, anthrax, smallpox, or diphtheria, one case constitutes an outbreak. Outbreaks may be detected by an astute clinician who recognizes something abnormal. Outbreaks are not limited to diseases on the reportable disease list and suspected outbreaks of any disease should be reported to FCHD.

Fairfax Data

- FCHD worked with the Virginia Department of Health and CDC to investigate several multistate outbreaks
 - A multistate outbreak of hepatitis A occurred in 2016 associated with frozen imported strawberries used at Tropical Smoothie Cafes. 143 people with hepatitis A were reported from nine states with 109 cases in Virginia and 18 cases in Fairfax.¹ Preventive measures for contacts (vaccination of immune globulin) were implemented as appropriate; no secondary cases were identified.
 - Through the PulseNet PFGE system, CDC detected a cluster of PFGE matched E. coli O121 cases. Initial epidemiological investigation found a strong signal for home baking. Further refinement led to a hypothesis of flour being the vehicle for infection, and CDC initiated a case-control study to test this hypothesis. Two cases in Fairfax County matched into the cluster. Flour was implicated in this outbreak and a recall was initiated.
- Of the 41 outbreaks originating in Fairfax County in 2016, 54% were gastrointestinal illness and 22% were respiratory illness; (Figure 1). The most common investigation settings were schools (43.9%), long-term care facilities (29.3%) and daycares (19.5%). Seasonal distribution showed fewer outbreaks occurring during the summer (Figure 2)

Clinician Pearls

- Immediately report suspected outbreaks of any disease to FCHD. FCHD's Communicable Disease Program investigates, collaboratively with a facility as appropriate, to identify additional cases; characterizes the causative agent including through molecular strain typing methods; recommends and/or implements measures to limit transmission; and conducts prospective surveillance to monitor for further illness.
- By Virginia regulation, outbreak reporting is required by the person in charge of any residential or day program, school, summer camp, or service or facility licensed or operated by any agency of the Commonwealth. This includes child care facilities, assisted living facilities, detention facilities, mental health programs, and other group settings. Licensed healthcare facilities (hospitals, skilled nursing facilities), physicians and laboratory directors also must report outbreaks.²⁴
- Confirming the etiology of respiratory outbreaks is important because if influenza is identified (e.g., using a rapid test), the use of antiviral medication may prevent subsequent cases, particularly in high risk persons.

Figure 1. Outbreaks Suspected or confirmed Etiology, Fairfax County 2016 (n=41).

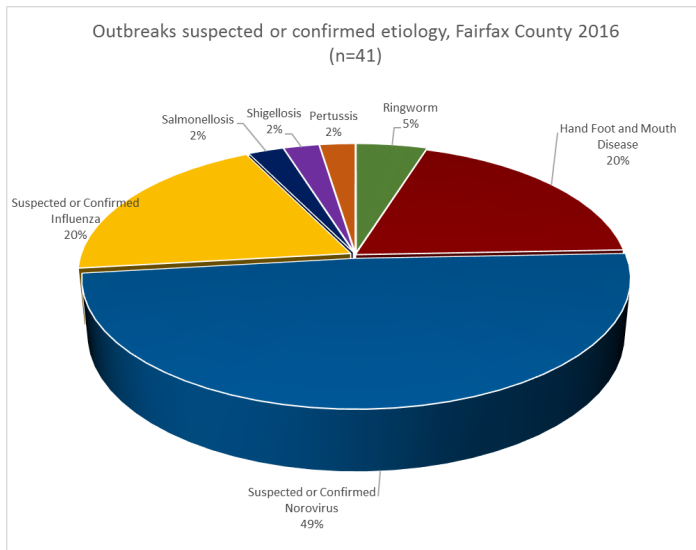
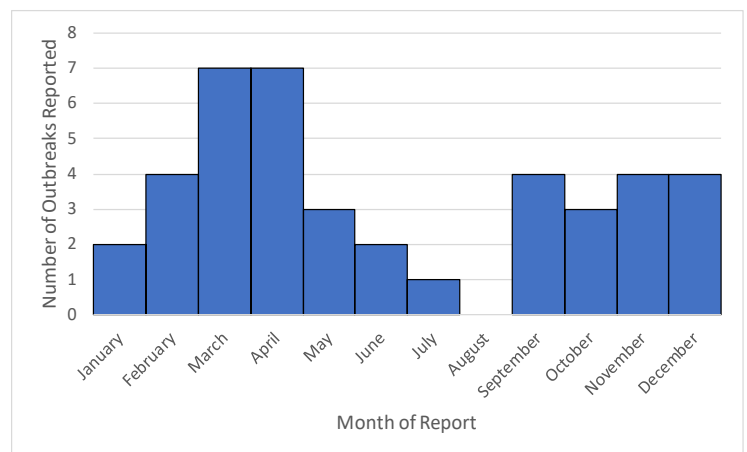


Figure 2. Outbreaks by Month of Report to FCHD, 2016 (n=41)



1. CDC 2016-Multistate outbreak of hepatitis A linked to frozen strawberries (Final Update)-December 2016. Retrieved from <https://www.cdc.gov/hepatitis/outbreaks/2016/hav-strawberries.htm>.



Fairfax County Health Department Communicable Disease/Epidemiology Unit



Contact Information

Communicable Disease/Epidemiology Unit

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

703.246.2433 • TTY 711

FAX 703.653.1347

Communicable Disease Hotline

Evenings & weekends

703-409-8449

Fairfax County Public Health Laboratory

703.246.3218 • TTY 711

FAX 703.653.9469

Rabies Program

(for all rabies reports & guidance during business hours)

703.246.2433 • TTY 711

FAX 703.653.6648

Rabies Hotline

Evenings & weekends

703-246-2433

FCHD Communicable Disease Services

<p>Communicable Disease Surveillance and Investigation</p>	<ul style="list-style-type: none"> FCHD conducts communicable disease surveillance and investigation with the goal of reducing morbidity and mortality within the community. When cases or outbreaks of disease are reported or identified, FCHD staff: <ul style="list-style-type: none"> Provide infection control guidance to clinicians, facilities, and infected individuals; Identify exposed individuals and provide guidance regarding disease prevention, including recommendations for the administration of prophylaxis (if appropriate).
<p>Rabies</p>	<ul style="list-style-type: none"> Rabies program staff provides guidance regarding rabies exposure assessment and PEP administration 24 hours a day. FCHD Laboratory provides animal rabies testing for human or domestic animal exposures.
<p>Tuberculosis</p>	<ul style="list-style-type: none"> The Tuberculosis (TB) program offers the following services, free of charge, to Fairfax County residents: diagnosis, treatment and management of latent TB infection (LTBI) as well as suspect and confirmed cases of active TB disease. TB testing is available for a nominal charge. Reporting to FCHD is required for all TB cases and persons under 4 years of age with LTBI.
<p>HIV/AIDS</p>	<ul style="list-style-type: none"> Free HIV testing (including anonymous option) and HIV harm-reduction counseling is available through FCHD walk-in clinics and STD clinics. Clients may visit http://www.fairfaxcounty.gov/hd/hiv-testing-aids/ or call 703-246-2411 for service hours. HIV/AIDS program staff coordinates HIV/AIDS treatment, including treatment obtained through the AIDS Drug Assistance Program.
<p>STD</p>	<ul style="list-style-type: none"> STD testing and treatment are available free of charge at each of the five FCHD district offices. Clients may visit http://www.fairfaxcounty.gov/hd/std-clinic-sched.htm or call 703-246-2411 to confirm service hours. STD program staff provides partner notification services for reported STD cases.
<p>Laboratory</p>	<ul style="list-style-type: none"> FCHD laboratory conducts testing in support of communicable disease investigations including testing for TB, HIV, STDs, enteric pathogens, and rabies virus.
<p>Outreach</p>	<ul style="list-style-type: none"> FCHD provides educational outreach regarding communicable disease prevention and control throughout the Fairfax Community.

Virginia Reportable Disease List

Communicable Disease Reporting Guide for Clinicians

Disease reporting requirements for clinicians practicing in the Commonwealth of Virginia.

By law, Virginia clinicians must report diagnoses of the specified infections, diseases, and conditions listed on this poster. Both lab-confirmed and clinically suspect cases are reportable. The parallel system of lab reporting does not obviate the clinician's obligation to report. Some conditions (e.g., uncommon illness of public health significance, animal bites, HUS, pesticide poisoning, disease outbreaks) are rarely, if ever, identified by labs. We depend on clinicians to report.

Reports should be made to the patient's local health department (based on patient's home address) **and include at least the patient's name, home address, phone number, date of birth, gender, diagnosis, and date of symptom onset.** Most reports should be made within one working day of the diagnosis, but there are several important exceptions — please refer to the list on this poster.

Disease reporting enables appropriate public health follow up for your patients, helps identify outbreaks, provides a better understanding of morbidity patterns, and may even save lives. Remember that HIPAA does not prohibit you from reporting protected health information to public health authorities for the purpose of preventing or controlling diseases, including public health surveillance and investigations; see 45 CFR 164.512(b)(1)(i).3.

COMPLIANCE

A civil penalty may be imposed against a person or entity for failing or neglecting to comply with reporting regulations as issued by the State Board of Health of the Commonwealth of Virginia. State Board issued regulations include the requirements to report the diseases listed on this poster, along with related data; and to cooperate with local and state public health authorities in their investigation and control of reportable diseases. (Regulations for Disease Reporting and Control § 32.1-27.)

REPORT IMMEDIATELY*

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| Anthrax | Psittacosis |
| Botulism | Q Fever |
| Brucellosis | Rabies, Human and Animal |
| Cholera | Rubella |
| Diphtheria | Severe Acute Respiratory Syndrome (SARS) |
| <i>Haemophilus Influenzae</i> Infection, Invasive | Smallpox (Variola) |
| Hepatitis A, | Syphilis (Primary and Secondary) |
| Influenza, Novel Virus | Tuberculosis, active disease |
| Influenza –Associated Deaths in Children < 18 Years of Age | Tularemia |
| Measles | Typhoid/Paratyphoid fever |
| Meningococcal Disease | Unusual occurrence of disease of public health concern |
| Monkeypox | Vaccinia, disease or adverse event |
| Mycobacterial Diseases | <i>Vibrio</i> infection |
| Outbreaks, All | Viral hemorrhagic fever |
| Pertussis | Yellow Fever |
| Plague | |
| Poliovirus Infection | |

*within 24 hours of diagnosis

REPORT WITHIN THREE DAYS

- Acquired immunodeficiency syndrome (AIDS)
- Arboviral infections (e.g. dengue, EEE, LAC, SLE, WNV)
- Campylobacteriosis
- Chancroid
- Chickenpox (Varicella)
- *Chlamydia trachomatis* infection
- Creutzfeldt-Jakob disease if <55 years of age
- Cryptosporidiosis
- Cyclosporiasis
- Ehrlichiosis/Anaplasmosis
- *Escherichia coli* infection, Shiga toxin-producing
- Giardiasis
- Gonorrhea
- Granuloma inguinale
- Hantavirus pulmonary syndrome
- Hemolytic uremic syndrome (HUS)
- Hepatitis B (acute and chronic)
- Hepatitis C (acute and chronic)
- Hepatitis, other acute viral
- Human immunodeficiency virus (HIV) infection
- Influenza
- Lead, elevated blood levels
- Legionellosis
- Leprosy
- Lyme disease
- Lymphogranuloma venereum
- Malaria
- Mumps
- Ophthalmia neonatorum
- Rabies treatment, post-exposure
- Salmonellosis
- Shigellosis
- Spotted fever rickettsiosis
- *Staphylococcus aureus* infection, (invasive methicillin-resistant) and (vancomycin-intermediate or vancomycin-resistant)
- Streptococcal disease, Group A, invasive or toxic shock
- *Streptococcus pneumoniae* infection, invasive, in children <5 years of age
- Syphilis
- Tetanus
- Toxic substance-related illness
- Trichinosis (Trichinellosis)
- Tuberculosis infection in children <4 years of age
- Yersiniosis



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