# Communicable Disease Summary 2018

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# **Table of Contents**

Торіс	Pag
Selected Reportable Diseases, 2012-2018	1
Tick-borne Diseases	2
Gastrointestinal/Foodborne Illnesses	3
Influenza	4
Carbapenem-Resistant Enterobacteriacae (CRE) *	5
Outbreaks in 2018 And epidemiology outreach to community	6
Reportable Disease List Updated November 2018	7
District Contact Information	8

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# Table of Selected Reported Diseases in Thomas Jefferson Health District, 2012-2018

								2018 7 <sup>-</sup> R	Yr Average Lates <sup>§</sup>
Condition	2012	2013	2014	2015	2016	2017	2018 <sup>§</sup>	TJHD	VA
Amebiasis	0	0	1	0	1	0	3	0.29	0.36
Arboviral Infection - West Nile Virus	2	0	0	0	0	0	1	0.17	0.11
Botulism, infant	1	0	0	0	0	0	0	0.06	0.04
Campylobacteriosis	10	6	13	70	51	72	71	16.97	14.61
Carbapenem-Resistant Enterobacteriacae (CRE) and Carbapenemase-Producing Organisms (CPO)*	-	-	-	-	-	-	0*	0.00*	1.61*
Chlamydia	741	722	593	683	681	762	897	294.3	448.75
Cryptosporidiosis	1	3	6	9	17	9	17	3.59	2.50
Cyclosporiasis	0	0	0	2	2	1	3	0.46	0.11
E. coli infection, shiga toxin producing	5	5	4	6	6	3	14	2.49	1.94
Ehrlichiosis/anaplasmosis	10	5	5	10	13	5	6	2.72	1.40
Giardiasis	8	18	10	14	10	11	18	5.15	3.43
Gonorrhea	145	86	152	95	110	191	186	55.9	111.51
Haemophilus influenzae, invasive	1	5	2	3	4	7	4	1.51	1.49
Hemolytic uremic syndrome	0	1	0	0	0	1	0	0.12	0.08
Hepatitis A, acute	1	1	0	2	5	1	0	0.58	0.82
Hepatitis B, acute	1	1	0	1	0	0	0	0.17	0.79
Hepatitis C, acute	0	0	0	0	3	0	2	0.28	0.76
HIV disease	15	26	20	21	9	18	24	6.60	11.71
Influenza-associated mortality (less than age 18)	0	0	0	0	0	1	1	0.12	0.04
Lead - elevated blood levels in children	5	5	12	5	30	63	36	9.04	9.27
Legionellosis	1	3	3	2	7	4	9	1.68	1.78
Listeriosis	1	2	2	0	0	0	3	0.46	0.30
Lyme disease	57	58	67	84	67	89	62	28.04	16.09
Malaria	4	3	1	3	3	3	1	1.04	0.88
Measles (Rubeola)	0	0	0	0	0	0	0	0.00	0.01
Meningococcal disease (Neisseria meningitides)	0	2	3	0	1	1	0	0.41	0.10
Mumps	1	3	9	22	1	9	5	2.89	0.70
Pertussis	12	27	28	71	37	25	10	12.17	4.58
Salmonellosis	33	28	34	47	56	27	32	14.89	14.27
Shigellosis	3	1	13	3	6	7	13	2.66	2.62
Spotted Fever Rickettsiosis (including RMSF)	31	23	22	23	14	16	23	8.81	4.16
Staph aureus, methicillin resistant (MRSA)	18	11	14	23	25	1	0	5.32	9.85
Streptococcal infection, Group A, invasive	14	10	10	12	4	12	10	5.33	2.72
Streptococcus pneumoniae, invasive (age < 5)	1	0	0	1	2	0	0	0.23	0.37
Syphilis, early	7	11	7	12	14	7	18	4.40	10.56
Toxic Substance Exposure (Arsenic, Mercury)	0	2	2	1	1	1	0	0.02	0.94
Tuberculosis	3	6	7	6	1	5	5	1.91	2.46
Tularemia	0	1	0	1	0	0	0	0.12	0.02
Typhoid fever (Salmonella typhi)	1	0	0	0	0	0	0	0.00	0.13
Varicella (Chickenpox)	10	26	23	24	17	13	16	7.43	4.31
Vibrio infection - non-cholera	2	0	0	0	1	2	0	0.29	0.63

§ - Rates are crude and use preliminary 2018 numbers. Units are number of cases per 100,000 population Source of population estimates: U.S. Census Bureau, https://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml, 5-Year ACS estimates

\*CREs and CPOs were not reportable until November, 2018. Incidence is therefore a three month incidence. Additionally, investigations occur in jurisdictionswhere positive patients visit, but are attributed to the district in which they live.

# **Tickborne Diseases**

#### TJHD FAST FACTS

Lyme Disease cases in 2018: 62 Rate: 25.14 per 100,000 persons

Spotted Fever Rickettsiosis (including RMSF) Cases in 2018: 23 Rate: 9.32 per 100,000 persons

**Primary mode of transmission:** Tickborne

**Period of communicability:** N/A

**Detection method (s):** Signs and symptoms, serology (2 step testing process via EIA/IFA and Western Blot for Lyme, IFA for Spotted Fever rickettsiosis)

**High risk groups:** Persons spending time in a tick environment, such as forested areas (leaf litter), grass surrounding forests, and shaded vegetation

**Prevention:** Avoid tick bites, check for ticks after coming indoors, and remove ticks early

### PUBLIC HEALTH PRIORITIES

- Collection of data enables us to determine the incidence and distribution of Lyme disease in our community, monitor trends over time, and focus educational and prevention efforts.
- Public health follow-up involves confirming laboratory results as well as clinical signs and symptoms.



### FACTS and EPIDEMIOLOGIC DATA

Nationally, 95% of Lyme disease cases are reported from 14 states in the northeast and upper Midwest.<sup>1</sup> For all counties in TJHD Lyme disease is the most common tick-borne condition:

 Albemarle (22.3 per 100K)
 Nelson (53.5 per 100K)

 Fluvanna (3.8 per 100K)
 Greene (43.5 per 100K)

 Charlottesville (29.2 per 100K)
 Louisa (19.5 per 100K)



### THINGS TO REMEMBER

- To take preventative measures against tick bites, avoid direct contact by avoiding woody and brushy areas with high grass and leaf litter and by walking in the center of trails.
- Repellents containing 20%-30% DEET and treating clothes with permethrin are also effective at preventing tick bites.
- There are many effective landscaping strategies to tick proof the yards around homes,<sup>3</sup> however it is also important to remember that ticks will often transfer between animals and humans.
- Most infections are transmitted through the bite of immature (nymph) ticks, which can be very small, approximately the size of a poppy seed.
- Peak transmission is during the late spring and early summer months, when nymph ticks are most active, but often discovered much later when more noticeable symptoms begin.

<sup>1</sup>Centers for Disease Control and Prevention. Lyme Disease: Data and Statistics. Accessed from <u>http://www.cdc.gov/lyme/stats/index.html.</u>

<sup>2</sup>Centers for Disease Control and Prevention. -step Laboratory Testing Process. Accessed from https://www.cdc.gov/lyme/diagnosistesting/labtest/twostep/index.html <sup>3</sup>http://www.ct.gov/caes/lib/caes/documents/special\_features/tickhandbook.pdf

<sup>4</sup>Map made from CDC Data by Sean Morris

# Gastrointestinal/Foodborne Illnesses



#### **EPIDEMIOLOGIC DATA**

TJHD has greater incidence of the 7 most common GI illnesses (shown below) than the overall Virginia rates. Common sources of the most common infections (as shown in the graph below) is live poultry and poultry byproducts (including eggs).

Several risk factors for GI illnesses include eating contaminated meat and dairy products, as well as handling of live animals. Effective ways of preventing GI illness include fully cooking all food, frequent handwashing after handling raw food, before eating, and after using the bathroom, and immediately disinfecting any potentially contaminated surfaces.



#### THINGS TO REMEMBER

- Frequent hand washing is key to preventing illness: after using the bathroom, changing diapers, handling live animals or animal byproducts, and prior to and after cooking
- Handle all raw meat as if contaminated
- Wash cutting boards or surfaces after raw meat or eggs have touched them, especially if using the same space for foods that will not be cooked
- Those working in high risk occupations (healthcare, child care or food service industry) or attend daycare are at increased risk of spreading disease and are required to stay out of work if ill with diarrhea until 24 hours without diarrhea<sup>2</sup>

<sup>1</sup>Centers for Disease Control. Food Safety: Keeping Backyard Chickens and Other Poultry. Accessed 2/29/2019. https://www.cdc.gov/features/salmonellapoultry/ <sup>2</sup>Guide to Employee Health in Food Establishments. http://www.vdh.virginia.gov/content/uploads/sites/20/2016/04/GuideToEmployeeHealth\_ExternalWeb\_Feb2017.pdf <sup>3</sup>Graph made from VDH Surveillance Data **-2-**

# Influenza

### **Epidemiologic** Data

The 2017-18 flu season saw an increase in morbidity and mortality over recent years. Of the 4,338 specimens tested, at the state public health laboratory 4,150 were positive for influenza.<sup>1</sup>

Influenza A viruses were the most prevalent during the 2017-2018 flu season, with 68.4% of tested specimens positive. Further subtyping showed 72.4% of the specimens testing positive for Influenza A were A (H3) and 27.6% were A (H1).<sup>1</sup>

\*The 2018-2019 Flu Season is ongoing, and all data for it is preliminary, so is not discussed in detail.\*

### THINGS TO REMEMBER

- An influenza vaccine is recommended for everyone 6 months of age and older
- FluMist was available this flu season
- If ill, stay home for at least 24 hours after fever subsides<sup>2</sup>
- Cover nose and mouth with elbow or tissue when coughing or sneezing
- Perform frequent hand washing<sup>2</sup>
- Avoid contacting eyes, nose and mouth<sup>2</sup>
- To help decrease spread, remember to clean and disinfect surfaces that may be contaminated<sup>2</sup>

#### Virginia Department of Health Weekly Influenza Activity Report



Confirmatory Laboratory Reports by Week and Subtype



The 2017-2018 Flu Season saw peak incidence in late February, 2018 and continued to May, 2018. The 2018-2019 Flu Season, while still on going, saw similar trends with a steeper onset of cases and a slower decline. While 2017-2018 saw about 40% type B consistently, 2018-2019 saw very little type B, for the most part not showing up until late February.

Report Generated May 2, 2019

#### How many people are seeking care for an influenza-like illness (ILI)?



From 2016-2018 peak flu like activity occurred in late February through March and April, while occurring early in previous years, activity existed through May and into June. \*Note: 2018-19 Flu Activity is ongoing and data is preliminary, additionally as of November

\*Note: 2018-19 Flu Activity is ongoing and data is preliminary, additionally as of November 2018 flu reporting changed to lab only reporting

<sup>&</sup>lt;sup>1</sup>Virginia Department of Health. Influenza Surveillance. Accessed 9/19/2018. Accessed from http://www.vdh.virginia.gov/epidemiology/influenza-flu-in-virginia/influenzasurveillance/

<sup>&</sup>lt;sup>2</sup>Center for Disease Control and Prevention. Influenza (Flu). Accessed 9/19/2018. Accessed from https://www.cdc.gov/flu/consumer/prevention.htm

<sup>&</sup>lt;sup>3</sup>Graphs taken from Virginia Department of Health, Weekly Influenza Report, accessed 4/2/2019

# **Carbapenem-Resistant Enterobacteriacae (CRE)**

#### FAST FACTS

**Etiologic agents:** Include E. Coli, Shigella, Salmonella, etc.

**Primary mode of transmission:** Carbapenem resistance is typically shared person to person. Resistance can be shared among bacteria, meaning a carbapenemase (one mechanism of resistance) producing E. Coli could share that protein with a Shigella, and show up in a second patient as resistant Shigella.

**Risk Factors:** These are typically transmitted in hospital and longterm care facilities, and are typically opportunistic, meaning they occur among sick patients who may be receiving treatment for other conditions<sup>1</sup>. The highest risk is in patients who are on long courses of certain antibiotics, or on devices like ventilators or catheters.

**Carbapenems:** CREs are resistant to common antibiotics given to patients with these illnesses, limiting treatment options. Unlike other drug resistant organisms like MRSA, CREs can become resistant to carbapenems through a variety of mechanisms.

**Public Health Concerns:** Because patients with CREs tend to have been to multiple healthcare facilities between health districts, investigations can become very complex and time consuming. Because these are typically hospital acquired infections, the vulnerable population is also especially susceptible. Due to commonness of enterobacteriaceae infections, resistance among these could have a "far-reaching impact" as quoted by the CDC<sup>1</sup>.

<sup>1</sup> Centers for Disease Control and Prevention. CREs, accessed 4/19/2019. Accessed from https://www.cdc.gov/hai/organisms/cre <sup>2</sup>World Health Organization. Antibiotic Resistance Factsheet, accessed 4/19/2018. Accessed from https://www.who.int/news-room/factsheets/detail/antibiotic-resistance (Infographic)

#### THE PROBLEM

Carbapenem based antibiotics are commonly given to treat a variety of illnesses. CREs are resistant to this class of antibiotics, limiting treatment options. Due to this resistance, and the common appearance in patients with other comorbidities, mortality is much higher in CREs and CROs than non-resistant enterobacteriacae<sup>1</sup>. As a response to this emerging public health issue, VDH made CREs reportable as of November, 2018.

#### What Can I Do?<sup>1</sup>

#### Patients

#### **Providers**

-Tell your doctor if you have been hospitalized elsewhere

-Expect all providers to wash their hands before and after touching you or tubes going into you -Wash your own hands frequently -Follow proper infection control protocol -Carefully clean and disinfect equipment -Isolate patients with CREs from those without -Remove temporary medical devices as soon as possible

**Find More Information & Guidance At:** https://www.cdc.gov/hai/organisms/cre

### How does antibiotic resistance occur?



#### THINGS TO REMEMBER

- It is important to take all antibiotics to completion and as prescribed. Symptoms subsiding does not mean the bacteria is completely gone, and not finishing a course of antibiotics can cause disease reoccurrence and antibiotic resistance.
- Discuss with your provider the need for antibiotics. Remember that antibiotics only treat bacterial infections, not viral infections.

# **2018 OUTBREAKS & INVESTIGATIONS**



#### **Outbreak Epidemiologic Data**

This was the third straight year that we had zero outbreaks originate from either local hospital. Outbreaks are defined as an unusual increase in number of cases of a specific disease over baseline, in a defined population and time period.

Outbreak response includes determining factors such as the susceptible population, the proportion of exposed people infected, and risk factors. TJHD works with facilities to put into place appropriate control measures and track outbreak progression.

In 2018 TJHD conducted over 1,000 reportable disease investigations, which may or may not be connected to other cases. Investigation timeline and details are specific to each disease, but typically take into account risk factors for the disease and possible contacts at risk of exposure. The goal of disease a investigation is to identify the source of infection and potential contacts, as well as educate the public about prevention.

#### **Epidemiology Outreach**

The Epidemiology Department for the Thomas Jefferson Health District receives a number of phone calls and questions from the community in regards to a multitude of subjects. These calls can come from hospitals, urgent care facilities, clinics or community members with concerns.

The most common calls are about infection control measures, education, and coordination of lab specimens (whether what specimen types to collect or setting up specimen testing at DCLS, the state lab).

#### THINGS TO REMEMBER

- All outbreaks are reportable, including but not limited to foodborne, healthcare-associated, occupational, toxic-substance related, and waterborne.
- We try to test for etiologic agents during most outbreaks. Usually this can be done through the state public health laboratory free of charge. Determining the cause of an outbreak helps us make more targeted recommendations for disease prevention and control.

# VIRGINIA REPORTABLE DISEASE LIST

Reporting of the following diseases is required by state law (Sections 32.1-36 and 32.1-37 of the Code of Virginia and 12 VAC 5-90-80 of the Board of Health Regulations for Disease Reporting and Control – <u>http://www.vdh.virginia.gov/surveillance-and-investigation/division-of-surveillance-and-investigation/commonwealth-of-virginiastate-board-of-health/</u>). Report all conditions when suspected or confirmed to your local health department (LDH). Reports may be submitted by computer-generated printout, Epi-1 form, CDC or VDH surveillance form, or upon agreement with VDH, by means of secure electronic submission.

**BOLD** = Laboratories must submit initial isolate or other initial specimen to the Division of Consolidated Laboratory Services (DCLS) within 7 days of identification. All specimens must be identified with patient and physician information, and the LHD must be notified within the the timeframe specified below.

REPORT IMMEDIATELY	REPORT WITHIN 3 DAYS
Anthrax ( <i>Bacillus anthracis</i> ) [a]	Amebiasis ( <i>Entamoeba histolytica</i> ) [a]
Botulism (Clostridium botulinum) [a]	Arboviral infections (e.g., CHIK, dengue, EEE, LAC, SLE, WNV, Zika) [a]
Brucellosis (Brucella spp.) [a]	Babesiosis ( <i>Babesia</i> spp.) [a]
Cholera (Vibrio cholerae O1/O139) [a]	Campylobacteriosis (Campylobacter spp.) [a]
Coronavirus infection, severe (e.g., SARS-CoV, MERS-CoV) [a]	Candida auris, infection or colonization [a,c]
Diphtheria (Corynebacterium diphtheriae) [a]	Carbapenemase-producing organism, infection or colonization [a]
Disease caused by an agent that may have been used as a weapon	Chancroid (Haemophilus ducreyi) [a]
Haemophilus influenzae infection, invasive [a]	Chickenpox (Varicella virus) [a]
Hepatitis A [a]	
Influenza-associated deaths if younger than 18 years of age	Cryptosporidiosis (Cryptosporidium spp.) [a]
Influenza A, novel virus [a]	Cyclosponasis (Cyclospora spp.) [a]
Measles (Rubeola) [a]	Giardiasis (Giardia son ) [a]
Meningococcal disease (Neisseria meningitidis) [a]	Gonorrhea (Neisseria gonorrhoeae) [a]
Outbreaks, all (including but not limited to foodborne, healthcare-	Granuloma inquinale (Calymmatobacterium granulomatic)
associated, occupational, toxic substance-related, waterborne, and	Hantavirus pulmonary syndrome [a]
any other outbreak)	Hemolytic uremic syndrome (HUS)
Pertussis ( <i>Bordetella pertussis</i> ) [a]	Henatitis B (acute and chronic) [a]
Plague (Yersinia pestis) [a]	Hepatitis C (acute and chronic) [a]
Poliovirus infection, including poliomyelitis [a]	Hepatitis, other acute viral [a]
Psittacosis (Chlamydophila psittaci) [a]	Human immunodeficiency virus (HIV) infection [a]
Q fever (Coxiella burnetti) [a]	Influenza, confirmed seasonal strain [a]
Rabies, human and animal [a]	Lead, blood levels [a]
Rubella [a], including congenital rubella syndrome [a]	Legionellosis (Legionella spp.) [a]
Smallpox (Variola virus) [a]	Leprosv/Hansen's disease (Mycobacterium leprae)
Syphilis ( <i>Treponema palildum</i> ), congenital, primary,	Leptospirosis (Leptospira interrogans) [a]
and secondary [a]	Listeriosis (Listeria monocytogenes) [a]
Tuberculosis, active disease (Mycobacterium	Lyme disease (Borrelia spp.) [a]
tuberculosis complex) [a,b]	Lymphogranuloma venereum (Chlamydia trachomatis)
Tularemia ( <i>Francisella tularensis</i> ) [a] Turk sid/Dastark sid infestion (Defense (K. Turki, Defense (K.	Malaria ( <i>Plasmodium</i> spp.) [a]
Typhoid/Paratyphoid infection (Salmonella Typhi, Salmonella	Mumps [a]
Paratypni) [a]	Neonatal abstinence syndrome (NAS)
Unusual occurrence of disease of public health concern	Ophthalmia neonatorum
Vaccinia, disease of adverse event [a]	Rabies treatment, post-exposure
Viral hemorrhadic fever [a]	Salmonellosis (Salmonella spp.) [a]
Vila Henorhagic level [a] Vellow fever [a]	Shiga toxin-producing Escherichia coli infection [a,d]
	Shigellosis ( <i>Shigella</i> spp.) [a]
LEGEND	Spotted fever rickettsiosis ( <i>Rickettsia</i> spp.) [a]
	Streptococcal disease, Group A, invasive or toxic shock [a]
[a] Reportable by directors of laboratories. These and all other conditions	Streptococcus pneumoniae infection, invasive and <5 years of age [a]
listed must be reported by physicians and directors of medical care facilities.	Syphilis ( <i>Treponema pallidum</i> ), if not primary, secondary, or congenital
[b] Laboratories report AFB, M. tuberculosis complex or any other	Tetanus (Clostridium tetani)
mycobacteria, and antimicrobial susceptibility for <i>M. tuberculosis</i> complex.	Toxic substance-related illness [a]
[c] Includes submission of Candida haemulonii specimens to DCLS.	ricninosis/Tricninellosis (Tricninella spiralis) [a]
[d] Laboratories that use EIA without a positive culture should forward	I uperculosis intection [a]
positive stool specimens or enrichment broth to DCLS.	Staphylococcus aurous infaction [a]
[e] Includes reporting of Photobacterium damselae and Grimontia hollisae.	Yersiniosis (Yersinia son ) [a]
	recentere (reconne oppi) [6]

Effective November 2018

# **Contact Information for Thomas Jefferson Health District**

Marcia Hornberger, BSN, RN, CIC Epidemiologist Marcia.Hornberger@vdh.virginia.gov Office – 434-972-4305 Fax – 434-972-6249 **Denise Bonds, MD, MPH** *Health Director* **Office** – 434-972-6226 **Fax** – 434-972-4310

Persons calling for assistance in having an animal tested for rabies because of a human exposure to a potentially rabid animal should call: TJHD Environmental Health

434-972-6219 Monday – Sunday, 8:00 AM and 4:30 PM.

### Thomas Jefferson Health District Charlottesville/Albemarle, Fluvanna, Greene, Louisa, and Nelson Local Health Departments

**Communicable Disease Reporting Hotline** 

Normal Business Hours: 434-972-6217

After Hours & Weekends: 866-531-3068

### Fax : 434-972-6249

<b>Charlottesville/</b> <b>Albemarle</b> <b>Health Department</b> 1138 Rose Hill Dr. Charlottesville 22903	<b>Fluvanna County</b> <b>Health Department</b> 132 Main St. Rt. 15 Palmyra 22963	<b>Greene County</b> <b>Health Department</b> 50 Stanard St. Stanardsville 22973	<b>Louisa County</b> <b>Health Department</b> 540 Industrial Dr. Louisa 23093	<b>Nelson County Health Department</b> 4038 Thomas Nelson Hwy Arrington 22922
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