

# US VIRGIN ISLANDS DEPARTMENT OF HEALTH Epidemiology Division





**Justa Encarnacion**  
**Health Commissioner**  
Virgin Islands Department of Health

## Message from the Commissioner

The Epidemiology Division's goal is to protect and improve health Territorially through science, policy, partnership, and evidence-based public health action. As this is the first report under my helm as Health Commissioner, I would like acknowledge the Epidemiology and Public Health Laboratory's dedicated staff for their hard work in getting these efforts off the ground. I would also like to make a call for healthcare providers to continue to participate in disease reporting. Together, we work to reduce health risks, increase access to quality healthcare and enforce health standards.

Justa Encarnacion, RN, BSN, MBA/HCM



**Dr. Janis Valmond**  
**Deputy Commissioner**  
Virgin Islands Department of Health

## Message from the Deputy Commissioner

Epidemiology is a branch of science that deals with the control and prevention of communicable disease in the community. The Epidemiology Division (EPID) of the Virgin Islands Department of Health (VIDOH) is a crucial component in the following service areas:

- Investigating, intervening and monitoring the incidence/occurrence of illnesses in the USVI.
- Monitoring notifiable diseases reported by health care professionals and assisting them with case management.
- Providing education and consultation to health care professionals, community groups and members.

I am happy to introduce this new division so we, as a community, stay in touch and get to know their important role at VIDOH.

Janis Valmond, DrPH

# Message from the Director

This report documents our response to the priorities established by the VIDOH and the Virgin Islands' community at large, namely through the various public health activities and responses we have led. We have responded to various large-scale emergencies such as the 2014-2015 Chikungunya outbreak which was painfully felt throughout the Territory, the ongoing Zika response where we are striving to keep our pregnant and infant populations safe, and most recently, the 2017 Hurricane Season response and recovery.

For the Epidemiology Division, 2014-2018 have been years filled with significant milestones. We must remain vigilant and prepared to identify and respond to current as well as emerging and unknown threats. VIDOH-EPID tirelessly works on building capacity so we are ready and well-equipped to address those challenges.

VIDOH-EPID has been there for the public and will continue to be a driving force for public health in the US Virgin Islands. In 2019 and beyond, VIDOH-EPID continues to build on joint efforts to respond rapidly to emerging health threats, modernize interdepartmental data sharing, and the establishment of the Territory's first Public Health Laboratory.

**I invite you to help us share this first effort of completing the information flow feedback to the community. Please click or scan the QR code below to download the PDF and share with other stakeholders.**



<https://bit.ly/epi-reports>

Esther M. Ellis, PhD  
June 2019



**Dr. Esther Ellis**  
Territorial Epidemiologist  
Director,  
Epidemiology Division

**“I AM PROUD OF THE STRATEGIC AND IMPACTFUL WORK VIDOH-EPID HAS ACHIEVED IN THIS 4-YEAR PERIOD, OFTEN UNDER DIFFICULT AND CHALLENGING CONDITIONS.”**



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**VIDOH-EPID staff carry out household surveys for a Community Assessment for Preparedness and Emergency Response (CASPER) in Saint Croix, June 2017.**



# Sociodemographic Characteristics of the US Virgin Islands (USVI)

The USVI are located between the Atlantic Ocean and the Caribbean Sea, consisting of four major islands: Saint Croix (STX), Saint Thomas (STT), Saint John (STJ), and Water Island (WI). The USVI covers approximately 133 square miles (combined land area), which for comparison purposes, is approximately twice the area of the District of Columbia. A US Territory, it is located 40-50 miles east of Puerto Rico and extends from west to east ~60 miles at the top of the arc of the other Caribbean Islands.

## Population

According to the 2010 US Census Bureau data, the population of the USVI consisted of 106,405 persons with a racial/ethnic distribution including Black/African American 76%, White 15.6%, Asian 1.4%. A total of 17.5% of persons identify themselves Hispanic. Approximately 1/3 of the population is foreign-born with varying familial and cultural ties elsewhere, primarily in the Caribbean. The island with highest population density is STT (1,612 residents/sqm), followed by STX (602 residents/sqm), STJ (209 residents/sqm), and WI (237 residents/sqm).

## Age

The median age in 2010 was 39.2 years, a six year increase from the estimated median age of 33.4 years reported in 2000 and is indicative of a shift in aging in the population. In 2010, 17% (17,987) of residents were ≤13 years, while 15% (15,905) were 64 years and older. Approximately 37% (38,861) of the USVI population was over the age of 49, and 24% (26,050) was between 25 to 44 years old. The age distribution varied slightly among the islands. STX had the highest percent (14%) of the population over the age of 65 (7,089). Thirty percent (15,366) of the population in STX was ≤19 years, followed closely by STT at 26% (13,425) and STJ at 21.7%.

## Gender

Roughly 48% (50,867) of the USVI population were male and 52% (55,538) were female in 2010. In STX, males accounted for 48% (24,206) of the population whereas the females accounted for 52% (26,395). In STT, females accounted for 52% (27,105) of the population and males made up 48% (24,619). In STJ, 51% (2,128) were female, with 49% (2,042) male.



According to the Caribbean Tourism Organization, the region experienced travel at 28.7 million people in 2015; including ~650,000 tourists entering the USVI by air (6<sup>th</sup> of 28 Caribbean nations) and >2 million cruise ship visitors (3<sup>rd</sup> greatest in the Caribbean).

In 2017, despite market contraction from the impact of Hurricanes Irma and Maria, the Caribbean region saw a record 30.6 million international tourist arrivals.

In January 2019 alone, the USVI received 1,649,372 total visitor arrivals.

Image: CARIBBEAN360



Image: VI Consortium

## Insurance

The number of uninsured residents was 32,511 in 2010. The number of insured individuals represented 69% (72,922). Of insured individuals, 46% (48,356) held private health insurance, 15% (15,469) had medical assistance, and 9% (9,097) reported as having both private and medical assistance. For comparison, the national estimate for uninsured persons was 16% in 2010, which is considerably lower than the proportion in the USVI.

## Education

In 2010, 31 % (21,598) of persons 25 years or older had at least a high school diploma, while only 19 % (13,579) had an undergraduate degree or higher. About 31% (22,022) of residents 25 and older did not have a high school diploma and 16.3 % (11,543) of the population had less than a 9<sup>th</sup> grade education. Differences in educational attainment were present amongst the islands. The proportion of residents  $\geq 25$  years with at least a high school diploma, was 30% in STX, 31% in STT, and 25% in STJ. The distribution of residents that obtained an undergraduate degree followed a similar trend with 18% in STX, 19% in STT, and 28% in STJ.

## Language

According to the 2010 Census, 72% (70,864) of USVI residents  $\geq 5$  years spoke English only. The remainder 28% reported speaking Spanish/French Creole at home.

## Household Income

In 2009, the median household income in the USVI was \$37,254, considerably lower than the US median household income of \$50,112. According to the USVI Bureau of Economic Research (USVI-BER), about 11% of all households in the USVI live on less than \$10,000 per year, compared to the US at 7%. Additionally, about half of USVI households live on less than \$35,000 a year in comparison to a third of all households in the US. Income varied slightly by island with STJ having the highest median household income (\$40,644), followed by STT (\$38,232), and STX (\$36,042).

## Country of Birth

Sixty-nine percent (70,838) of the USVI population are reported native. Thirty-one percent of residents report Latin America and the other Caribbean islands as country of birth.

# The VIDOH's Epidemiology Division (EPID)

EPID was established in 2014 with the arrival of Dr. Esther Ellis, Territorial Epidemiologist, to the USVI. The division provides surveillance of nationally notifiable diseases (NNDs) that allows for Territorial disease monitoring, analysis and timely reporting of data. EPID and the Public Health Laboratory (PHL) are funded through the [Epidemiology and Laboratory Capacity for Infectious Diseases \(ELC\) Cooperative Agreement](#) from the US Centers for Disease Control and Prevention (CDC).

## Why is surveillance needed?

According to the Caribbean Tourism Organization, the region experienced record travel of 28.7 million people in 2015; including ~650,000 tourists entering the USVI by air (6<sup>th</sup> of 28 Caribbean nations) and over 2 million cruise ship visitors (3<sup>rd</sup> greatest in the Caribbean). Additionally, the unprecedented 2017 impact of Hurricanes Irma and Maria, highlighted the importance of establishing local capacity for the execution of disaster epidemiology surveillance in collaboration with Federal partners.

Surveillance allows:

- To serve as an early warning system in order to identify public health emergencies.
- To document impact of an intervention or progress towards specified public health goals.
- To understand/monitor the epidemiology of a condition to set priorities and guide public health policy and strategies.

## EPID Programs and Priorities

EPID primarily coordinates infectious disease epidemiology across the Territory. Currently, EPID is made up of the General Epidemiology Program, the Vaccine Preventable Diseases Surveillance Program, the Influenza Surveillance Program, the US Zika Pregnancy Registry Program, and the Ebola Preparedness Program. EPID works hand in hand with the PHL to process any specimens collected during an intervention as well as to conduct vector control efforts.

Together, these programs aim to:

- Monitor for outbreaks, support regional disease detection, and respond rapidly to emergencies.
- Conduct effective disease surveillance and build a strong outbreak response system.
- Sustain and strengthen partnerships for local health security, including with the public and private sector, non-governmental organizations, and Federal partners.

## Epidemiology Division

 General Epidemiology Surveillance

 Influenza Surveillance

 Vaccine Preventable Diseases Surveillance

 Arboviral Surveillance

 US Zika Pregnancy Registry

 Ebola Preparedness

 Public Health Laboratory





**VIDOH-EPID staff perform Territorial post-storm community assessments, September 2017 to November 2018. Assessments continue through 2019.**



## **EPID: Our mission**

**To provide efficient epidemiological services that will enhance public health practice and facilitate a continuum of care to the community of the US Virgin Islands.**

### **Together, EPID works Territorially to:**

**Respond quickly to threats** posed by infectious diseases like Zika and influenza.

**Implement proven prevention programs** for all nationally notifiable diseases.

**Detect and report outbreaks from leading disease threats** through the training of public health stakeholders to build a ready workforce and to enhance local capacity.

**Increase epidemiology and laboratory capacity** in the Territory.

**Strengthen public health infrastructure and information systems** needed for data-driven decision-making and faster local action.

**Develop and evaluate** new tools and approaches to combat health threats.

# SNAPSHOT

## EPID Accomplishments 2014-2018



Alongside the VIDOH Divisions of Public Health Preparedness (PHEP) and the Public Health Laboratory (PHL), EPID spearheads the local response to arboviral disease outbreaks such as the 2014-2015 Chikungunya outbreak, and the 2016-2017 Zika outbreak. Efforts include the control of mosquito populations and educational campaigns.



EPID staff were mobilized within the STT/STJ and STX VIDOH Emergency Operation Centers to support efforts including shelter surveillance and leptospirosis, melioidosis and tuberculosis case investigations. In August 2018, the USVI became a host site for the Epidemic Intelligence Service (EIS) for the first time, and obtained placement of one EIS Officer until July 2020.



VIDOH-EPID conducted multiple interventions for norovirus, epidemic keratoconjunctivitis (EKC) and other smaller scale outbreaks. Additional investigations have been completed for Carbapenem-resistant *Enterobacteriaceae* (CP-CRE) cases, salmonellosis, post-storm shelter surveillance, and post-storm morbidity and mortality.



With approximately 627 Chikungunya and 1,027 Zika cases confirmed, arboviral diseases continue to pose a threat to USVI residents and tourists alike. Throughout the Zika outbreak, >4,000 nets were distributed alongside 7,089 repellents; 600 condoms; and 19,062 educational materials Territory-wide. Together with our Federal partners, VIDOH-EPID and PHEP have continuously provided in-person outreach activities to the community including but not limited to educational and awareness presentations, event stands, home visits linked to pre and post-hurricane studies, and healthcare provider education.




VIDOH-EPID works closely with key Federal partners including the CDC. A total of seven CDC Epidemiological Assistance (Epi-Aids) have been requested and successfully completed. Large-scale studies have been carried out to collect data on walkability of the three major islands and to assess community emergency preparedness.





During 2014-2018, VIDOH-EPID and PHL collected and processed 3,356 Chikungunya; 3,946 dengue; and 5,899 diagnostic tests in collaboration with the CDC. The PHL continues to process Zika and suspect leptospirosis/melioidosis specimens. In 2018, the first Territorial PHL was installed, bringing the USVI closer to enhanced epidemiological and laboratory capacity.



## Disease Reporting in the USVI

The reporting of Nationally Notifiable Diseases (NNDs) to the Department of Health is required by law in the USVI. The complete USVI Notifiable Conditions 2019 list can be accessed [here](#) 

Disease reporting is carried out by completing two primary forms, the [Notification of Infectious Diseases Form \(EPI-1\)](#)  or the [Dengue, Chikungunya, Zika, and Febrile Illness Reporting Form \(EPI-2\)](#) . These forms are included in the next two pages for immediate referral. EPID has also developed disease-specific surveillance and investigation forms for case-based investigation requirements of all NNDs.

### WHAT

**In addition to NND conditions, any outbreaks, exotic diseases, and unusual group expression of disease must be reported.** All diseases shall be reported by name, age, sex, race/ethnicity, date of birth (DOB), address and Estate, telephone number, disease, date of onset, method of diagnosis, and name, address, and telephone number of physician.

### WHEN

The EPI-1 form in addition to the current year's list of notifiable diseases indicate when to report each condition. Cases or suspected cases of illness considered to be public health emergencies, outbreaks, exotic diseases, and unusual group expressions of disease must be reported to the VIDOH immediately. Other diseases for which there must be a quick public health response must be reported within one working day. All other conditions must be reported within four working days.

### HOW

Paper reporting forms are updated as needed, so [check for updates](#) regularly. As a last resort or in case of emergency (Category A, select Category B conditions or major outbreak/incident), reports can be made by telephone to the Territorial Epidemiologist at (340) 626-1654 as indicated in the EPI-1 form instructions.

### Summary

- Disease reporting of notifiable diseases to the VIDOH is required by law in the USVI.
- Unusual diseases or outbreaks of any kind should be reported immediately.
- Disease reporting is mediated by following instructions in the EPI-1 or EPI-2 forms. These and all investigation forms can be downloaded from the VIDOH website at <http://doh.vi.gov>



The reporting of nationally notifiable diseases to the Department of Health is required by law in the US Virgin Islands.





# Notification of Infectious Disease Form

Emergency Phone: (340) 626-1654, STX Office: (340) 718-1311 Ext. 3840, STX Fax: (340) 718-1508 | STT Office: (340) 774-7477 Ext. 5645, STT Fax: (340) 776-1506



This form may be used to report **suspected cases and cases of notifiable conditions** in the US Virgin Islands (USVI), listed with their reporting time frames on the current USVI Notifiable Conditions List 2019, available [here](#). In addition, any **outbreak, exotic disease, or unusual group expression of disease** that may be of public health concern should be reported by the most expeditious means available. A Health Department epidemiologist will contact you if further investigation is required.

Source of Information: <input type="checkbox"/> Private Physician <input type="checkbox"/> Private Laboratory <input type="checkbox"/> Hospital <input type="checkbox"/> Clinic <input type="checkbox"/> School		Date of Report: (mm/dd/yyyy)		Island: <input type="checkbox"/> St. Croix <input type="checkbox"/> St. John <input type="checkbox"/> St. Thomas <input type="checkbox"/> Water Island	
Name of Physician or Person Reporting		Physician/Reporter Address		Physician/Reporter Phone (____) _____ - _____ extension _____	
Admitted to Hospital? <input type="checkbox"/> No <input type="checkbox"/> Yes Date Admitted: _____ Date Discharged: _____		Disease Fatal? <input type="checkbox"/> No <input type="checkbox"/> Yes Date of Death: _____		Parent/Guardian: (if applicable)	
Patient Name (Last)		(First)	(MI)	Telephone: (____) _____ - _____ Other: _____	
Address (indicate ESTATE)		City	State	Zip Code	Country
Date of Birth (mm/dd/yyyy)	Age	Gender: <input type="checkbox"/> M <input type="checkbox"/> F <input type="checkbox"/> Other	Ethnicity: <input type="checkbox"/> Hispanic <input type="checkbox"/> Not Hispanic	Race: <input type="checkbox"/> Black <input type="checkbox"/> White <input type="checkbox"/> Asian <input type="checkbox"/> Unknown <input type="checkbox"/> Other:	
Notes, comments, or additional information such as <u>pregnancy status (EDD), occupation (food handler), school name/grade, daycare facility, travel history</u>					

## Category A -- Report IMMEDIATELY to the USVI Department of Health

SERIOUS PUBLIC HEALTH RISK. Make an IMMEDIATE telephone report to the USVI Department of Health at 626-1654 then send the completed form IMMEDIATELY (within 24 hrs) by fax to 776-1506 or 718-1508. If an immediate report is required after regular working hours, please call 626-1654.

- |   |  |  |  |   |  |
|---|--|--|--|---|--|
| <input type="checkbox"/> Acute Flaccid Myelitis             | <input type="checkbox"/> CP-CRE                | <input type="checkbox"/> <i>Haemophilus influenzae</i> | <input type="checkbox"/> Pertussis     | <input type="checkbox"/> Smallpox                                 | <input type="checkbox"/> Waterborne Outbreak |
| <input type="checkbox"/> Anthrax                            | <input type="checkbox"/> Diphtheria            | <input type="checkbox"/> Influenza, novel and seasonal | <input type="checkbox"/> Plague        | <input type="checkbox"/> Tuberculosis                             | <input type="checkbox"/> West Nile           |
| <input type="checkbox"/> Botulism                           | <input type="checkbox"/> <i>E. coli</i> (O157) | <input type="checkbox"/> Legionellosis                 | <input type="checkbox"/> Poliomyelitis | <input type="checkbox"/> Tularemia                                | <input type="checkbox"/> Yellow Fever        |
| <input type="checkbox"/> Brucellosis                        | <input type="checkbox"/> Encephalitis          | <input type="checkbox"/> Measles                       | <input type="checkbox"/> Rabies        | <input type="checkbox"/> Typhoid                                  |  |
| <input type="checkbox"/> Cholera                            | <input type="checkbox"/> Enterovirus D-68      | <input type="checkbox"/> Meningitis                    | <input type="checkbox"/> Rubella       | <input type="checkbox"/> Typhus                                   |  |
| <input type="checkbox"/> Coronavirus, novel, including SARS | <input type="checkbox"/> Foodborne Outbreak    |  | <input type="checkbox"/> Q Fever       | <input type="checkbox"/> Viral Hemorrhagic Fever, including Ebola |  |

## Category B -- Report WITHIN 48 HOURS to the USVI Department of Health

SIGNIFICANT PUBLIC HEALTH RISK. These should be reported within 48 hours to the USVI Department of Health. A completed copy of the form must be faxed to 776-1506. A telephone report to 626-1654 is only required for those diseases indicated by the (\*).

- |                                       |  |   |  |
|---------------------------------------|--|---|--|
| <input type="checkbox"/> Anaplasmosis | <input type="checkbox"/> Hansen's Disease*               | <input type="checkbox"/> HIV/AIDS                       | <input type="checkbox"/> Trichinosis           |
| <input type="checkbox"/> Chancroid    | <input type="checkbox"/> Hanta Virus Pulmonary Syndrome* | <input type="checkbox"/> Malaria                        | <input type="checkbox"/> Vancomycin Resistant: |
| <input type="checkbox"/> Chlamydia    | <input type="checkbox"/> Hemolytic Uremic Syndrome       | <input type="checkbox"/> Psittacosis                    | <input type="checkbox"/> <i>Enterococcus</i>   |
| <input type="checkbox"/> Ciguatera    | <input type="checkbox"/> Hepatitis A*                    | <input type="checkbox"/> Staph. aureus (drug resistant) | <input type="checkbox"/> Staph                 |
| <input type="checkbox"/> Ehrlichiosis | <input type="checkbox"/> Hepatitis B                     | <input type="checkbox"/> Streptococcus pneumoniae       |  |
| <input type="checkbox"/> Gonorrhea    | <input type="checkbox"/> Hepatitis C                     | <input type="checkbox"/> Syphilis*                      |  |

## Category C -- Report PROMPTLY WITHIN 96 HOURS to the USVI Department of Health

Should be reported promptly to the USVI Department of Health. A completed form must be faxed to 776-1506. Varicella cases should be reported by phone at 774-7477 Ext. 5646.

- |   |   |                                       |  |   |                                    |
|---|---|---------------------------------------|--|---|------------------------------------|
| <input type="checkbox"/> Babesiosis             | <input type="checkbox"/> Coccidioidomycosis | <input type="checkbox"/> Giardia      | <input type="checkbox"/> Mumps         | <input type="checkbox"/> Spotted Fever        | <input type="checkbox"/> Vibriosis |
| <input type="checkbox"/> Campylobacter          | <input type="checkbox"/> Cryptosporidiosis  | <input type="checkbox"/> Listeriosis  | <input type="checkbox"/> Salmonellosis | <input type="checkbox"/> Tetanus              |                                    |
| <input type="checkbox"/> Chickenpox (varicella) | <input type="checkbox"/> Cyclosporiasis     | <input type="checkbox"/> Lyme Disease | <input type="checkbox"/> Shigellosis   | <input type="checkbox"/> Toxic Shock Syndrome |                                    |

Other disease, please specify:

Diagnosis Status <input type="checkbox"/> Suspect Case <input type="checkbox"/> Confirmed Case		Clinical Information Treatment Provided? <input type="checkbox"/> No <input type="checkbox"/> Yes Specify Treatment: _____	
Diagnostic Criteria: <input type="checkbox"/> Symptoms <input type="checkbox"/> Laboratory		Earliest Symptom Onset Date: _____ (mm/dd/yyyy)	Clinical Symptoms: _____

Laboratory Results:		
Date 1 (mm/dd/yyyy)	Test Name 1	Result 1
Date 2 (mm/dd/yyyy)	Test Name 2	Result 2
Date 3 (mm/dd/yyyy)	Test Name 3	Result 3

Information collected is confidential pursuant to the Health Insurance Portability and Accountability Act of 1996 (HIPAA) and reports will be maintained by the US Virgin Islands Department of Health. All reports other than HIV should be faxed to Dr. Esther Ellis at 718-1508 (Charles Harwood Complex, 3500 Estate Richmond, Christiansted, St. Croix, VI 00820). HIV/STD reports should be forwarded to the HIV/STD Program Charles Harwood Complex on St. Croix (Fax: 776-1506) and to the HIV/STD Program Knud Hansen Complex on St. Thomas (Fax: 776-1506). PLEASE NOTE: THE REPORTING OF NOTIFIABLE DISEASES TO THE DEPARTMENT OF HEALTH IS REQUIRED BY LAW IN THE US VIRGIN ISLANDS. Fulfilling this requirement will by no means negate your responsibility to report similar information to other agencies or programs with which you have collaborative agreements.





# Disease Surveillance and Trends in the USVI

The National Notifiable Disease Surveillance System (NNDSS) serves as a mechanism for Local, State and Territorial health agencies to notify the CDC of notifiable cases that present a public health concern. Efforts to implement the Virgin Islands National Electronics Disease Surveillance System (VI-NEDSS) Base System (NBS) began in 2014 with the arrival of Dr. Esther Ellis, Territorial Epidemiologist, to the USVI.

## Report Specifics

This report provides an overview of the cases, reported within the USVI from 2014-2018, separated by program area and case status. Condition case status contained within this report are listed based on reporter designated status of confirmed or suspect/probable. As previously discussed, in some cases if necessary, an epidemiological investigation would determine final case status. *This report excludes cases under the jurisdiction of the Communicable Diseases Division; specifically the Sexually Transmitted Diseases (STD), Human Immunodeficiency virus (HIV), and Tuberculosis (TUB) program areas.*

## Demographics

Demographic information is collected with every EPI-1 form or case-based investigation. As of 31 December 2018, 2,026 case reports have been entered, including cases from excluded program areas. Moreover, 12,524 electronic laboratory reports (ELR) have been entered, of which 7,415 are under the excluded program areas. In EPI-1 reported events, 942 (46%) cases were male, 1,067 (53%) were female, 3 (0.2%) were marked unknown and 14 (0.8%) were left blank. Median age is 36 (range 0—102). The two highest represented races were Black/African American with 684 (34%) cases and White with 203 (10%) cases (see Table 1 on page 20 for additional descriptive information including data gaps in provider-generated reports).

## Foodborne and Diarrheal Diseases (FDD) Surveillance

There are 68 confirmed foodborne illness EPI-1 case reports in VI-NEDSS. Confirmed case counts are as follows: 1 (2%) case of cryptosporidiosis, 15 (22%) cases of giardiasis, 45 (66%) cases of salmonellosis, 4 (6%) cases of shigellosis, and 3 (4%) cases of staphylococcal enterotoxin (Figure 1). ELR data shows 1 case of campylobacteriosis, 8 cases of giardiasis, and 7 cases of salmonellosis.

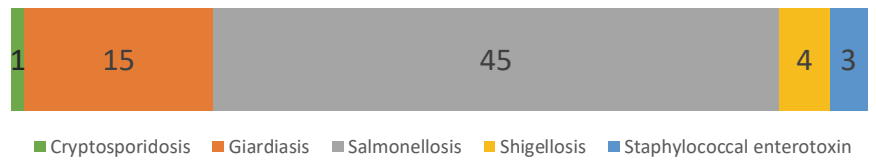


Territorial Epidemiologist and VIDOH-EPID staff carry-out Community Assessment for Public Health Emergency Response (CASPER) household surveys in November 2017.





Figure 1. Total Case Counts of Select Reportable Enteric Diseases, USVI, 2014-2018

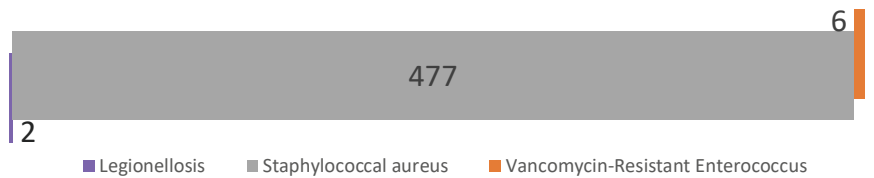


A US Public Health Service partner provides community outreach education for Zika awareness, February 2017.

### General Communicable Diseases (GCD)

Confirmed cases counts are as follows: 477 (98%) cases of *Staphylococcal aureus*, and 6 (1%) vancomycin-resistant *Enterococcus*, and 2 (<0.5%) cases of legionellosis (Figure 2).

Figure 2. Total Case Counts of CGD, USVI, 2014-2018



Carbapenem-resistant organisms are an emerging pathogen VIDOH-EPID is monitoring as well. Because of an outbreak at a single facility in March 2017, carbapenemase producing carbapenem-resistant Enterobacteriaceae (CP-CRE) and other organisms showing resistance became a notifiable condition in the USVI in 2018.

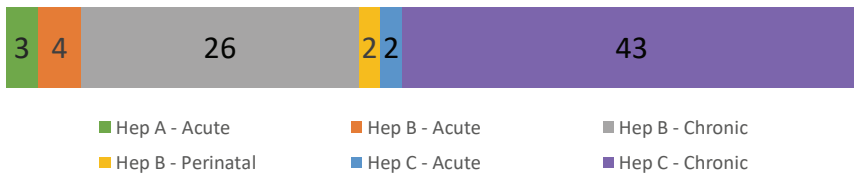
VIDOH-EPID investigated reports of 8 laboratory confirmed CRE between 4 March and 31 March 2017. Community-acquired (CA) cases were defined if CRE was present on admission or before the fourth hospital day. Hospital-acquired (HA) cases were defined as present on or after the fourth hospital day. We conducted retrospective chart review to collect patient demographic, risk-factor data, lab tests results and patient outcome. To read complete abstract click the following icon\*

### Hepatitis (Hep) Surveillance

There are 80 confirmed EPI-1 case reports in VI-NEDSS. Confirmed case counts are as follows: 3 (4%) acute HepA, 4 (5%) acute Hep B, 26 (33%) chronic Hep B, 2 (3%) perinatal Hep B, 2 (3%) acute Hep C, and 43 (54%) chronic Hep C (Figure 3).

*\*By clicking this icon you can access URL abstracts throughout this report.*

Figure 3. Total Case Counts of Hepatitis, USVI, 2014-2018



## Influenza Surveillance

**Healthcare provider participation for the reporting of influenza and influenza-like illness (ILI) remains low.** EPID reports weekly to the [U.S. Outpatient Influenza-like Illness Surveillance Network \(ILINet\)](#) which is used to produce a national weekly influenza surveillance report called [FluView](#).

Information on patient visits to health care providers for influenza-like illness is collected through ILINet. ILINet consists of more than 2,800 enrolled outpatient healthcare providers in all 50 states, Puerto Rico, the District of Columbia and the USVI reporting more than 39 million patient visits each year. Each week, approximately 2,000 outpatient healthcare providers around the country report data to CDC on the total number of patients seen for any reason and the number of those patients with ILI by age group (0-4 years, 5-24 years, 25-49 years, 50-64 years, and ≥65 years).

For this system, ILI is defined as fever (temperature of 100°F [37.8°C] or greater) and a cough and/or a sore throat without a known cause other than influenza. Sites with electronic health records use an equivalent definition as determined by public health authorities.

There are 182 confirmed EPI-1 case reports in VI-NEDSS. Confirmed case counts are as follows: 6 (3%) reported as influenza outbreak, 175 (96%) influenza, and 1 (<0.5%) reported as novel Type A. ELR reports show 14 confirmed influenza cases.

For questions regarding the Influenza Surveillance Program or if you wish to inquire about becoming an ILINet partner, please call (340) 718-1311 Ext. 3840 or email [joy.joseph@doh.vi.gov](mailto:joy.joseph@doh.vi.gov)



**Dr. Tai Hunte-Cesar**  
Territorial  
Infectious Disease Specialist  
St. Thomas East End  
Medical Center

**“I WOULD LIKE TO REMIND YOU THAT THE VIRGIN ISLANDS INFLUENZA SEASON FOLLOWS A SOMEWHAT DELAYED ONSET COMPARED TO THE CONTINENTAL US. WHILE INFLUENZA CASES PEAK OVER WINTER IN THE US, OUR PEAK MAY NOT OCCUR UNTIL LATER IN THE YEAR. DURING INFLUENZA SEASONS 2015-2017, REPORTED CASES PEAKED DURING MMWR WEEKS 24 AND 22 RESPECTIVELY. IN 2018 INFLUENZA SEASON PEAKED IN FEBRUARY OR MMWR WEEKS 5-7.”**



2019-2020 US Virgin Islands  
Classroom Handbook of  
Vaccine Preventable Diseases

Revised May 2019  
Vaccine Preventable Diseases Surveillance Program

Download the 2019-2020  
Classroom Handbook of Vaccine  
Preventable Diseases [here](#)

This manual contains important  
guidance for VPD reporting, VPD  
control measures and exclusion  
criteria, USVI immunization  
guidelines and requirements for  
school entry, and many hyperlinked  
resources.

**VPD-22**  
Revised July 2017

**Varicella Reporting and Investigation Form**

Complete in addition to the Notification of Infectious Disease Form (NID-5) in the event of an outbreak; additional forms and specimen collection are required for testing. \*VIDOH-EPI staff will coordinate additional specimens and investigations.

**Patient Information**

Source of information:  Private Physician  Private Laboratory  Today's Date:  Island:  St. John  St. Thomas  St. John Island  
 Hospital  Clinic  School

Reporting Person: \_\_\_\_\_ Reporting Address: \_\_\_\_\_ Reporting Phone: \_\_\_\_\_

Parent/Guardian (if applicable): \_\_\_\_\_

Patient Name (Last) (First) (MI) Telephone: (\_\_\_\_) \_\_\_\_\_

Address: \_\_\_\_\_ City: \_\_\_\_\_ State: \_\_\_\_\_ Zip Code: \_\_\_\_\_ County: \_\_\_\_\_

Date of Birth: \_\_\_\_\_ Age: \_\_\_\_\_ Gender:  Male  Female Ethnicity:  Hispanic  Black  White  Asian  
Marital Status:  Married  Single  Never Married Race:  Unknown  Other

**Laboratory Information**

Other  Private Lab  Contract Lab

2. Diagnostic Criteria:  Symptom  Laboratory

3. How was the information obtained?  Face-to-face visit  Phone call with case or parent  Other, specify: \_\_\_\_\_

4. Types of specimen collected:  Vesicular swab  Measles/swab scraping  Chancriform  Buccal swab  Other, specify: \_\_\_\_\_

**Clinical**

Date of Rash Onset: (mm/yy) \_\_\_\_\_ Total # of lesions:  <50  50-249  250-500  >500

Where did the rash first appear?  Face/head  Trunk/torso  Extremities  Other, specify: \_\_\_\_\_

Rash type:  Morbilliform  Erythematous  Maculopapular  Vesicular  Other, specify: \_\_\_\_\_

Distribution:  Face/head  Trunk/torso  Arms  Legs  Other, specify: \_\_\_\_\_

Lesion characteristics:  Maculopapular  Vesicular  Other, specify: \_\_\_\_\_

Are there lesions on more than one body part?  Yes  No

Systemic symptoms:  Yes  No

Diagnosis:  Confirmed  Suspected  Unknown

Age when lesions were first observed: \_\_\_\_\_

Has patient been hospitalized?  Yes  No

Has patient died?  Yes  No

**Vaccine History**

Has patient previously received varicella vaccine?  Yes  No  Unknown

Vaccine #1 date (mm/yy): \_\_\_\_\_ Vaccine #1 type: \_\_\_\_\_ Vaccine #1 manufacturer: \_\_\_\_\_ Vaccine #1 lot #: \_\_\_\_\_

Vaccine #2 date (mm/yy): \_\_\_\_\_ Vaccine #2 type: \_\_\_\_\_ Vaccine #2 manufacturer: \_\_\_\_\_ Vaccine #2 lot #: \_\_\_\_\_

**Epidemiological**

Attendees:  School/Classroom  Home  Other, specify: \_\_\_\_\_

Occupation: \_\_\_\_\_ Family Name: \_\_\_\_\_

Occupation and Teacher: \_\_\_\_\_ Family Phone: \_\_\_\_\_

How long have you lived in the USVI? \_\_\_\_\_ Country of birth: \_\_\_\_\_

Prior to onset of rash, was this case exposed to another confirmed or probable case?  Yes  No  Unknown

Download the varicella  
investigation form (VPD-22) which  
includes enhanced surveillance  
variables [here](#)

## Vaccine Preventable Diseases (VPDs) Surveillance

**Healthcare provider participation for the reporting of VPDs remains low.** Investigation and communication of VPD case reports are generally not timely, do not have complete key variables, and we suspect gross underreporting. Confirmed EPI-1 case reports in the period of 2014-2018 are as follows: 8 (89%) varicella and 1 (11%) mumps.

It is important to remember that these numbers are based on provider reports and do not reflect actual numbers. For example, VIDOH has received community-generated reports of provider diagnosed cases of pertussis (whooping cough) but has not received official reports to validate this information.

The purpose of national and Territorial VPD surveillance indicators, is to ensure adequate performance of the essential components of surveillance and case investigation, and to identify components of each that need improvement. For a complete list on VPD indicators click [here](#). Although these indicators have been useful for identifying major problems with case investigation and reporting, given the small number of cases of most VPDs now reported in the US/USVI, a critical issue remaining is the sensitivity of the surveillance system: *does the absence of cases from a particular jurisdiction indicate that there were in fact no cases?*

### Three VPDs require enhanced surveillance measures:

- [Acute Flaccid Myelitis](#)
- [Meningococcal disease \(\*Neisseria meningitidis\*\)](#)
- [Chickenpox \(varicella\)](#)

For the USVI, enhanced surveillance means that we collect additional variables so we can understand why we are seeing cases in the community in light of vaccination coverage.

As an effort to enhance VPD and overall disease surveillance, VIDOH is working on efforts to encourage provider reporting, promoting awareness of reporting requirements, and giving frequent and relevant feedback through workshops and 1:1 provider visits, the quarterly [EpiTalk newsletter](#), and this report.

For questions regarding the Vaccine Preventable Diseases Surveillance Program please call (340) 774-7477 Ext. 5646 or email [irene.guendel@doh.vi.gov](mailto:irene.guendel@doh.vi.gov)



## Arboviral Surveillance

Arboviral refers to any of a group of viruses that are transmitted by mosquitoes, ticks, or other arthropods. Examples include Zika, Chikungunya, dengue, West Nile and Yellow Fever. EPID uses a specialized database called ArboNET for arboviral surveillance, however, sometimes cases are reported and included into VINEDSS through electronic laboratory reports (ELRs). In addition to human disease, ArboNET maintains data on arboviral infections among presumptive viremic blood donors, veterinary disease cases, mosquitoes, dead birds, and sentinel animals.

For the Zika outbreak, beginning January 2016 through December 2018 for the purpose of this report, a total of 2,305 suspect Zika cases were reported (not including pregnant women) with 1,032 cases resulting positive. Sixty-six percent (66%) of confirmed cases are female. Total confirmed cases are as follows:

SYMPTOMATIC		PREGNANT	
Reported	2,305	Reported	3,583
Confirmed	1,032	Confirmed	292
Negative	1,263	Negative	3,288
Pending	8	Pending	3
No specimen	5	No specimen	0

Symptomatic Zika cases reported by island through December 2018 are as follows: 1,311 reported and 685 confirmed in STT, 153 reported and 89 confirmed in STJ, and 841 reported and 258 confirmed in STX.

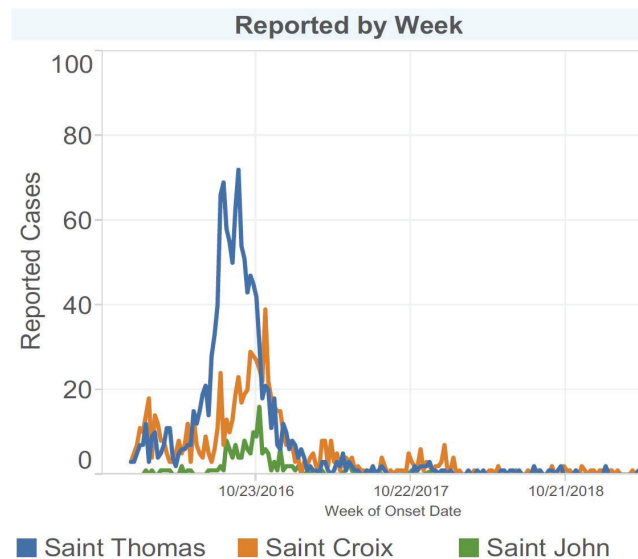
## Zika Surveillance and the U.S. Zika Pregnancy and Infant Registry (USZPIR)

Since February 2016, VIDOH-EPID has been working to monitor the Zika outbreak and the effects of maternal Zika infection in the USVI. VIDOH has collaborated with laboratories, hospitals, obstetricians/gynecologists, pediatricians, and other community partners and government agencies to provide services to the community for prevention and care. In 2016-2018 VIDOH tested 3,583 pregnant women with 292 resulting positive for Zika. Out of 292 pregnancies, in collaboration with the Maternal Child Health Division of the VIDOH, EPID is following 156 infants born to Zika positive mothers at 2, 6, 12, 18, and 24 months to ensure development is occurring as expected. These infants represent the cohort that has not been lost to follow-up, transferred out of jurisdiction, neonatal death, stillbirth, miscarriage or termination. Data on Zika cases are stored in our local ArboNET database and pregnant cases and infants are reported to the USZPIR.




**Cosme Harrison  
Leah de Wilde**  
USZPIR Epidemiologists  
Epidemiology Division

**“THROUGH OUR SURVEILLANCE EFFORTS WE CAN SEE THAT THE ZIKA OUTBREAK PEAKED IN SAINT THOMAS IN SEPTEMBER 2016, WITH A SLIGHTLY DELAYED PEAK IN SAINT CROIX IN OCTOBER-NOVEMBER. SAINT JOHN PEAKED AROUND OCTOBER 2016.”**



**Epidemiological curve for Zika cases reported by week of symptom onset date, starting January 2016 through December 2018.**



In March 2018, VIDOH provided free recommended pediatric health screenings for infants born to mothers with laboratory evidence of Zika virus exposure during pregnancy. The health brigade specialists provided age-appropriate vision, hearing, neurological, and developmental screenings. To access the complete Zika Brigade publication, click [here](#) 



VIDOH-EPID staff performs free Zika testing for symptomatic individuals or pregnant women, February 2017.

VIDOH has partnered with several clinics and laboratories to provide Zika virus testing at no cost to patients. Pregnant women and people who develop Zika virus symptoms (fever, rash, joint pain, red eyes) should see their healthcare provider to discuss their risk for Zika and their testing and care options. You can get a free Zika test at the following locations. **Those in bold provide testing to patients only:**

*Saint Croix —*

- Acute Alternative Medical Group | (340) 772-2883
- Clinical Laboratory, Inc. (Sunny Isle Medical Center) | (340) 778-5369
- Department of Health, Charles Harwood Complex (Old Hospital) | (340) 718-1311 Ext. 3827
- Frederiksted Health Care, Inc. (All Locations) | (340) 772-0260
- Primary Care St. Croix, PLLC | (340) 718-7788**
- Primary Care GYN, PLLC | (340) 773-2273**

*Saint John —*

- Myrah Keating Smith Community Health Center | (340) 693-8900
- Cruz Bay Family Practice | (340) 776-6789**

*Saint Thomas —*

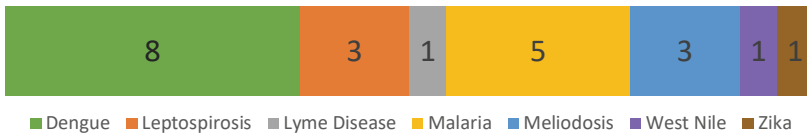
- Ambulatory Care Clinic | (340) 777-6423
- Center for Integrative Medicine | (340) 776-4325**
- Carolyn Jones Family Medicine | (340) 774-2331**
- Community Medical Laboratory | (340) 776-7444
- Cranston/Dottin Biomedical Laboratory | (340) 774-6256
- Doctors Clinical Laboratory | (340) 774-2760
- Havensight Medical Laboratory | (340) 774-5515
- Dr. Livingston Family Medicine | (340) 715-0234**
- Red Hook Family Practice | (340) 775-2303**
- Schneider Regional Medical Center Laboratory | (340) 774-9000
- Saint Thomas East End Medical Center | (340) 775-3700**
- Yacht Haven Grande Family Practice | (340) 776-1511**

If you would like to report a suspected case of Zika please complete an EPI-2 form (page 11) and have the patient visit one of our partnering laboratories. If you have any questions or concerns, call (340) 718-1311 Ext. 3840 or (340) 626-1654. In addition, you can email [cosme.harrison@doh.vi.gov](mailto:cosme.harrison@doh.vi.gov), [leah.dewilde@doh.vi.gov](mailto:leah.dewilde@doh.vi.gov), or [esther.ellis@doh.vi.gov](mailto:esther.ellis@doh.vi.gov).

## Vectorborne and Environmental Diseases

Confirmed EPI-1 case counts in VI-NEDSS are as follows: 8 (36%) dengue\*, 3 (14%) leptospirosis, 1 (5%) Lyme disease, 5 (22%) imported malaria cases,\*\* 3 (14%) melioidosis, 1 (5%) imported West Nile, and 1 (5%) Zika\* (Figure 4). ELR reports show 4 confirmed cases of Zika.

Figure 4. Total Case Counts of Select Vector-borne and Environmental-related Diseases, USVI, 2014-2018



If you have any questions or concerns, call (340) 718-1311 Ext. 3841 or (340) 626-1654. In addition, you can email [esther.ellis@doh.vi.gov](mailto:esther.ellis@doh.vi.gov).

\*These dengue and Zika EPI-1 reports are cases that were processed outside of our arboviral surveillance system (ArboNET) as ordered by individual healthcare providers.

\*\*The USVI does have a mosquito species that can carry the malaria parasite: *Anopheles albimanus*. However, presence of a vector does not equal endemicity and there is no evidence of local transmission or endemicity Territorially.

## VI-NEDSS Utilization, 2014-2018

The following VIDOH divisions contribute cases to VI-NEDSS: Communicable Diseases Division and EPID. The Immunization Program coordinates surveillance for perinatal Hep B cases and will start using NEDSS in 2019.

The earliest reported entry occurred in 2014, and there is a positive trend in VI-NEDSS from 2014-2018, however, **there was a 12% decrease in reporting from 2017-2018 (Figure 5)**. There are 2,026 total EPI-1 reports in VI-NEDSS: 34 (2%) in 2014, 208 (10%) in 2015, 348 (17%) in 2016, 764 (38%) in 2017, and 672 (33%) in 2018.

This 2017-2018 decrease highlights the importance of strengthening reporting requirements knowledge in the healthcare stakeholder community. It is important to note considering that there is a 2017 reporting gap due to Hurricanes Irma and Maria.



Territorial Epidemiologist and CDC partners provide a clinical training workshop for local healthcare providers in both districts, July 2016.

Image: Saint Thomas Source



The beginning of the VIDOH Zika Operations Center headquarters in Saint Croix, established in early February 2016 by VIDOH-PHEP and EPID in collaboration with the CDC.

Image: Saint Croix Source





Currently, VIDOH-EPID focuses on infectious disease surveillance. However, epidemiology encompasses a much broader subject range. In May 2016, VIDOH and CDC carried out a Territorial walkability study to assess road and sidewalk conditions. A total of 26 VIDOH staff volunteers were trained. Two volunteers survey randomly selected road in Saint Croix [↗](#)

Figure 5. Total EPI-1 report counts, USVI, 2014-2018

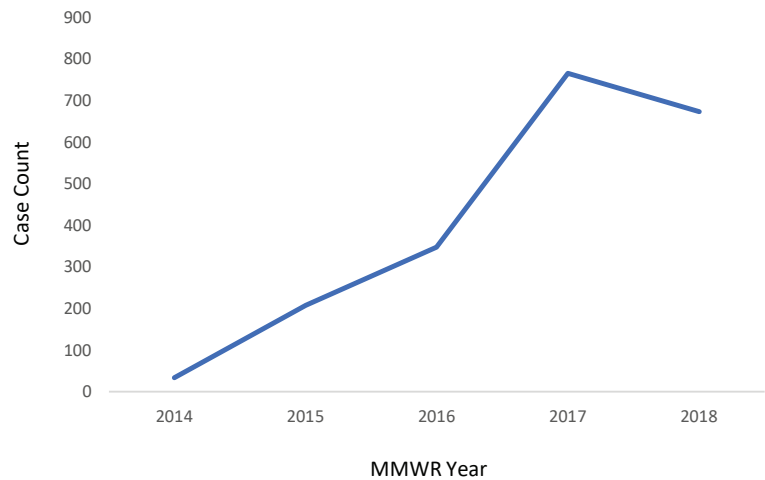


Table 1. Demographic, case status, and jurisdiction data

	Count (n=2,026)	%
<b>RACE</b>		
Black or African American	684	33.8
White	203	10.0
American Indian or Alaska Native	4	0.2
Asian	3	0.1
Native Hawaiian or Other Pacific Islander	2	0.1
Other Race	8	0.4
Refused	5	0.2
<b>Unknown</b>	180	8.9
<b>Blank</b>	937	46.2
<b>ETHNICITY</b>		
Hispanic or Latino	153	7.6
Not Hispanic	641	31.6
<b>Blank</b>	1,232	60.8
<b>GENDER</b>		
Female	1,067	52.7
Male	942	46.5
<b>Unknown</b>	3	0.1
<b>Blank</b>	14	0.7
<b>CASE STATUS</b>		
Confirmed	1,375	67.9
Probable	16	0.8
Suspect	85	4.2
Not a Case	131	6.5
<b>Unknown</b>	5	0.2
<b>Blank</b>	414	20.4
<b>JURISDICTION</b>		
STT	1,036	51.1
STJ	163	8.0
WI	1	0.0
STX	791	39.0
Tourist	6	0.3
<b>Not Determined</b>	29	1.4

### Using This Preliminary Data

This preliminary data is key in preparing data feedback for providers and the public. We look forward to your feedback and for the continuance of our collaborations!

## Disaster Epidemiology: Hurricanes Irma and Maria, 2017

Disaster Epidemiology is defined as the use of epidemiology to assess the short- and long-term adverse health effects of disasters and to predict consequences of future disasters. It brings together various topic areas of epidemiology including acute and communicable disease, environmental health, occupational health, chronic disease, injury, mental health, and behavioral health.

VIDOH-EPID and PHL staff were activated following Hurricane Irma in September 2017. Together with VIDOH-PHEP and other VIDOH staff, the Saint Thomas/Saint John internal Emergency Operations Center was established at the Community Health Clinic conference room in Schneider Regional Medical Center, and at Charles Harwood Complex following Hurricanes Irma and Maria.

VIDOH-EPID staff served multiple functions under the Incident Command System and actively participated in Territorial response efforts. Collectively, VIDOH-EPID and PHL staff collaborated with Federal partners as follows:

- Served as VIDOH representatives in meetings at the Virgin Islands Territorial Emergency Management Agency involving Task Forces dedicated to environmental health assessments.
- Worked with the United States Public Health Service (USPHS), CDC and the Environmental Protection Agency (EPA) to establish, monitor or carry out water sampling plan at schools.
- Worked with USPHS and CDC to obtain child care center and school lists and maps for environmental health and food assessments.
- Collaborated with EPA and the Department of Planning and Natural Resources to coordinate tap water/cistern sampling with VIDOH follow-up and enforcement regarding mass-feeding centers or re-opening of schools, restaurants, and supermarkets.
- Performed shelter surveillance to monitor health trends on all active Territorial shelters until closed.
- Performed epidemiological investigations for the first reported cases of leptospirosis (3 confirmed) and melioidosis (3 confirmed) in the USVI.
- Provided continuous education to schools and at-risk populations regarding emerging infectious diseases such as leptospirosis/melioidosis and hand-foot-and-mouth in schools.
- Performed three additional Community Assessments for Public Health Emergency Response (CASPER) surveys in November 2017, February and November 2018 to measure changing needs in the community. These data were compared to the July 2017 CASPER.



**VIDOH-EPID “disease detectives” investigate the first reported case of leptospirosis in the aftermath of Hurricanes Irma and Maria, Saint Thomas, October 2017.**

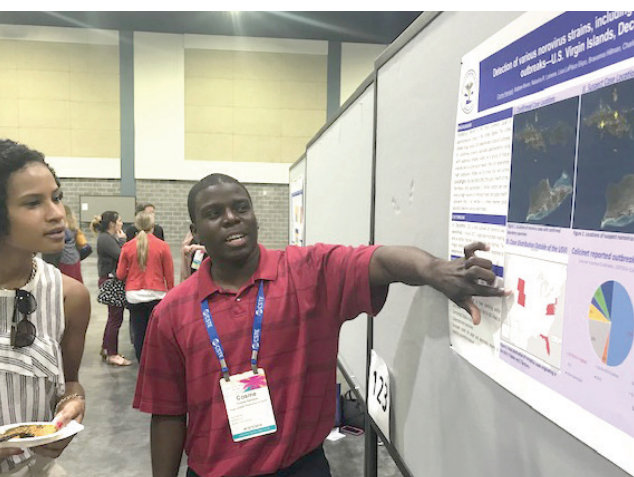


**VIDOH-EPID staff investigate Territorial disaster mortality, January 2018.**



## Scientific Publications 2014-2018

1. Kulkarni PA, Duncan MA, Watters MT, Graziano LT, Vaouli E, Cseh LF, Risher JF, Orr MF, Hunte-Cesar TC, Ellis EM. **Severe Illness from Methyl Bromide Exposure at a Condominium Resort--U.S. Virgin Islands, March 2015.** MMWR Morb Mortal Wkly Rep. 64(28):763-6 (2015) [↗](#)
2. Feldstein LR, Ellis EM, Rowhani-Rahbar A, Halloran ME, Ellis BR. **The First Reported Outbreak of Chikungunya in the U.S. Virgin Islands, 2014-2015.** Am J Trop Med Hyg. 95(4):885-889 (2016) [↗](#)
3. Cherry CC, Beer KD, Fulton C, Wong D, Buttke D, Staples JE, Ellis EM. **Knowledge and use of prevention measures for chikungunya virus among visitors - Virgin Islands National Park, 2015.** Travel Med Infect Dis. 14(5):475-480 (2016) [↗](#)
4. Feldstein LR, Rowhani-Rahbar A, Staples JE, Weaver MR, Halloran ME, Ellis EM. **Persistent Arthralgia Associated with Chikungunya Virus Outbreak, US Virgin Islands, December 2014-February 2016.** Emerg Infect Dis. (4):673-676 (2017) [↗](#)
5. Killerby ME, Stuckey MJ, Guendel I, Sakthivel S, Lu X, Erdman DD, Schneider E, Fagan R, Davis MS, Watson JT, Gerber SI, Biggs HM, Ellis EM. **Notes from the Field: Epidemic Keratoconjunctivitis Outbreak Associated with Human Adenovirus Type 8 - U.S. Virgin Islands, June-November 2016.** MMWR Morb Mortal Wkly Rep. 66(30):811-812 (2017) [↗](#)
6. Prue CE, Roth JN Jr, Garcia-Williams A, Yoos A, Camperlengo L, DeWilde L, Lamtahri M, Prosper A, Harrison C, Witbart L, Guendel I, Wiegand DM, Lamens NR, Hillman B, Davis MS, Ellis EM. **Awareness, Beliefs, and Actions Concerning Zika Virus Among Pregnant Women and Community Members - U.S. Virgin Islands, November-December 2016.** MMWR Morb Mortal Wkly Rep. 66(34):909-913 (2017) [↗](#)
7. Lindsey NP, Staples JE, Powell K, Rabe IB, Fischer M, Powers AM, Kosoy OI, Mossel EC, Munoz-Jordan JL, Beltran M, Hancock WT, Toews KE, Ellis EM, Ellis BR, Panella AJ, Basile AJ, Calvert AE, Laven J, Goodman CH, Gould CV, Martin SW, Thomas JD, Villanueva J, Mataia ML, Sciulli R, Gose R, Whelen AC, Hills SL. **Ability To Serologically Confirm Recent Zika Virus Infection in Areas with Varying Past Incidence of Dengue Virus Infection in the United States and U.S. Territories in 2016.** J Clin Microbiol. 56(1). pii: e01115-17 (2017) [↗](#)



VIDOH-EPID staff explains findings on the 2016-2017 USVI norovirus outbreaks, CSTE 2018 [↗](#)



VIDOH-EPID staff present "Public health surveillance in the aftermath of Hurricanes Irma and Maria," CSTE 2018 [↗](#)



8. Feldstein LR, Rowhani-Rahbar A, Staples JE, Halloran ME, Ellis EM. **An Assessment of Household and Individual-Level Mosquito Prevention Methods during the Chikungunya Virus Outbreak in the United States Virgin Islands, 2014-2015.** Am J Trop Med Hyg. 98(3):845-848 (2018) [↗](#)

9. Omura JD, Ussery EN, Carlson SA, Arnold-Lewis K, Orr J, McGuire DO, Lewis L, Paul P, Peterson EL, Fulton JE, Ellis EM. **Community and Street-Scale Supports for Walking in the US Virgin Islands Before the 2017 Hurricanes.** Am J Public Health. 108(8):1055-1058 (2018) [↗](#)

10. Rice ME, Galang RR, Roth NM, Ellington SR, Moore CA, Valencia-Prado M, Ellis EM, Tufa AJ, Taulung LA, Alfred JM, Pérez-Padilla J, Delgado-López CA, Zaki SR, Reagan-Steiner S, Bhatnagar J, Nahabedian JF 3rd, Reynolds MR, Yeargin-Allsopp M, Viens LJ, Olson SM, Jones AM, Baez-Santiago MA, Oppong-Twene P, VanMaldeghem K, Simon EL, Moore JT, Polen KD, Hillman B, Ropeti R, Nieves-Ferrer L, Marcano-Huertas M, Masao CA, Anzures EJ, Hansen RL Jr, Pérez-Gonzalez SI, Espinet-Crespo CP, Luciano-Román M, Shapiro-Mendoza CK, Gilboa SM, Honein MA. **Vital Signs: Zika-Associated Birth Defects and Neurodevelopmental Abnormalities Possibly Associated with Congenital Zika Virus Infection - U.S. Territories and Freely Associated States, 2018.** MMWR Morb Mortal Wkly Rep. 67(31):858-867 (2018) [↗](#)

11. Hennessey MJ, Ellis EM, Delorey MJ, Panella AJ, Kosoy OI, Kirking HL, Appiah GD, Qin J, Basile AJ, Feldstein LR, Biggerstaff BJ, Lanciotti RS, Fischer M, Staples JE. **Seroprevalence and Symptomatic Attack Rate of Chikungunya Virus Infection, United States Virgin Islands, 2014-2015.** Am J Trop Med Hyg. 99(5):1321-1326 (2018) [↗](#)

12. Wolkin AF, Schnall AH, Nakata NK, Ellis EM. **Getting the Message Out: Social Media and Word-of-Mouth as Effective Communication Methods during Emergencies.** Prehosp Disaster Med. 26:1-6 (2018) [↗](#)

## Conferences & Workshops

- Epidemiology and Laboratory Capacity Cooperative Agreement Annual Meeting
- Council of State and Territorial Epidemiologists (CSTE) Annual Meeting
- CSTE Disaster Epidemiology Workshops
- ID Week - Infectious Diseases Society of America
- Open Science Forum for Latin America and the Caribbean



VIDOH-EPID staff presents epidemic keratoconjunctivitis outbreak findings, CSTE 2017.



VIDOH-Vector Control Program staff receive vector control and mosquito identification training in Fort Collins, CO, 2018.

## What Lies Ahead - 2019 and Beyond

**Protecting the USVI:** Working with healthcare providers to deliver timely disease reporting to VIDOH-EPID, and to disseminate up-to-date, data-driven guidelines and recommendations for public health partners and the public.

**Strengthening partnerships:** Working with interdepartmental and interagency colleagues to establish critical collaborations that will enhance public health surveillance projects.

**Taking a closer look at healthcare associated infections (HAI):** Establishing the first Territorial Infection Control Advisory Group between VIDOH and Territorial hospital Infection Control Coordinators and other key stakeholders.

**Monitoring health in schools:** Piloting school health surveillance through student absenteeism in collaboration with key stakeholders.

**Establishing disease burden baselines:** Utilizing VI-NEDSS data to estimate annual disease burdens for confirmed cases in order to more readily detect anomalies.

**Increasing laboratory capacity:** Completing the establishment of the first Territorial PHL including the Clinical Laboratory Improvement Amendments (CLIA) certification, finalizing standard operating procedures and protocols, and hiring additional technical staff for laboratory operation.

**Increasing disease reporting requirements knowledge:** Exploring annual mandatory training for all healthcare providers wishing to practice in the USVI through the licensing renewal process.

**Increasing national awareness of USVI:** Highlighting successes and challenges we face through representation at national conferences (poster and oral presentations) and timely publications of notable investigations if possible.

## Happy to Help!

If you are a healthcare provider or laboratory and are interested in learning more about the Epidemiology Division or to request more information and set up a site-visit appointment, please [contact us!](#)



VIDOH-EPID staff presents data on pregnancy outcomes after maternal Zika infection, CSTE 2018 [↗](#)



VIDOH-EPID staff provide mosquito bite prevention information to the community, Saint John, March 2017.

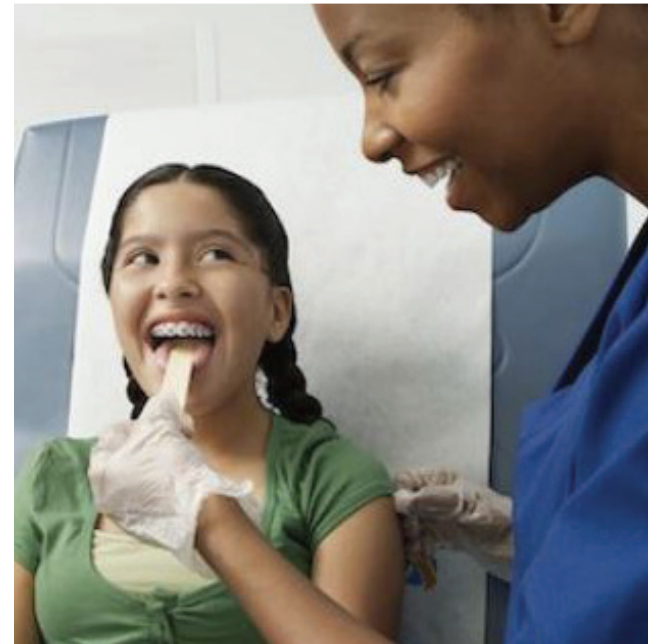
# KNOW

## the reporting tools

- General Surveillance Forms at [bit.ly/surveillance-vi](http://bit.ly/surveillance-vi)
- Vaccine Preventable Diseases Investigation Forms at [bit.ly/vpd-case](http://bit.ly/vpd-case)
- Disease Reporting Training for School Nurses and Administrators at [bit.ly/drt-vi](http://bit.ly/drt-vi)
- Classroom Manual for Vaccine Preventable Diseases 2019-2020 at [bit.ly/drt-vi](http://bit.ly/drt-vi)
- Job Aid for Clinicians for collecting the correct specimens for enhanced surveillance of vaccine preventable diseases at [bit.ly/vpd-lab](http://bit.ly/vpd-lab)
- Handouts and slides for the May 2019 measles update for healthcare stakeholders at [bit.ly/measles-vi](http://bit.ly/measles-vi)

**“ONLY YOU CAN HELP US MONITOR  
DISEASE TRENDS IN OUR  
COMMUNITY. THANK YOU FOR  
REPORTING NATIONALLY NOTIFIABLE  
DISEASES TO VIDOH AS WE  
STRIVE FOR A HEALTHIER  
US VIRGIN ISLANDS.”**

**— JUSTA ENCARNACION —  
Health Commissioner**



Top Image: iStock  
Bottom Image: Masterfile



## Resources

- “Cover your cough,” Purpose: Avoid the spread of germs [VIDOH-English](#) [VIDOH-Spanish](#)
- “Sharing isn’t always caring,” Purpose: Do not share personal items [English](#) [Spanish](#)
- “Don’t give bacteria a free ride,” Purpose: Promote Hand Washing [English](#) [Spanish](#)
- “Don’t open the door to infection,” Purpose: Keep cuts, scrapes, and scratches clean, dry, and covered [English](#) [Spanish](#)
- “Fight the Flu,” Purpose: Best practices to prevent seasonal flu [VIDOH-English](#) [Spanish](#)
- Teaching Children About the Flu ~ Lesson Plans and Activities for Child Care and Early Childhood Programs [English](#)
- Easy-to-read Immunization Schedules ~ Children From Birth to 6 Years Old [English](#)
- Easy-to-read Immunization Schedules ~ Preteens and Teens, 2019 [English](#)
- Recommended Immunization Schedule for Children and Adolescents Aged 18 Years or Younger, UNITED STATES, 2019 [English](#)
- CDC Pink Book Webinar Series [English](#)
- Nurses Service Organization Do’s and Don’ts of Documentation Vaccine Information Statements [English](#)
- Virgin Islands Code [English](#)
- Health Information for Travelers to U.S. Virgin Islands [English](#)
- Centers for Disease Control and Prevention [English](#)
- Virgin Islands Department of Health [English](#)
- Social Media:
  - Facebook /virginislandsDOH [English](#)
  - Instagram @usvidoh [English](#)



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