



Bureau of Public Health Laboratories (BPHL) Jacksonville - Miami - Tampa

Testing for viruses

The Bureau of Public Health Laboratories (BPHL) performs tests for the detection of respiratory viruses, such as influenza; mosquito-transmitted viruses, such as West Nile, eastern equine encephalitis virus and dengue; for food-borne viruses, such as norovirus; and for many other viruses of public health significance.

The BPHL Virology laboratories are located in Tampa and Jacksonville, with Miami providing surge capacity for molecular testing in pandemic events. Technologies used include the newest molecular assays as well as culture and serologic (antibody) assays.

BPHL Virology Workload

During 2015, the BPHL performed 34,548 clinical virology assays; 16,326 for influenza and other respiratory viruses; 4,973 for vaccine preventable diseases such as measles, mumps and chicken pox; 9,434 for mosquito transmitted viruses; 361 for enteric viruses and 3,484 for miscellaneous agents such as herpes, CMV and toxoplasmosis. During 2015, the BPHL performed 101,422 avian, mammal, and mosquito virology assays for the detection and surveillance of mosquito-transmitted viruses.

Testing for viral respiratory disease

The BPHL participates in the World Health Organization (WHO) Collaborating Laboratories program for influenza virus strain surveillance. This program determines the types of viruses that will be used in the next influenza vaccine. While looking for influenza viruses, testing is also performed to detect other respiratory viruses that cause severe illnesses. One of these viruses, respiratory syncytial virus, or RSV, is a respiratory virus that infects the lungs and breathing passages, especially of babies. Testing of specimens from outbreaks in nursing homes and schools is also done to allow rapid intervention appropriate to the type of virus causing the illness in order to control the spread of disease.

The BPHL laboratories in Jacksonville, Tampa, and Miami perform influenza pyrosequencing to detect antiviral resistance in influenza A virus positive samples.

MERS and avian influenza testing are available for suspect cases.

Food-borne (enteric) illness

Norovirus (also known as Norwalk-like virus or calicivirus) is the most frequent cause of viral gastroenteritis in the US. Food-borne outbreaks are common as are outbreaks in nursing homes. The BPHL performs molecular assays with for detection of this virus with rapid result reporting (24-36 hours) so that outbreaks may be better controlled. The BPHL in Tampa is a certified to participate in the CDC CaliNet program, a national norovirus outbreak surveillance network. During 2013, the BPHL tested samples from 105 outbreaks. Noroviruses were detected in 71 (68%) of these outbreaks. 26 outbreaks were submitted to CaliciNet. Specimens have been submitted from



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County Health Departments (nursing/group homes, schools, restaurant/catered food outbreaks), hospitals, private laboratories and correctional facilities.

Mosquito-borne disease

Dengue virus is the most important mosquito transmitted virus worldwide. There had been no endemic transmission in Florida since the 1930's, but in 2009 local transmission was detected in Key West and in 2013 in Martin County, leading to increased specimen submission to the BPHL. Chikungunya virus was first detected in travelers returning from endemic areas in 2014 and locally acquired cases have been detected. In 2015 BPHL added Zika virus testing to its test menu. The BPHL performs molecular assays that allows us to detect virus in the serum prior to the development of antibody. This allows us to detect additional local transmission and alert mosquito control agencies to take action.

Vaccine preventable disease

Measles, mumps and other vaccine preventable viral diseases can cause explosive outbreaks. The BPHL performs both molecular and serological assays for the identification of the associated viruses.

Tick-borne disease

Ticks transmit a number of diseases in Florida. The BPHL in Jacksonville performs serological testing for Lyme Disease, Rocky Mountain Spotted Fever, and Ehrlichiosis.