



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

Testing for viruses

The Bureau of Public Health Laboratories 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 and Pensacola 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 2009, the BPHL performed 33,269 clinical virology assays; 22,969 for influenza and other respiratory viruses; 2,822 for vaccine preventable diseases such as measles, mumps and chicken pox; 1,136 for mosquito transmitted viruses; 1,125 for enteric viruses and 5,217 for miscellaneous agents such as herpes, CMV and toxoplasmosis.

Testing for viral respiratory disease

In late April, 2009 a novel strain of influenza A virus (H1N1) appeared and the BPHL was prepared with rapid molecular assays. We assayed an extraordinary number of specimens (over 6,000 in the first two months of the pandemic). It was not until mid-summer that a commercial test for this new strain became available. By the end of 2009 over 12,800 specimens had been assayed at the BPHL.

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.

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. Since testing began in 1999, noroviruses have been detected in samples from 1,248 disease clusters. Specimens have been submitted from 60 of 67 Florida counties by 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, leading to increased specimen submission to the BPHL. Heightened surveillance has led to an even greater increase in testing requests in 2010. The BPHL validated a molecular assay that allows us to detect virus in the serum prior to the development of antibody. This allows us to determine what kind of dengue virus infected the patient, 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.

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