

USDA APHIS National Veterinary Services Laboratories

The mission of the National Veterinary Services Laboratories (NVSL) is to safeguard U.S. animal health and contribute to public health by ensuring that timely and accurate diagnostic laboratory support is provided directly or by its coordination of the National Animal Health Laboratory Network (NAHLN).

The NAHLN is a partnership between USDA (Animal and Plant Health Inspection Service and the National Institute for Food and Agriculture) and the American Association of Veterinary Laboratory Diagnosticians (AAVLD). The network consists of a group of State and university funded veterinary diagnostic labs that work with diseases of animals including endemic, exotic, zoonotic, and emerging diseases. NVSL provides coordination for NAHLN activities, participates in methods validation, provides training, proficiency testing, assistance, materials, and prototypes for diagnostic tests.

Diagnostic Laboratory

At the very core of the NVSL mission is customer-based service as a veterinary diagnostic laboratory. NVSL scientists and support personnel perform diagnostic tests on nearly a quarter million samples per year.

FY08 – more than 50,000 accessions, 418,000 tests and 215,000 samples

FY09 – more than 61,000 accessions, 439,000 tests and 221,000 samples

FY10 – more than 60,000 accessions, 490,000 tests and 222,000 samples

NVSL offers nearly 500 specific diagnostic tests covering everything from basic screening tests to allow the importation of horses (equine infectious anemia testing), to culture of elephant trunk washes to detect tuberculosis. NVSL also provides diagnostic support to foreign animal disease investigations both at Ames, IA and at the Foreign Animal Disease Diagnostic Laboratory (FADDL) located on Plum Island, NY. The NAHLN laboratories play a key role by locally performing initial screening tests for several foreign animal diseases. Further, NVSL offers over 500 reagents, many of which are not available from any other source.

ISO 17025 is the international standard for managing quality in a veterinary diagnostic laboratory. In order to demonstrate confidence in quality, NVSL has attained ISO 17025 accreditation for 252 of nearly 500 tests (as of 2010 audit). New tests are added to the accreditation scope annually, with a goal of having at least 95% of results performed on accredited tests. NVSL was the first laboratory in the world to be accredited to the new Veterinary Diagnostic program under ISO 17025 by the American Association for Laboratory Accreditation. Beginning in FY11, NVSL is working to accredit the proficiency testing process and reference material production.

Reference Laboratory

NVSL serves as a reference laboratory both nationally and internationally. Veterinary Services has designated the NVSL as the reference laboratory for program diseases (*a disease Veterinary Services has designated as necessary to bring under control or to eradicate from the country*) and the confirmatory laboratory for specific diseases and foreign animal diseases. The NVSL also provides reference assistance to other veterinary diagnostic laboratories in certain areas of expertise.

NVSL is a World Organization for Animal Health (OIE) reference laboratory for twelve diseases including: high pathogenicity avian influenza, anthrax, pseudorabies, bluetongue, contagious equine metritis, eastern, western and Venezuelan encephalomyelitis, equine infectious anemia, leptospirosis, Newcastle disease, swine influenza, vesicular stomatitis, and West Nile encephalitis. For the Food and Agriculture Organization (FAO), FADDL is a reference center for vesicular diseases, African swine fever, and classical swine fever.

Training Laboratory

The NVSL staff collaborates with and provides scientific advice to other Federal and State Government agencies that are also developing new assays and technologies. NVSL scientists partner with other reference laboratories around the world and collaborate with other countries to obtain diagnostic specimens from naturally infected animals. These collaborative efforts result in enhanced expertise at the NVSL and in

reference collections that are available for assay development and validation.

Training to detect foreign animal diseases and training for laboratory diagnosticians is a critical function of the NVSL. In FY 2010, NVSL offered several technical training courses including 4 Equine Infectious Anemia courses, and courses in Contagious Equine Metritis; Brucella isolation & identification; Mycobacterium isolation & identification, Vesicular Stomatitis CFT, virus isolation, characterization, and pathotyping of avian influenza and avian parainfluenza virus; Swine Influenza virus isolation and sequencing; and Sequencing training under a FAO agreement. In addition, NVSL hosted several international trainees and visitors.

National Centers for Animal Health

In addition to laboratory testing, NVSL personnel provide core services to the National Centers for Animal Health (NCAH). NVSL personnel provide personnel services, including Human Resources and Training, procurement services, shipping and receiving support, media preparation, glassware support, and other services vital to laboratory functions.

The NCAH is a diagnostics, biologics regulation, and research center in which NVSL, the APHIS-VS Center for Veterinary Biologics and the USDA Agricultural Research Service (ARS) National Animal Disease Center are co-located; each with unique and complimentary missions for animal health. The NCAH contains both bio-safety level (BSL)-2 and BSL-3 laboratory space, as well as animal facilities and administrative space.

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NAHLN website:

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