Providing Diagnostics to the International Veterinary Community
The Texas A&M Veterinary Medical Diagnostic Laboratory (TVMDL) looks to engage entities in Latin America who share a common interest in animal health and diagnostics to develop cross-organizational partnerships, invest in interdisciplinary solutions, and share knowledge and scientific advancements to improve animal health in the Americas. TVMDL envisions three areas of focus for such collaborations: routine diagnostic testing, specialty services and capacity building.
Established in 1967, TVMDL is a full service, all-species, cutting edge veterinary diagnostic lab with four locations throughout Texas. TVMDL receives approximately 160,000 accessions and runs an average of 678,000 tests per year. Submissions received in the laboratory originate from Texas, across the United States and around the world.

TVMDL employs a highly trained and experienced staff of 150 professionals; over 30 of our diagnosticians hold a DVM and/or PhD and many hold board certifications in their specialty. Staff originate from all parts of the world, many have studied or worked internationally, and several are nationally and globally recognized experts within their scientific field of study.

The United States Department of Agriculture (USDA) has selected TVMDL to be part of the National Animal Health Laboratory Network (NAHLN), a group of state and regional laboratories performing surveillance testing for high-consequence agricultural and zoonotic pathogens. TVMDL performs testing and surveillance for bovine spongiform encephalopathy, avian influenza, H1N1 influenza, foot and mouth disease, vesicular stomatitis, contagious equine metritis, classical swine fever (hog cholera), scrapie, and chronic wasting disease in deer.

TVMDL maintains biosafety level 2 and 3 laboratories capable of safely working with and containing high-consequence animal disease agents like foot-and-mouth disease.
TVMDL is uniquely positioned to assist animal health entities in Latin America with routine diagnostic testing. TVMDL offers testing in all veterinary diagnostic disciplines, including several tests listed in the World Organization for Animal Health (OIE) Manual of Diagnostic Tests and Vaccines for Terrestrial Animals, and numerous other assays, both developed and validated in-house or adapted from published scientific literature. Tests conducted at TVMDL range from routine diagnostics designed to detect endemic diseases to assays that identify high consequence and transboundary diseases. Many of these animal diseases are of public health concern as well.

**Diverse Test Offerings**
Our test catalog includes over 650 assays for livestock and companion animals as well as exotic species, with new tests added every year. TVMDL strives to offer relevant, quality, timely, and affordable testing services to all clients. View the agency’s full test catalog at http://tvmdl.tamu.edu. Our online catalog offers comprehensive information on all tests, including turnaround time, price, sample collection instructions, shipment recommendations and test methodologies.

**Ease of Use**
With the convenience of overnight and next day shipping, animal health professionals from all parts of the world can easily and quickly ship samples to TVMDL for routine diagnostic testing. Export requirements vary from country to country, and TVMDL accommodates these different requirements by offering multiple assay types for export purposes. TVMDL maintains several import permits issued by the United States government that will allow the importation of animal samples to TVMDL from countries with livestock diseases exotic to the United States. We routinely petition for additional permits as needed.

**Online Access**
Test results are sent electronically and can be accessed 24/7 via a secure online client portal. Using the portal, clients can access historical test results and download reports at their convenience. The online system allows clients to print discounted shipping labels, download forms, order supplies and make online payments.

**Quality Assurance**
Underlying all activities at TVMDL is our robust quality assurance program, which incorporates the standards of the American Association of Veterinary Laboratory Diagnosticians (AAVLD) with applicable elements from the OIE and the International Organization for Standardization (ISO). The agency holds accreditation from AAVLD and TVMDL’s Drug Testing Laboratory holds ISO17025 accreditation and interim accreditation from the Racing Medication and Testing Consortium. If requested, TVMDL can provide services that meet federal Good Laboratory Practices (GLP) standards, required for many federally funded research projects. Clients trust that TVMDL’s quality assurance program will ensure consistent, accurate results to aid in diagnosing, treating and preventing animal diseases.
SPECIALTY SERVICES

TVMDL can provide an invaluable professional resource to existing diagnostic laboratories, veterinary clinicians and animal health professionals across Latin America.

**Import and Export Testing**

TVMDL performs tests required for import and export on a wide variety of species every week, for clients across Texas, throughout the United States and internationally. Most movement testing is performed at TVMDL; however if a client seeks a test we do not offer, we can refer to a network of veterinary diagnostic labs across the United States to perform required or recommended testing.

The agency employs two import/export coordinators who provide special oversight and troubleshooting for import and export testing. Each has several years experience with import/export testing issues and is well versed in permit requirements. These coordinators provide:

- continuity in test turnaround and deadline monitoring
- updates on potential timeline challenges
- accurate assessments of timelines for multipart test regimens
- coordination with outside labs when necessary

**Consultation**

The agency has several professional and administrative staff fluent in Spanish who are available to consult on difficult cases, provide advice on diagnostic testing or perform confirmation tests. Our experts are internationally recognized in their field of study and are available to collaborate on routine or complex cases. Consultations range from information on disease pathology and epidemiology to surveillance sampling strategies, test selection and result interpretation. TVMDL prides itself on providing personalized customer service; you will always be able to speak with the diagnostician who conducted your testing.

**State of the Art Technology**

TVMDL ensures it remains up to date on the latest testing technologies and employs these methods in our routine testing. Examples include mass spectroscopy (GC-MS, LC-MS, LC-MS-MS) for identification of drugs, toxins and other chemicals, both classical and real time Polymerase Chain Reaction (PCR) for both DNA and RNA detection, nucleic acid sequencing and Matrix-Assisted Laser Desorption/Ionization Time of Flight (MALDI-TOF) technology for rapid bacterial identification. Clients with basic diagnostic capabilities can look to TVMDL to perform more sophisticated, sensitive and specific testing using our state of the art equipment and techniques. Employing TVMDL as a reference lab will allow clients access to the latest equipment and the most advanced technology while avoiding the expense of upgrading equipment, ensuring annual preventative maintenance, and training employees.

**Research and Validation**

Our organization has a successful track record of collaborations with private and public companies and researchers requiring diagnostic testing or validation for studies or other projects. TVMDL can customize a service package for researchers or animal health companies. Our professionals have experience in assay development, from initiation through to commercialization, as well as protocol evaluation and improvement. As with routine diagnostic testing, all such research and validation efforts meet the stringent quality assurance requirements we operate under.
TVMDL has a proven record of accomplishment in international collaborative efforts designed to improve veterinary diagnostic capacity and capability in countries around the world. TVMDL routinely provides tailored training to international colleagues focused on routine diagnostics, high consequence disease testing, equipment use, disease surveillance, laboratory information management systems (LIMS), biosafety, biosecurity, quality assurance, and veterinary laboratory management.

**Customized Programs**
Training objectives are customized and can be disease-specific, focused on a particular technology or instrumentation, or cover a broad range of laboratory topics, from technical to laboratory management and quality assurance programs. TVMDL ensures significant partner engagement to provide well rounded, targeted and individualized trainings. Reciprocal visits are often included in training plans, allowing TVMDL experts to reinforce methods, concepts and techniques after initial trainings.

*Countries have sought out TVMDL experts to conduct disease-specific training programs in Bangladesh, Laos, Philippines, Ethiopia, Indonesia and Vietnam. Trainings have focused on Streptococcus suis, avian influenza, brucellosis, and exotic Newcastle disease using techniques in PCR, AGID, HI/HA and necropsy.*
**CAPACITY BUILDING**

Agency experts participated in an extensive 5-year training in Ethiopia in several laboratory related aspects, including helping to establish a new government agency. As a result of this assistance, the National Animal Health Diagnostic and Investigative Center in Sebeta was ISO 17025 accredited for 12 important tests.

**Collaborative Trainings**

The Texas A&M University System is one of the largest systems of higher education in the United States, with a network of eleven universities and seven specialized agencies. Our strategic location on the campus of Texas A&M University allows TVMDL access to partners working in disease surveillance, animal health and nutrition, epidemiology, food security, sustainability, resource management, utilization of natural resources, and other agriculture, veterinary medicine and life sciences subjects.

In addition, we are able to leverage worldwide partnerships to enhance training programs for international partners. TVMDL has forged relationships with governmental, not-for-profit, quasi-governmental and private partners at the federal and international levels who can enhance training programs to provide relevant and timely training programs.

TVMDL staff has participated in needs assessments, lab methods training, quality management/quality control and LIMS usage in five Central American countries. Reports were used by the host country to attract more in-country and outside funds. El Salvador received $1M from outside sources and was able to obtain ISO 17025 certification.
Texas A&M Veterinary Medical Diagnostic Laboratory

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