

Animal Health Laboratory overview

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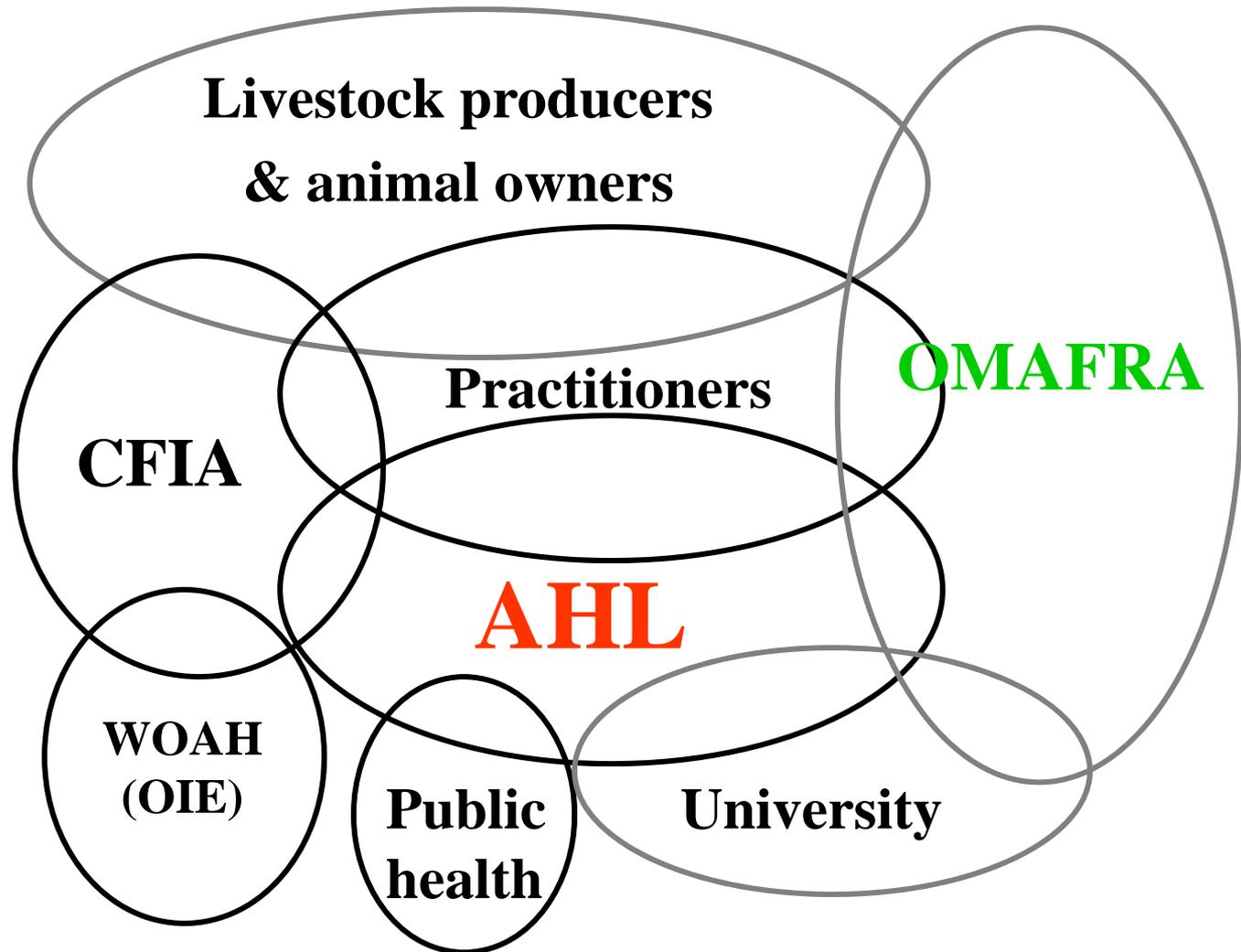
Services provided by the AHL

- Anatomic Pathology – Guelph and Kemptville
- Bacteriology
- Clinical Pathology
- Immunology/Serology
- Avian and Mammalian Virology
- Molecular Biology
- Mycoplasmaology
- Parasitology
- Toxicology/Soil & Nutrient
- Surveillance

AHL expertise, capability

- 17 veterinarians on staff, all with advanced training in various disciplines
- adjunct or associate graduate faculty status within OVC
- ~85 FTE total staff complement
- over 1,000 tests available in-house
- central support for QA, IT, Finance, HR, Marketing & Sales
- hybrid university-provincial fee-for-service lab
- provide services for OMAFRA, CFIA and other government agencies, OVC HSC, researchers, external private practitioners, CCWHC, etc.

Stakeholders/partners of the AHL



AHL accreditations, registrations

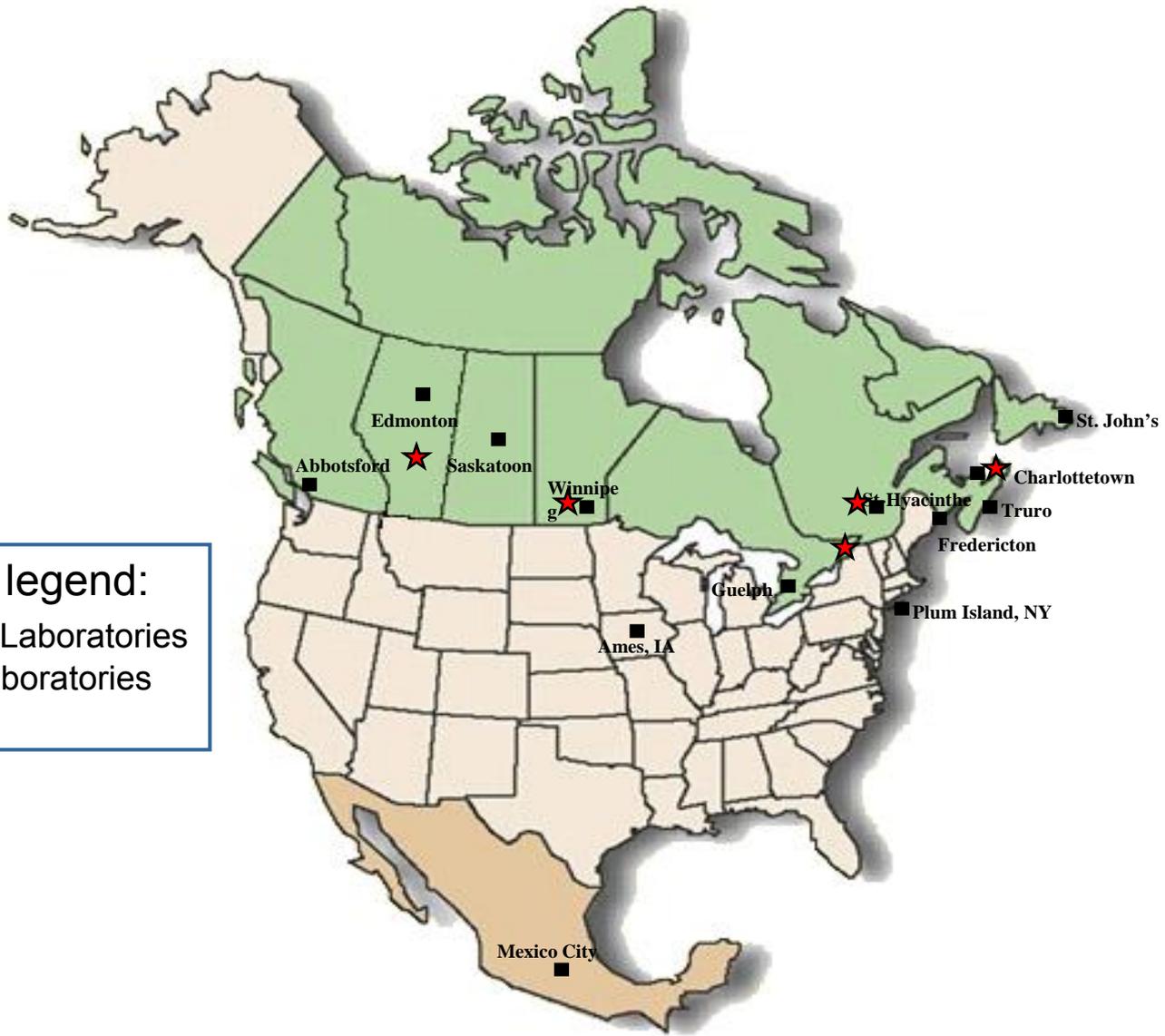
1. ISO 9001:2008 *Quality Management Systems*
 - o Auditor – BSI
2. ISO/IEC 17025 *General Requirements for the Competence of Testing and Calibration Laboratories*
 - o Auditors – SCC, CALA
 - o ~20 tests – **Toxicology**, scrapie PrP genotyping, adding 7 Mammalian Virology tests
3. AAVLD *Requirements for an Accredited Veterinary Medical Diagnostic Laboratory, v 4.3*
 - o Auditor - AAVLD - 5yrs, all species, full-service

Partnerships, affiliations

- CFIA led:
 - Canadian Animal Health Surveillance Network (CAHSN)
 - TSE Laboratory Network
 - Avian Influenza Laboratory Network
- AAVLD accredited lab
 - 42 in North America, 2 in Canada (ON, BC)

CAHSN/CAHLN

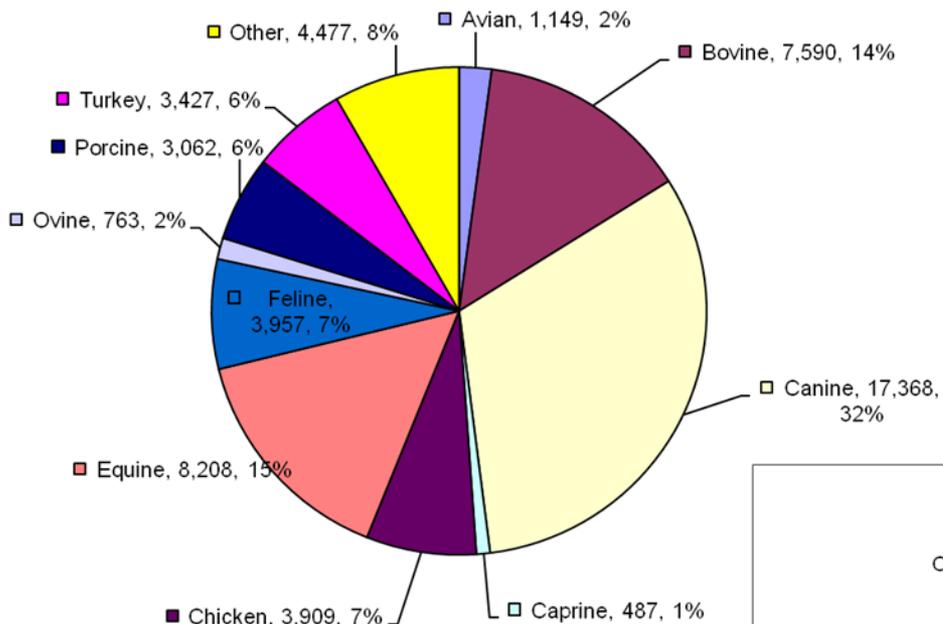
- Federal – provincial – university partnership
- Canadian Animal Health Surveillance Network (**CAHSN**)/Canadian Animal Health Laboratorians Network (**CAHLN**)
 - CFIA – NCFAD
 - Federal/provincial/university laboratories
- Standardization provided through:
 - standardized SOPs, upgraded quality programs
 - standardized reagents, proficiency panels
 - initial set of high-priority agents – **AIV, ENDV, CSFV, FMDV, BSE prion**
 - compatible equipment for real-time PCR and ELISA
 - training of certified analysts
 - new or upgraded facilities – CL3, FAD (CL2+)
 - IT links in place for secure electronic messaging
- Safeguard animal health through:
 - routine surveillance capability
 - **early detection**, with confirmation by central reference lab
 - **surge capacity**
 - rapid response
 - appropriate recovery



CAHSN legend:
■ Partner Laboratories
★ CFIA Laboratories

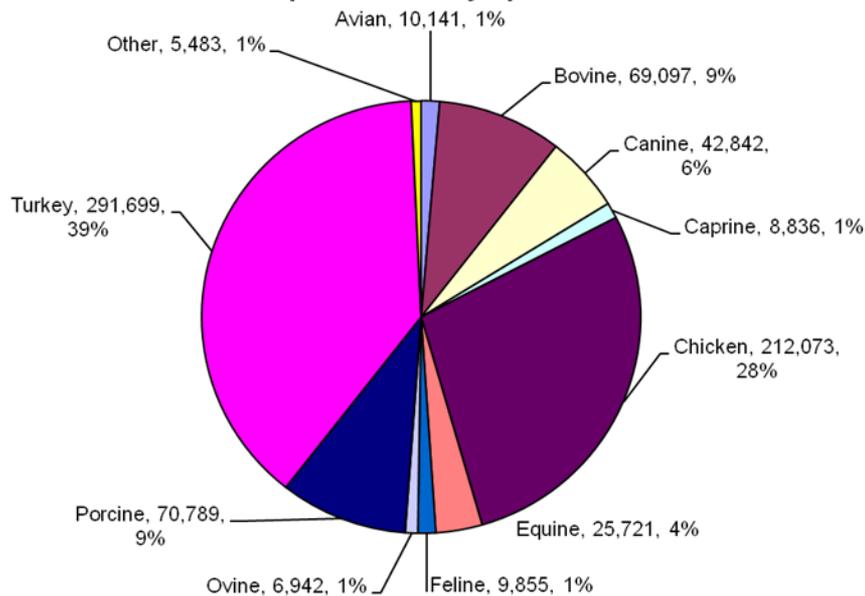
AHL caseload distribution, 2010

AHL cases by species 2010



Avian Virology	521,595
Bacteriology	68,910
Clinical Pathology	57,130
External	9,657
Gross Pathology	3,516
Histopathology	29,842
Mammalian Virology	68,433
Mycoplasmology	11,504
Parasitology	5,014
Soil & Nutrients	21,041
Toxicology	9,752
Total Tests	806,451
Total Cases	65,602

AHL procedures by species 2010



Lab Services toxicology/chemistry capabilities

AHL Toxicology

- 1 scientist, 5 technical staff
- 2 AAS
- 3 HPLC
- 1 GC-MS, 1 GC-FID
- 1 ICP-OES
- 1 ICP-MS
- ~10,000 tests/yr + GLP

AFL TOPS, CMD, FMM

- 7 scientists, 28 technical staff
- 5 GC-MS
- 3 GC-ECD, 2 GC-FPD, 1GC-NPD
- 6 HPLC
- 6 LC- MS/MS
- 1 SEM, X-ray microanalysis
- 1 FTIR spec, 1 IR microscope
- ~18,000 tests/yr + GLP

AHL toxicology/chemistry test spectrum

Inorganic

- single or multi-element heavy metal screens
- single or multi-element nutrient screens

Organic

- mycotoxins
- rodenticides
- avicides
- fungicides, herbicides, insecticides
- industrial pollutants
- glycols
- ionophores/feed additives
- vitamins
- anions/cations
- foreign materials

AHL microbial identification spectrum

4 veterinary microbiologists, ~30 technical staff

Bacteria/mycoplasmas and viruses by:

- culture (aerobic, anaerobic, egg/tissue culture, virus isolation)
- identification
 - electron microscopy
 - antigen detection
 - ELISA
 - IHC
 - FA
 - toxin detection (e.g., *Clostridium botulinum*, *Pasteurella multocida* toxin)
 - xMAP- Luminex multiplex protein assays
 - polymerase chain reaction (PCR)
 - DNA sequencing
 - Sanger sequencing (ABI 3730 capillary analyzer)
 - massively parallel sequencing (GS Junior)
 - xTAG- Luminex multiplex nucleic acid assays
 - matrix-assisted laser desorption/ionization time of flight mass spectroscopy (MALDI-TOF MS)