
Function and operation of an OIE reference laboratory

J. Barrat

Rabies and wildlife laboratory of Nancy



- One of the tasks performed by OIE, the World Organisation for Animal Health, is reporting in a global database sanitary information about animal diseases listed or "of importance".
- Among these centralised data there are
 - the identification of diseases and
 - the evolution and the control of the identified outbreaks.
- All this is first based on reliable laboratory results and field data.

-
- The reliability of laboratory results depends on many factors as:
 - the use of "validated" techniques
 - the use of good reagents
 - the presence of a trained staff
 - working according to approved procedures
 - the reproducibility of results between laboratories at the national and the regional levels
 - ...

- To assess the reliability of laboratory results, OIE has 2 efficient tools:
 - the Manual of Diagnostic Tests and Vaccines for Terrestrial Animals
 - general standards, validation of assays, quality control, ...
 - recommended and alternative techniques of diagnosis
 - requirements for vaccines
 - a global network of reference laboratories for the different listed diseases
 - 1 to 12 RLs per disease, 10 for rabies

Reference laboratories for rabies



**What is asked for designation
as
OIE Reference Laboratory**

- Provide the services described under the Terms of Reference
- Be in conformity with OIE and other international standards for laboratory quality assurance, biosafety and biosecurity measures
- Scientific and technical leadership including internationally recognised expertise in the field of rabies
- Presence of veterinary experts within the RL scientific teams

- Position of the institution:
 - national and international standing
 - place in the animal health, scientific or educational structures of the country
- Prospective stability in terms of personnel, activity and funding
- Working relationships at the national, regional and global levels
- Technical and geographical relevance of the institution and its activities to OIE's programme priorities

- The Terms of Reference for RLs initially insisted on
 - developing and recommending test methods,
 - storing and distributing reference reagents,
 - providing advice, diagnostic support and training to other OIE Member Countries,
 - reporting obligations

- From May 2011, the ToRs added the recommendation that
 - laboratories should establish and maintain a network with other OIE Reference Laboratories designated for rabies
 - organise regular inter-laboratory proficiency testing to ensure comparability of results,
 - organise inter-laboratory proficiency testing with laboratories other than OIE RLs for rabies to ensure equivalence of results.

The terms of reference

-
- Technical aspects of diagnosis and control of rabies
 - Scientific collaborations
 - Data collection, reporting
 - Training for OIE member countries personnel
 - Systems of quality assurance, biosafety and biosecurity
 - Networking with other RLs for rabies
 - Inter-laboratory proficiency testing
 - Represent / Organise scientific meetings on behalf of OIE
 - Place expert consultants at the disposal of the OIE

Technical aspects

- To use, promote and disseminate diagnostic methods validated according to OIE Standards;
- To recommend the prescribed and alternative tests or vaccines as OIE Standards;
- To develop reference material in accordance with OIE requirements, and implement and promote the application of OIE Standards;

→ Validated techniques are used
on a large scale

-
- To store and distribute to national laboratories biological reference products and any other reagents used in the diagnosis and control of rabies;

→ national coordination of diagnosis and control

- To develop, standardise and validate according to OIE Standards new procedures for diagnosis and control of rabies;

→ active involvement in the development of new techniques in diagnosis and control

Collaboration

- To provide diagnostic testing facilities, and, where appropriate, scientific and technical advice on rabies control measures to OIE Member Countries;
 - share the knowledge and expertise with OIE member countries
- To carry out and/or coordinate scientific and technical studies in collaboration with other laboratories, centres or organisations;
 - scientific collaboration

Data collection and reporting

- To collect, process, analyse, publish and disseminate epizootiological data relevant to rabies;

→ share epidemiological data

Training, quality assurance

- To provide scientific and technical training for personnel from OIE Member Countries
 - a way to promote approved techniques
- To maintain a system of
 - quality assurance
 - at the end of 2017 accreditation to ISO 17025 or an equivalent quality management system should be obtained
 - biosafety and biosecurity relevant for rabies

Networking, inter-laboratory testing

- To establish and maintain a network with other OIE RLs for rabies
- To organise regular inter-laboratory proficiency testing
- To organise inter-laboratory proficiency testing with laboratories other than OIE RLs for rabies
 - ➔ comparability and equivalence of results

-
- To organise and participate in scientific meetings on behalf of the OIE;
 - To place expert consultants at the disposal of the OIE

Role of the expert

- There should be one "official" expert in the RL.
- The expert is responsible to the OIE and its Member Countries with regard to rabies.
- The expert should
 - be a leading and active researcher
 - help the Reference Laboratory to provide scientific and technical assistance and expert advice on topics linked to diagnosis and control of rabies

The annual reports of 2017

2017 annual reports

- 9 reports published on the OIE website
 - Canada
 - France
 - Germany
 - Israel
 - Republic of Korea
 - Mexico
 - South Africa
 - United Kingdom
 - USA

- Use, promotion and dissemination of diagnostic methods validated according to OIE Standards
 - 9 perform diagnosis on "national" specimens
 - 7 also on international ones

- Develop, store and distribute reference products/reagents used in diagnosis and control
 - officially recognised reagent: 1
 - non-OIE approved reagents: 6
 - vaccine: 0
 - supplies vaccines to OIE member countries: 1

- Provide testing facilities, scientific and technical advice on rabies control to OIE MCs
 - diagnosis for other OIE MCs: 6
 - technical consultancies requested by an OIE MC: 8
- participate in scientific studies with other OIE MCs: 7

- Collect, process, analyse and disseminate epidemiological data on rabies: all 9
 - 8 through peer-reviewed journals
 - 8 through international conferences
 - 9 through national conferences
 - 8 through other ways

- Provide scientific and technical training to laboratory personnel from other OIE MCs: 8
 - 6 through technical visits
 - 6 through seminars
 - 5 through training courses
 - 2 through internship longer than 1 month

- Maintain a system of quality assurance, biosafety and biosecurity relevant for rabies
 - 8 have a quality management system certified according to an International Standard
 - 6 of them are accredited by an international accreditation body
 - 1 has a quality system consistent with ISO standards
 - all 9 maintain a “biorisk management system” for rabies

-
- None organised a scientific meeting on behalf of OIE
 - 3 participated to scientific meetings on behalf of OIE
 - 7 placed expert consultants at the disposal of the OIE

- Networking and interlaboratory proficiency testing with OIE RLs
 - all 9 exchange information on rabies
 - 5 organise or participate in proficiency tests
 - 6 collaborate on scientific research projects for the diagnosis or control of rabies
- 8 organise or participate in inter-laboratory proficiency tests with laboratories other than OIE RLs for rabies

Remark

- The mandates of reference laboratories for different international bodies may overlap on different topics.
 - for instance, a RL may organise interlaboratory proficiency testing for one of these bodies on OIE approved techniques and it will not appear in the OIE report
- In this case it could be better to consider that the activity performed for the OIE in the annual reports may not reflect all the reference activities of the laboratory in rabies

The OIE Twinning projects

- Why:
 - to assist laboratories to build their capacity and scientific expertise with the eventual aim to become OIE Reference Laboratories
- How:
 - a link between an existing OIE Reference Laboratory or Collaborating Centre and another laboratory
 - exchange of scientific expertise
 - capacity building
 - the twinning concept should imply
 - a transfer of knowledge,
 - training
 - expertise
 - an already established friendly collaboration between both laboratories

To conclude

- OIE Reference Laboratories for rabies are designated to pursue all the scientific and technical problems relating to rabies
- The RL must designate one expert
 - responsible to the OIE and its Member Countries with regard to rabies,
 - leading and active researcher

- RL should also
 - provide training for Member Countries
 - coordinate scientific and technical studies with other organisations, including through the OIE Laboratory Twinning programme.
- The OIE depends on its RLs and experts for scientific advice and support,
 - at the Headquarters level in developing or updating standards, participating in ad hoc Groups and providing general advice,
 - at the Member Countries level through the ToR.

Thank you for your attention