

Post OIE laboratory twinning regional work shop on animal brucellosis

Pendik Veterinary Control Institute

Istanbul, Turkey, 29-30 November 2011

Main points, conclusions, and recommendations

Participants included brucellosis experts from the National Veterinary Services of Azerbaijan, Georgia, Iraq, Jordan, Kyrgyz Republic, Lebanon, Mongolia, Syria, Tajikistan, Turkey, and Uzbekistan; OIE Reference Laboratory for brucellosis - Animal Health and Veterinary Laboratories Agency (AHVLA), UK; Pendik Veterinary Control Institute (PCVI), Turkey; and representatives from the World Organisation for Animal Health (OIE), World Health Organization (WHO), the Food and Agricultural Organization of the United Nations (FAO) and the Global Partnership (GP), UK.

The meeting, held at Pendik Veterinary Control Institute (PCVI), Pendik, Turkey was a follow up activity to the successful OIE twinning project between PCVI and AHVLA for animal brucellosis.

The main objectives of the workshop being:

- To promote PCVI as a regional centre of expertise for brucellosis and to strengthen links between brucellosis experts from invited countries from Middle East and Central Asia
- To develop a broad understanding of the animal brucellosis situation in the region
- To discuss regional approaches to brucellosis surveillance and control

All country experts presented the brucellosis situation in their country focussing on surveillance, control measures, laboratory capacity, and links between animal health and public health sector.

Main points from country presentations:

- National surveillance data demonstrate that brucellosis is endemic in all countries participating in the meeting. There is evidence that brucellosis has a serious impact on animal health and public health in these countries.
- There are a number of international organisations and donors working to support Veterinary Services and to assist them with brucellosis control in the region. There is scope to better coordinate some of their activities.
- Approaches to brucellosis surveillance, sampling strategies and animal demographics vary. In some countries only a small proportion of the susceptible animal population are tested for brucellosis. The case definition of a brucellosis outbreak appears to vary between countries with some divergence on criteria for reporting brucellosis infection at national and international level.

- Identification and traceability of animals is implemented to varying effect across the region. A barrier to implementing effective animal identification and traceability is cost of establishing the system.
- A variety of animal brucellosis control methods are currently used in the region, including test and slaughter, and vaccination. Approaches to vaccination and the choice of vaccine vary from country to country. None of the participating countries effectively implement a policy to provide compensation to farmers whose animals were removed from the population following a positive brucellosis test result.
- Evidence supports the positive impact of certain control strategies in some countries in the region. Several countries presented evidence suggesting that if control is not maintained, the brucellosis situation in animals and humans rapidly deteriorates.
- Laboratory capacity varies and there appear to be a number of approaches to laboratory diagnosis of brucellosis. Some countries requested guidance on testing regimes for brucellosis.
- The OIE twinning project between AHVLA and PCVI has been a success. Capacity at PCVI has also been augmented by upgrading of laboratory facilities to BSL 3 by a World Bank project. PCVI has the full support of its National Veterinary Services and technical support from AHVLA to continue to build on the achievements of the OIE twinning project to become a regional centre of expertise for brucellosis diagnostics, surveillance, and control.

Conclusions

- Brucellosis is a significant problem for animal health and human health in all participating countries. It is likely under reported. Significant benefits for animal health, public health, food production, agricultural economies, and food safety would be provided by an effective long term (at least 10-20 years) coordinated regional control strategy for animal brucellosis.
- Owing to weaknesses in surveillance, cases of brucellosis in animals and humans are likely to go undetected and current estimates of prevalence probably underestimate the real brucellosis burden in the region.
- Surveillance data would be improved by harmonising data requirements at the national and regional level; by combining laboratory and epidemiology data; by collecting data on population size and both positive and negative results (denominator data); and if there were greater incentives for reporting suspect cases. Surveillance data are more useful if they are shared regularly at the regional level.
- There are gaps in knowledge about the epidemiology of brucellosis in the region. Further research would be beneficial, for example to understand brucellosis infections and to develop effective diagnostic tools in camels and other species. Research also provides opportunities to strengthen collaboration between institutes in the region and with the international scientific community.

- For successful regional surveillance, national brucellosis laboratories require the base capacity to accurately detect the presence of *Brucella* and determine the nature of strains isolated from susceptible animal species.
- To ensure accurate and harmonised diagnostic testing results, laboratory staff need to be familiar with and competent in carrying out diagnostic protocols laid out in the OIE Diagnostic Manual of Tests and Vaccines for Terrestrial Animals (*OIE Diagnostic Manual*). Brucellosis infection of laboratory personnel can be avoided by following risk based biosafety and biosecurity procedures also laid out in the *OIE Diagnostic Manual*.
- PCVI offers its facilities to train colleagues from countries based on bilateral agreement between Veterinary Services. All participants agree to cooperate with PCVI for technical assistance, training, developing regional approaches to brucellosis surveillance and control, with collaboration from AHVLA.
- To develop a baseline understanding of regional diagnostic capabilities, countries agree to take part in a regional animal brucellosis proficiency testing programme coordinated by PCVI and AHVLA. Results of this will be used to target training and guidance to improve diagnostic capacity and compliance with OIE Standards including on the choice of diagnostic kits and testing methods with respect to the *OIE Diagnostic Manual*.
- Control strategies can be based on a combination of measures - including test and slaughter, movement restrictions, and vaccination (including mass vaccination) - depending on the country prevalence/epidemiological situation. Compensation is a useful tool to encourage reporting of suspect brucellosis cases, reducing risk of further disease spread. Vaccines must be of good quality, safe, effective and prepared according to OIE Standards, and administered appropriately by the competent authorities, including consideration to the cold chain.
- Control strategies are more effective if they are based on the specific country situation including epidemiology of the disease, animal demographics, farming systems, transhumance, circulating strains, cost of control and resources available. Control at border inspection posts plays an important role in reducing regional spread of brucellosis. Trade measures applying to animals and animal products should be based on the OIE Terrestrial Animal Health Code (*OIE Code*).
- Close and regular cooperation between animal health and public health services at the national and regional levels is essential for all zoonoses, this includes sharing of surveillance data.
- Initial education and continuing post graduate training play an important role in ensuring that veterinary personnel have the necessary expertise and skills to design and implement effective brucellosis surveillance and control programmes.

Recommendations:

- 1) Effective national surveillance and control strategies for animal brucellosis should be implemented, accounting for the regional and individual country situation and should consider the epidemiology of the disease, resources available, animal demographics and movements, including transhumance.
- 2) Approaches to surveillance and control should be harmonised within the region and surveillance data should be regularly shared, collated and analysed at the regional level. Countries should comply with their reporting requirements to OIE.
- 3) Compensation schemes should be considered as a means to improving sensitivity of surveillance and effectiveness of control.
- 4) PCVI and AHVLA should work with countries in the region to collect more information on diagnostic tests currently being used and should implement a regional proficiency test for brucellosis.
- 5) Countries should use surveillance data to monitor control programmes, including testing and vaccination, to provide stronger evidence supporting the effectiveness of certain control strategies.
- 6) OIE and FAO should develop guidance on the use on vaccination and types of vaccines used in different conditions based on OIE Standards and manufacturer's instructions. Implementation of vaccination should be managed by the National Veterinary Services in accordance with OIE PVS criteria.
- 7) For effective surveillance and control of brucellosis and other diseases, countries should implement animal identification and traceability in accordance with OIE Standards.
- 8) National Veterinary Services should strengthen the effectiveness of border inspection posts, based on the OIE Terrestrial Animal Health Code, to control the spread of brucellosis.
- 9) Veterinary Services together with Public Health Authorities should raise awareness and provide extension programmes for stakeholders to reduce public health risks from animal brucellosis.
- 10) Countries should agree on national and regional research priorities which would reduce animal and public health risks from brucellosis and improve methods for prevention, detection, surveillance, and control.
- 11) Countries should coordinate their activities with international organisations including FAO, WHO, OIE, World Bank and other agencies and potential donors to benefit from their support and expertise.
- 12) National Veterinary Services should maintain or continue to improve capacity of their laboratories to ensure that there is at least basic capability to detect brucellosis in animals and to differentiate strains. Laboratory capacity building should include consideration to biosafety/biosecurity, quality assurance and training requirements.

- 13) A list of national brucellosis laboratory experts should be developed by OIE regional representation to facilitate regional laboratory activities such as proficiency testing.
- 14) Acknowledging the success of the AHVLA-PCVI twinning, countries should consider requesting OIE Laboratory Twinning as a means to improve diagnostic capability and compliance with OIE Standards.
- 15) OIE should consider supporting post-twinning activities such as training and proficiency testing.