

Address to the Victorian Rural Press Club, Friday 18 July 2014

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<http://www.csiro.au/Organisation-Structure/National-Facilities/AAHL.aspx>

Topic: Biosecurity: international dimensions, threats and strategies

AAHL's relationship with the Crawford Fund started through support to a Nepalese scientist working on JE. The relationship has endured over many years, and expanded into Crawford assistance to Nepal for rabies diagnostics as priorities in that country changed. However zoonotic encephalitis remains a challenge in South Asia and there are requests for a new round of assistance.

FMD is the most significant biosecurity threat facing Australia, and the main focus of AAHL. An ABARE study last year estimated the cost of an FMD outbreak to the Australian community to be of the order of \$50 billion dollars.

http://www.daff.gov.au/ABARES/pages/publications/display.aspx?url=http://143.188.17.20/anrdl/DFFService/display.php?fid=pb_pseiFMDd9abbl20131011_11a.xml

AAHL is a maximum biocontainment facility designed and built to provide Australia with a national facility to provide laboratory science and services to help manage such risks from diseases of animals, including diseases that can be passed to people – zoonoses.

FMD is not the only threat being addressed. In recent years zoonotic avian influenza, particularly H5N1, has been a major focus internationally and in the Southeast/East Asian region. AAHL has provided laboratory capacity building and reagent supply and also backed up field studies of this multi-national outbreak, including promoting the "One Health" approach: the coordination of animal and public health responses. The work has built on a network of animal health collaboration across the ASEAN countries developed over two decades of development assistance projects funded by Australian agencies. It is interesting to note that the development of Australian influence in the region can be tracked through this earlier work and the bird flu engagements to the point where now AAHL staff are sitting on international committees at the heart of managing international responses to the pandemic threat from animal influenza infections; OFFLU committees <http://www.offlu.net/> including the OFFLU animal health contributions to the WHO vaccine strain selection meetings (VCM)

http://www.who.int/influenza/resources/documents/characteristics_virus_vaccines/en/

and nomenclature committees

http://www.who.int/influenza/gisrs_laboratory/h5n1_nomenclature/en/. International development assistance work has planted seeds that have led to flourishing outcomes way beyond the initial project objectives.

Over the decades of Australian ODA-assisted AAHL involvement in the Asia Pacific region a range of other disease have been addressed. Duck viral enteritis in Vietnam was a successful ACIAR project during which a suite of tests for duck diseases was developed for use in Australia and Vietnam, capacity which now underpins testing available to support imports of duck genetic material for Australian commercial operators.

Classical swine fever of pigs is another transboundary animal disease for which AAHL has received Australian development assistance funding to collaborate with Vietnam, in which two-way benefits have been evident. AAHL developed first hand experience with diagnostics for Southeast Asian strains of this important disease and Vietnam licensed a new vaccine produced by their vaccine company. AAHL's lead scientist on the project, Chris Morrissy, was later awarded the highly

prestigious Medal for Services to Vietnamese Agriculture and Rural Development, clearly indicating Vietnam's appreciation of the benefits derived from the work.

Australian development assistance has allowed trusted networks to build up over time, enduring relationships leading to mutually beneficial opportunities. The current FMD vaccine efficacy studies being undertaken in Vietnam, funded by MLA and AHA, has been negotiated on the basis of the ongoing relationship between AAHL and Vietnamese animal health institutions.

The focus of AAHL's activities in the region has broadened over time, moving on from a focus on specific diseases and the tests associated with these particular diseases, to more generic types of assistance

- Quality assurance, helping national labs develop QA systems, even to the point of achieving accreditation
- Supported by provision of proficiency testing, nationally within country networks, and also across the ASEAN region national laboratories. (Within Australia AAHL has sought and achieved NATA accreditation to the ISO17043 standard in support of this work.)
- Laboratory biosafety, to practically handle work with dangerous zoonoses such as H5N1
- Laboratory biosecurity - AAHL is a regular contributor to the ASEAN Regional Forum (ARF) Workshops on Biological Threat Reduction in Manila

What of the future?

Internationally two big points of focus are food security and pandemic preparedness. Other aspirations for the world's human population cannot be met if nutrition is inadequate or if they are at risk of dying in their hundred's of millions.

Both food security and pandemic preparedness require a detailed knowledge of the infections in our animal populations. Not only disease, BUT infection. The most recent bird flu in China, H7N9, causes no clinical signs in poultry but 167 human deaths from 451 cases. The existence of this infection in poultry became recognized only after people started dying. Much improved surveillance, the active monitoring and managing of infection status, can be expected to be a normal expectation globally of the farming of animals in the future.

Importantly the spread of infections in animals and from animals to people is dependent on human behaviours all along the value chain for each commodity: biosecurity on farms, animal movements, the movement of vehicles and equipment in production and marketing, the practices in processing plants, and the understanding that consumers have of the whole process and its inherent risks. Given the importance of human activity and responses, a more sophisticated value chain is needed, including the customers. In Australia we might say that our biosecurity is underpinned by the whole population, some 23 million operators. The role of the consumer is to understand biosecurity risks and the measures along the value chain to manage such risks, and to pay for such management. A measured response to the findings of surveillance is also required, rather than knee jerk responses such as avoiding purchase of commodities from value chains in the news from time to time. Could we work towards a changed paradigm, from "Cheaper, cheaper, cheaper" to "Safer, safer, safer"?

The ACIAR blog this week "Markets for Healthy Farm poultry in Indonesia" shows that value chains can be managed for improved biosecurity outcomes and also that consumers will pay more for commodities produced under circumstances where risks are managed. This small ACIAR project was pioneering work, indicating clearly future opportunities. Again Australian development assistance is at the forefront of international developments. <http://aciarblog.blogspot.com.au/2014/07/markets-for-healthy-farm-poultry-in.html>