A draft proposal for multi-university consortium for postgraduate coursework programs in animal disease diagnosis

National Animal Health Laboratory Strategy Reference Group

Submission to the Quarantine and Biosecurity Review Panel

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Executive Summary

A consortium of Australian veterinary schools, animal health laboratories and industry (Australian Consortium for Animal Disease Diagnosis and Training) is proposed, allowing collaborative development and delivery of a coursework in Masters program in veterinary laboratory disease diagnosis. This proposal will draw on the resources and expertise of veterinary schools and a range of government and private laboratories for training. The curriculum will incorporate case management, which demands the integration of diagnostic skills in the fields of pathology, virology, bacteriology, parasitology, serology, toxicology and molecular biology.

The model draws on the individual strengths of Australia's veterinary schools to provide students with exposure to a broad range of expertise, case material and learning environments.

The cost of development and operations would depend on the number of salaried trainees and universities involved. Approximately $12M over a 5 year period would establish a consortium of six universities, fund course development and operational costs and enable recruitment and supervised training of 30 salaried trainees at six participating universities. It would cost employers an additional $5M to recruit, pay and train an additional 20 participants using the consortium over a 5 year period. A total of fifty trainees would enter the program over 5 years and a sustainable training program would be created. At a national level, then, approximately $17M over 5 years would meet industry needs by addressing the present serious skills shortage in veterinary laboratory diagnosticians and re-establish laboratory work as a valued career path for Australian veterinary graduates. To stakeholders, the total costs of training per student, or per university participating in the consortium, are offset by the associated increase in case load outputs.

This proposal addresses the critical and growing shortage of veterinary laboratory diagnosticians in Australian laboratories by providing a continued supply of trained specialists.

A high standard of operation of our national laboratory network is an essential component of national surveillance for exotic and emerging animal diseases and this standard cannot be maintained without an adequate supply of trained laboratory staff. The support of the Panel in seeking appropriate Commonwealth funding for this initiative is requested.

Background

The Panel would be well aware of the critical shortage of trained veterinary laboratory diagnosticians in Australia. Forty percent of the specialists employed in our laboratory network are over 50 years of age. Simple modelling predicts that at the current rate of staff retirements, 125 new staff will be needed over the next 10 years. It is estimated that the current level of post-graduate training will only provide 55 of these positions, leaving a short fall of 70 un-filled vacancies over ten years.

In 2008 Animal Health Australia convened a meeting of representatives from Australia's veterinary schools, government laboratories and private laboratories to discuss the Animal Disease Diagnosis Training Initiative. This document is an outcome of that meeting and proposes that a consortium be formed that includes the six veterinary schools, animal health laboratories and industry, to develop and deliver a training program in laboratory diagnosis of animal diseases. The proposal has the support of all parties and is supported by the National Animal Health Laboratory Strategic Reference Group.

The proposal

The six Australian veterinary schools will collaborate to prepare a nationally standardised, 3 year Masters program in veterinary laboratory diagnosis. The key outcome is to produce trained veterinary graduates with enhanced skills in case management of the diagnostic workload presented to our animal health laboratory network. These skills will include pathology, microbiology, virology, serology, parasitology and molecular biology.

The Master's program would be administered by university members of the consortium, but would involve partnerships with non-academic employment sites to provide ample learning experiences.

The curriculum would comprise core (required) and elective units of study. The final curriculum content would be selected by a *Steering Committee* consisting of representatives from each of the consortium members and external experts. The core material will be delivered through both consortium-provided classes and case-based ("hands-on" or "experiential") learning occurring largely at and through the employment site of the trainee. The latter is an indispensable means for training pathologists in case management and has substantial international precedent.

Students eligible for enrolment in the program will represent veterinarians and others with a range of abilities and prior experience in animal disease diagnosis and a range of employment histories/status. For veterinary specialties, a veterinary degree will be a prerequisite to the program since it is required for specialty certification. Students may already be employed in an animal health diagnostic lab or just recruited to an animal health diagnostic lab as a trainee. Recent Australian graduates may remain attached to a university veterinary faculty. The *steering committee* will approve employment sites to ensure the adequacy of supervisory arrangements, caseload diversity, and assessment of trainees.

Assessment and training of students will include:

- Case-based learning through participating in post-mortem and histopathology and associated case management and these activities at their place of employment
- Seminars and coursework delivered by the university where the student is enrolled
- Consortium-developed and distributed learning materials facilitated by each participating university
- Credits for participation in research
- Periodic workshops – these may be delivered locally or via electronic media
- Elective subjects (eg laboratory animal pathology) according to the student's interests.

The coursework provided by the consortium would use shared, non-overlapping resources and staff to efficiently ensure exposure of trainees to a broad range of material that would not be

available at any single institution. A collaborative effort in training veterinary laboratory diagnosticians in Australia using such a model would provide the basis for a national standard of excellence, and would provide a training experience that equals or surpasses those available internationally. This would meet industry needs.

Outcomes

For veterinarians, the Masters program would prepare candidates for the Membership Examinations of the Pathobiology Chapter of the Australian College of Veterinary Scientists. The Masters program would also qualify candidates for examination by the American College of Veterinary Pathologists (ACVP), provided mentoring under a Diplomat of the college has occurred. Successful completion of the ACVP examination is accepted internationally as the benchmark in veterinary pathology.

For other laboratory specialists, the program would prepare candidates for comparable post-graduate qualifications.

Indicative financials

Establishment and management costs for the program have been estimated at $3.5M including administration, course development and technology support. Following the first 5 years of delivery, development costs would reduce dramatically but the above costs would not entirely disappear, as the central consortium office would be ongoing. Operational costs over the 5 years are estimated at $3.3M.

In addition, it is proposed that the Consortium manages sufficient funds to provide salary and tuition for 6 enrolled students per year (one per participating university) for the next 5 years. This has been estimated at approximately $6.6M over 5 years and would enrol 30 students in the course. Thus the total cost for 30 students in the first 5 years is estimated at $13.4M but this may be offset by some cost recovery leaving a net cost of $12M.

The Masters program would also be available to eligible students who are not awarded consortium funds. A further 20 students could be enrolled over the next 5 years. Salaries and tuition fees for these students would be borne by their sponsoring employer at a cost of about $5M over 5 years.

Total national expenditure to alleviate the present deficit in veterinary laboratory diagnostic personnel would therefore be around $17M based on this model.

Benefits of the model

The efficiencies of a consortium model include:

- Avoids duplication of units of study across universities
- Avoids the duplication of project management and educational design if multiple programs were separately developed by universities
- Shared teaching resources
- Coordinated marketing is possible
- Coordinated administration and e-learning infrastructure is possible
- Provides students with local contact with their veterinary school.

The Consortium model represents an exciting and innovative approach to addressing the problem of supply of veterinarians trained in laboratory diagnosis and case management. The National Animal Health Laboratory Strategy Reference Group and all stakeholders support the consortium model and recommend it to the Quarantine and Biosecurity Review Panel. The Panel's support in seeking Commonwealth funding for the establishment and operation of this initiative is requested.

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1 July 2008