

Final grant report form: Norman Hayward Fund

PROJECT/STUDY TITLE:	MAXIMISING VALUE OF EXTRA MURAL STUDY PLACEMENTS ON CATTLE, SHEEP AND HORSE UNITS Development of welfare assessment and communication skill educational resources
PRINCIPAL APPLICANT(S)	Prof David Main (University of Bristol) in collaboration with Dr Dorothy McKeegan (University of Glasgow)
GRANT AWARDED (DATE):	October 2009

Lay summary of project outcomes, achievements and potential impact: Max 300 words

A new Welfare Assessment Computer Aided Learning (CAL) educational resource was created to complement and enhance the existing Pre-Clinical Extra Mural course within the UK. The CAL was informed by the Kolb's cycle of Experiential Learning. The CAL was trialed amongst over 200 first year veterinary students at the University of Bristol and was found to be well received by the majority of students (rated as useful and easily accessible) and to have significant positive influence on students' animal welfare learning experience. The CAL has been incorporated into the University of Bristol Animal Management course (since 2011) and has been made available to a number of Veterinary schools such as Liverpool, Glasgow and Edinburgh.

In addition, in response to feedback from the consultation exercise undertaken during development of the welfare assessment CAL, educational resources on communication strategies were developed with a view to promote behaviour change in animal owners. This led to development of an online tutorial for the acquisition of communication skills in veterinary undergraduates which has been shown to have a positive impact on their use of gathering and giving information skills. The tutorial has now been included in the study curriculum of Bristol first year veterinary undergraduates and is available to other veterinary schools.

In addition five focus groups with farm assurance assessors, staff of re-homing centers and veterinary undergraduates were used to define and characterize potential influencing strategies with animal owners on the management of their animals. A variety of strategies were defined during the workshops and were later cross referenced to other known behaviour change strategies. This work is a useful foundation for a recently funded BVA Animal Welfare Foundation study on promoting the uptake of veterinary advice (led by Dr Kristen Reyher).

Provide detailed expenditure breakdown of how your grant was spent against the budget headings in your original application. This can be submitted this as a separate report page.

See separate page

Detailed progress against original objectives: List outcomes against original objectives. Discuss what has been achieved, including any statistical analysis completed as part of the project.

The overall aim of the collaborative project with Glasgow was to "ensure maximum benefits to students, farmers/horse owners and animals are gained from the EMS experience requirements of veterinary students on cattle, sheep and horse units."

Integrating welfare and ethics teaching into EMS at an early stage of the veterinary course will serve to increase students' knowledge in this area and will in turn benefit the animals they

encounter during the remainder of their studies. The Bristol work has generated educational resources that increase the welfare assessment and communication skills of veterinary undergraduates. The following is a summary of the three key activities related to the original objective to “develop and validate welfare and health planning assessment tools for cattle, sheep and horses that are appropriate for EMS students and are designed to improve engagement and learning”

1. Welfare assessment educational resource :

A Computer Aided Learning (CAL) educational resource based on Experiential learning principles has been developed. The aim was to improve veterinary students' ability to critically review the effect upon welfare of husbandry systems observed during their work placement on sheep farms. The CAL consisted of lectures, multiple choice questions, video recordings of animals in various husbandry conditions, open questions and concept maps. One intervention group of first year veterinary students (n=31) was selected randomly to access the CAL before their sheep farm placement whereas a control group (n=50) received the training after the placement. Assessment criteria for the categories 'remember', 'understand', 'apply', 'analyse', 'evaluate' and 'create' based upon Bloom's Revised Taxonomy were used to evaluate farm reports submitted by all students after their two week placement. When compared to students who did not receive the training ($p < 0.05$), students in the intervention group were found to be more likely to 'remember' and 'understand' animal based measurements relating to the freedom from hunger and thirst, from discomfort and from pain, injury or disease. Intervention students were also more likely to 'analyse' the freedom from pain, injury or disease and the freedom to exhibit normal behaviour and 'evaluate' the freedom from fear and distress when compared to their untrained colleagues ($p < 0.05$). Relatively few students in each group exhibited 'creativity' within their reports. These findings indicate that use of the CAL prior to farm placement improved students' ability to assess and report animal welfare as part of their extra mural work experience.

2. Communication skills educational resource :

Effective communication skills are the foundation for various behaviour change techniques and are thus considered to be one of the most important expertise of the health care professions. In the case of veterinarians, being able to communicate effectively with clients can be considered as a tool to elicit behaviour change in clients to positively and continuously improve the welfare of their animals. A novel online tool for the acquisition of communication skills was developed following the collection of baseline data (n=39) on the ability of second year University of Bristol veterinary undergraduates to communicate effectively with simulated clients. The online tool was subsequently tested with University of Bristol animal behaviour and welfare undergraduate and postgraduate students (n=38) in order to determine whether the tool had a positive effect on the students' communication skills. The participating students were divided into two groups and were tested twice on their communication skills using simulated clients, with one group of students completing the online tool before the second test. The tests were recorded on video and an independent assessor scored the student's communication skills using a “communication skills grid” that was adapted from the “NUVACS guide to the veterinary consultation”. The results indicate that the students that completed the online tool performed significantly better at the introduction, active listening and displaying empathy and understanding stages in test 2 compared to test 1.

3. Better understanding of influencing skills

With the advances in animal welfare science comes the challenge of promoting motivation in animal owners, such as farmers, to implement better welfare practices and to continuously improve the welfare of their animals. Although the government play an important role by implementing and reinforcing animal welfare legislation, it is farm assurance schemes that, by working closely with the producers, are likely to be able to promote the motivation for behaviour change in producers to continuously improve the welfare of those animals that are under their care. It is thus important to monitor and understand the opportunities and challenges that the farm

assurance schemes are faced with when stimulating the producer's interest both in formal ways (through the assessment procedure) and in informal ways (via discussions).
 A telephone interview protocol was designed in order to monitor the outcomes of a new style assessment procedure for laying hens, that has was introduced to the Soil association and RSPCA Freedom Food farm assurance assessments as part of the AssureWel Project, a five year collaborative project between the two schemes and the University of Bristol. The novelty of the new style assessment consists in the inclusion of welfare outcome measures (i.e. animal based measures) as well as a greater focus on the discussion between assessors and producers. A total of sixty producers from both schemes were contacted during a one-year period, half of which had already received the new style assessment and half hadn't.
 The results from the telephone interviews were very positive with regards to the formal assessment procedure, however some gaps were identified with regards to the informal part of the assessment (i.e. the discussion and promotion of the advisory system). In addition, most producers expressed in interest in the inclusion of a joint assessment within the assessment procedure.

Were there any challenges or barriers/modifications to the project? Explain the nature of and reasons for any changes in project focus, scope, delivery, schedule or evaluation.

As with Glasgow the original proposal was to create 3 separate on-farm tools, 1 each for cattle, sheep and horses. As the tool created was generic it was successfully used for encounters with all three species, and could be used for others as well.
 The original proposal also emphasized health planning. The welfare assessment resources are relevant for this activity, however, the initial consultation with other vet schools highlighted that health planning skills should be primarily focused on clinical aspects of the course rather than during EMS. This led to a shift in emphasis of the project towards communication and influencing skills.

Provide details of knowledge transfer activities to date and any future plans/actions

The EMS coordinators (or their representatives) were all approached and consulted during the creation of the new welfare assessment CAL. The Universities of Glasgow and Liverpool were visited so the CAL could be demonstrated to EMS staff. Feedback on the CAL was collected from the above two institutions as well as from SAC (Francoise). Our current understanding is that the University of Glasgow has asked for the teaching content for use in their own teaching.

Provide details of any original peer-reviewed research papers, book chapters and books/monographs that have resulted directly from your work supported by this grant.

A New Educational Resource to Improve Veterinary Students' Animal Welfare Learning Experience. (2013) A. J. Kerr, S. M. Mullan & D. C. J. Main. JOURNAL OF VETERINARY MEDICAL EDUCATION 40; 342-348 doi: 10.3138/jvme.0113-006R

Have any other funding bodies been involved in supporting the development of the work supported by this grant?

No

Has any intellectual property activity has resulted directly from the research funded through this grant to date?

Teaching tools and packages have been created, but the intention was always to make these freely available to other Veterinary Schools.

Briefly tell us about the staff who received a salary or stipend from this grant (including yourself) - Name, job title, full or part time

Annie Kerr (Part time) and Federica Monte (Full time) PhD student (Some funding for Federica was supplied by the AssureWel Tubney Charitable Trust funded project
David Main (supervisor)

How has the grant contributed to the professional development of the staff named above (including yourself)? Max 250 words

PhD research training has been provided in welfare and scientific methods for Annie Kerr and Federica Monte. Both students are currently finalizing their PhD thesis and are due to submit within the next few months.
Annie Kerr also attended the modules of a Teaching and Higher Learning post-graduate certificate in higher education at the University of Bristol and completed an RCVS Diploma in Animal Welfare Science, Ethics and Law as part of the PhD project. Annie has moved to Australia where she has developed good links with the local veterinary school and aims to continue in welfare studies. Federica Monte, a Bristol Animal Behaviour and Welfare graduate, is currently working on a Defra funded study on the optimal design of enriched laying hen cages.
The project has enabled Professor David Main to extend research interests further into welfare improvement strategies.

Have you, or any of the staff included above, received any prizes, awards or commendations as a direct result of the research supported by this grant to date? If yes please give details, including the name of the recipient.

This work was part of the body of work leading to promotion of David Main in August 2013.

If any clinical trials been supported by the funding of this grant please enter the title of the trial and briefly describe any key developments or outcomes (Max 300 words)

No

Have the results been published? If yes please state when:

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Use the space below for any other relevant information you wish to report on at this time

Further papers in are in the process of being submitted to peer reviewed journals