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FACULTY OF VETERINARY MEDICINE

INVEST 2012 Proceedings

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Preconference Workshop – Monday August 6, 2012

Educational research in Veterinary Medicine – an Introduction

Speakers: Sarah Baillie (Univeristy of Bristol) and Kent Hecker (University of Calgary)

Participants learned educational research techniques and were helped by the facilitators to design their own educational projects. Emphasis was given to research design and methodology including human ethics approval, participant recruitment, and results analysis.

Day One – Tuesday August 7, 2012

Day One – Tuesday August 7, 2012 – Program at a glance

8:00 AM		Coffee, Light breakfast, registration
8:30 AM	Dr. Jerry Bailey Dr. Emma Read	Opening Remarks
9:00 AM	Dr. Sarah Baillie	*It's not just about the toys: How do we promote effective learning in clinical skills labs?*
10:00AM		Coffee Break and Gallery Walk
10:30 AM	Dr. Catriona Bell	*The use of peer assisted learning (PAL) methodologies to teach basic clinical examination skills*
11:00 AM	Ms. Hillary Carroll and Mr. Mike Hinckley	*Differing perceptions of core day one clinical skills: Comparing student, faculty and hiring practitioner perspectives*
11:30 AM	Dr. Darlene Donszelmann	*The development and evaluation of an equine dental exam simulator designed to assess student performance in an objective structured clinical examination (OSCE) station*
Noon		Lunch – Sponsored by Iams
1:00 PM	Ms.Chelsea Farnsworth and Ms. Eryn McGowan	*Effects of developing surgical skills curriculum on 3rd year DVM student surgical performance using ovariohysterectomy as a model*
1:30 PM	Dr. Sue Dawson	*Unexpected rewards of outcome based assessment*
2:00 PM	Dr. Lorrie Hale-Mitchell	*Novel methods used in teaching and assessment of large animal clinical skills at the University of Illinois, College of Veterinary Medicine*
2:30 PM		Coffee Break and Gallery Walk
3:00 PM	Dr. Darlene Donszelmann	*Effect of time allowed on first year veterinary student performance in an objective structured clinical examination*
3:30 PM	Dr. Emma Read	*Assessment of clinical skills and clinical reasoning in the undergraduate veterinary program at the University of Calgary – the use of objective structured clinical examination (OSCE) and script concordance testing (SCT)*
4:00 PM		Open discussion re teaching learning and assessment of clinical skills
4:30-7:30 PM		Poster Session and Opening Reception – Wine and Cheese Event (Generously Sponsored by Pfizer Animal Health, Canada) Tours of the CSB

Meet Our Keynote Speaker for Tuesday August 7ᵗʰ, 2012:

Dr. Sarah Baillie – Biography

Professor of Veterinary Education, School of Veterinary Sciences, University of Bristol and National Teaching Fellow of the Higher Education Academy. Bristol, UK.

Dr. Baillie is an internationally known and highly respected veterinary educator and researcher. She is a fellow of the Academy of Medical Educators (AoME) and a National Teaching Fellow of the Higher Education Academy in the UK. She has a PhD in computing science from the University of Glasgow and combined with her extensive experience in veterinary practice, this has led her to be an expert in the field of haptic simulation. Indeed, she is most well recognized as the developer of the "haptic cow". She is a world authority on validation of simulators and one of the developers behind the NOVICE Network. Dr. Baillie has recently returned to her alma mater at the University of Bristol where she has accepted a research chair position in veterinary education.

The use of Peer Assisted Learning (PAL) methodologies to teach basic clinical examination skills. <u>Catriona Bell</u>, Neil Hudson, Richard Mellanby, Susan Rhind.

Senior Lecturer in Veterinary Education, Royal (Dick) School of Veterinary Studies, University of Edinburgh, Easter Bush Campus, Roslin, Midlothian, UK.

Clinical skills training for undergraduate veterinary students at the Royal (Dick) School of Veterinary Studies, Edinburgh comprises a 'vertical thread' curriculum which runs from 1st to 4th year, and incorporates Peer Assisted Learning (PAL) methodologies to consolidate canine clinical examination skills. 1st year students attend three classes delivered by Faculty staff which particularly focus on observation, palpation and auscultation skills with live dogs, followed by one 'revision and consolidation' class facilitated solely by 4th year 'PAL tutors'.

'PAL tutors' receive training from Faculty in 'how to design and deliver a teaching session', and then work in small groups (4 or 5 students) to design a lesson plan for a one hour PAL teaching session for a small group of 1st year students. They are instructed that this must be based around learning objectives previously delivered in the Faculty taught classes, but that otherwise they may deliver their session using whatever techniques they choose. Following delivery of the PAL classes by 4th year tutors, 1st year tutees are asked to provide feedback on the PAL teaching that they have received using a standardised evaluation form.

Results of such evaluations have shown that these classes are very positively received by 1st year tutees. Common themes in the data reflect positively on the content and creative methods of delivery employed by the 4th year tutors. In addition, the benefits of being taught by 'near peers' are also evident and include the fact that the PAL tutors have recently learned the same clinical skills themselves, and are also perceived as being 'easier to ask questions' than Faculty.

Ongoing quantitative and qualitative evaluation is being undertaken with 4th year PAL tutors to establish their perceptions of the classes, and preliminary data will be available by the date of the INVEST conference in August 2012.

Differing Perceptions of Core Day one Clinical Skills: Comparing Student, Faculty, and Hiring Practitioner Perspectives

Hillary Carroll, Mike Hinckley, Tomasina Lucia, Chelsea Farnsworth, Eryn McGowan, and Julie Cary. Washington State University College of Veterinary Medicine, Pullman, Washington, USA.

There is increasing pressure on Colleges of Veterinary Medicine (CVM) to produce graduates with demonstrated ability in "day one clinical skills." Practice owners and managers would like to have reassurance that new graduates can be expected to function at a level resulting in revenue generation in their first year of hire. Veterinary students, clinicians who educate them, staff, and hiring practitioners may have different views on what skills are required to be successful. While intuitively, teaching basic clinical skills seems logical and easy to accomplish, developing a successful corresponding clinical skills curriculum has been a challenge for many CVM's. Perhaps one reason is the lack of clear, objective set of core competencies a graduate should possess. The purpose of this project was to review the literature on expectations of DVM graduates related to clinical skills proficiency at the time of graduation. Following evaluation of the current literature, a survey was developed to assess the attitudes of DVM students, faculty, staff, practice preceptors and members of regional veterinary medical associations about the importance, utility, and frequency of specific clinical skills. Along with understanding differing opinions of stakeholders in the DVM curriculum, results of this project can provide better definition for the proficiencies CVM clinical skills training and assessment should strive for in the curriculum.

The Unexpected Rewards of Outcomes-Based Assessment

Susan D. Dawson(1), Tess Miller (2), Sally Goddard (1), Lisa Maag Miller (1). Atlantic Veterinary College (1) and Faculty of Education (2), University of Prince Edward Island, Charlottetown, Prince Edward Island, Canada.

Calls for increased accountability in higher education from accrediting bodies (e.g., AVMA COE) have placed a heightened focus on curriculum in veterinary schools. Such impetus for change has resulted in a reform of curriculum and assessment practices. 21st century reform of curriculum calls for a shift from content (e.g., knowledge and conceptual understanding of curriculum) to competencies (i.e., defining what students are able to do with what their learning). In our curriculum competencies are articulated in terms of learner outcomes and indicators.

This presentation will highlight the implementation of outcomes-based assessment of clinical competencies for fourth-year students at the Atlantic Veterinary College, University of Prince Edward Island. Outcomes-based assessment is used as an assessment and feedback instrument for students as well as an instrument for curriculum review. Learning outcomes were developed in collaboration with an Education Consultant who was pivotal in working with Faculty to define learning outcomes and indicators. Initial feedback from Faculty and students has been positive. This process has provided a sense of renewal in teaching and increased collaborative efforts among Faculty. New initiatives include the development of a professional portfolio for students and the development of outcomes-based assessment for the preclinical courses. The process of this reform in veterinary education is presented along with initial feedback on the impact of curriculum competencies on students' learning.

Novel Models Used in Teaching and Assessment of Large Animal Clinical Skills at the University of Illinois College of Veterinary Medicine.

Connie J. Arnold[1], Lorrie K. Hale-Mitchell[1], Dawn E. Morin[1], University of Illinois, College of Veterinary Medicine, Urbana, Illinois, USA.

Few models are available for use in teaching large animal clinical procedures to veterinary students. Available mannequins and simulators are quite costly. At the University of Illinois, we have created several inexpensive models and adapted others to help meet our educational goals. Vertically-mounted vinyl- and canvas-covered pads serve as trainers for aseptic preparation and suturing of bovine flank skin. Simulated disposable bovine horns created from inexpensive and recycled materials are used to teach surgical dehorning procedures. Leather belts allow students to safely learn cautery disbudding techniques. Sawhorses serve as bovine "bodies", onto which homemade models are attached to teach castration, mammary procedures, and oral medication administration. Simple inexpensive materials purchased at local hardware, craft, and fabric stores were used to create models to teach equine lip twitching, hemostasis, wound management, and tail tying. A human injection trainer anchored to a bovine mannequin allows students to learn proper IM and SC injection practices. Procedures are learned during the Surgical Skills, Farm Animal Husbandry & Techniques, and Equine Medicine & Surgery rotations in years 1 and 2 of the curriculum. Proficiency is assessed in OSCEs in Years 2 and 3. Preliminary OSCE results and feedback from faculty and staff suggest our inexpensive models are enhancing preparation of students for final clinical rotations.

**Effect of Time Allowed on First Year Veterinary Student Performance
in an Objective Structured Clinical Examinations (OSCE)**

Darlene Donszelmann, DVM, BSc and Andrea Vallevand, PhD.
University of Calgary Faculty of Veterinary Medicine, Clinical Skills Building, 11877
85 Street NW Calgary, AB, Canada.

Introduction

Insufficient time to complete a clinical skills station has been consistently cited by students as one reason for poorer than expected performance on Objective Structured Clinical Examinations (OSCEs).

Purpose

The purpose of the study was to evaluate whether student performance improved when the time to complete each station was increased from five to seven minutes.

Methods

Four clinical skills stations from the October 2010 OSCE were repeated in the October 2011 OSCE. Scores were compared using an analysis of variance. Station data were analyzed using descriptive statistics and item analysis.

Results

Analysis of variance revealed statistically different differences on three of four stations. Descriptive statistics revealed the mean station score was higher on the five minute OSCE in the small animal restraint and suturing stations, while the mean score on the seven minute OSCE was higher in the surgical equipment station. Item analyses identified seven and four checklist items (small animal restraint and suturing stations, respectively) where the seven-minute participants performed more poorly. One checklist item was performed more poorly by the five-minute participants on the surgical equipment station.

Discussion

It will be suggested that student skill and training plus rater stringency; not station duration is responsible for the differences. Students in the seven-minute small animal restraint station were less capable of securing the animal and placed themselves at an increased likelihood of being bitten. These same students in the suturing station were penalized for cutting the suture lines too short, which may indicate training issues. Furthermore, one rater was singularly unimpressed with how these students pushed the needle into the wound. Conversely, students in the five-minute surgical equipment station demonstrated poor incision skills. When mean scores indicate group differences, an item analysis should be conducted to inform the location as student skill or rater scoring may be responsible; not station duration.

Assessment of clinical skills and clinical reasoning in the undergraduate veterinary program at the University of Calgary – the use of objective structured clinical examination (OSCE) and script concordance testing (SCT).

Emma K. Read, DVM, MVSc, DACVS.
University of Calgary Faculty of Veterinary Medicine, Clinical Skills Building, 11877 85 Street NW Calgary, AB, Canada.

At the University of Calgary Faculty of Veterinary Medicine OSCE's are utilized to assess student performance of technical skills. In the development of the UCVM program the OSCE's have been modified from their original format to incorporate a greater emphasis on the incorporation of clinical communication, critical thinking and clinical reasoning. This presentation will highlight the evolution of the OSCE's at the University of Calgary and will review the assessment done to date to evaluate their effectiveness. In order to further assess clinical reasoning, a script concordance test (SCT) was developed for assessment of the final year students. Methods used to construct the exam will be reviewed, as will the results of the analysis. Correlation between SCT and OSCE scores, as well as comparison to other assessments will be provided. Advantages and disadvantages of each testing method will be discussed.

THE DEVELOPMENT AND USE OF LOW FIDELITY MODELS IN TEACHING SURGICAL SKILLS EARLY IN THE VETERINARY CURRICULUM

Robin Fio Rito, Claire Spackman, Eric Pope, Andrea Peda, Janel Rose, and Kevin Hanley. Ross University School of Veterinary Medicine, West Farm, St. Kitts, West Indies.

Abstract:
The students spend seven pre-clinical semesters at the Ross University campus located on the island of St. Kitts. They begin their surgical skills training in the first semester. In semesters one through four the focus is on basic instrument handling, knot types and knot security, surgical hand ties, ligatures, and suturing. The low fidelity models used in these labs are Ethicon knot tying boards, ligature boards, small vessel models and fabric held in embroidery hoops. Silk suture on a reel and fishing line are used in place of sterile suture.

Each skill is introduced in a formal instructor-facilitated lab. The students are expected to review the instructional videos and resources available online prior to the laboratory. When a student feels he or she has achieved a skill, his or her performance of that skill is directly assessed by an instructor. If the student is able to perform the skill, at the level expected, it is documented in their eFolio. The students are required to purchase a basic instrument set and suture material so that they can practice outside of lab. As their skill level progresses, they may borrow different types of models for practice at home.

In the 5th semester the focus is on suture patterns and use, suturing in different tissue planes and orientations, ligating small vessels and clamping techniques with an emphasis on gentle tissue handling, efficient suturing and secure ligature placement. The students are given a ROSSie model to practice these skills. This ovariohysterectomy model was developed by modification of the DASIE™. The model allows for them to advance their surgical skills while performing a simulated surgical procedure.

In 6th semester the students are introduced to aseptic technique. They participate in facilitated practice labs for the ovariohysterectomy procedure on the ROSSie and they practice suture patterns on cadaver tissues. At the end of their 6th semester the students are individually examined on the skills used in performing an ovariohysterectomy procedure using the ROSSie model. The students are required to pass this exam prior to progressing to 7th semester.

Change of Course in Surgical Skills Training: Logistics and Outcome of a 2 Year Pilot Foundational Surgical Program at WSU

Tomasina Lucia, Chelsea Farnsworth, Eryn McGowan, Hillary Carroll, Mike Hinckley, and Julie Cary. Washington State University College of Veterinary Medicine, Pullman, Washington, USA.

Maintaining effective clinical skills training laboratories for DVM students can be challenging in a climate of constrained budgets and limited faculty time. However, the importance of developing and refining clinical skills cannot be over-emphasized in a DVM curriculum, particularly in light of current circumstances wherein student debt levels necessitate higher starting salaries and practitioners demand productive graduates to generate income. During this presentation, we will describe a two-year long pilot project geared toward development and refinement of foundation surgical skills utilizing an "open lab" format. The "open lab" premise was that student participation was optional, with limited faculty time and judicious budgetary resources. Using surgical models and cadavers, the focus was to provide a low-stress opportunity to expand on basic surgery skills and expose students to more advanced skills in a practice setting, while utilizing Teaching Assistants from the DVM student body to assist in learning at a low cost to faculty. We will discuss the challenges and opportunities we identified with this model of clinical skills learning in addition to covering expenses incurred, time required, and impact perceived on the curriculum and learning environment.

The other end of the spectrum: Low physical fidelity veterinary simulators & models

Ashley Whitehead, BSc, DVM, DVSc, DACVIM

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As we move towards the use of more complex and technically advanced simulators in veterinary education, it is important to remember that there are options that are made from simple everyday materials. These simulators and models have low physical fidelity and low cost but high psychological fidelity. Part task simulators and models can provide students with an interactive and engaging experience that permits inquiry based learning in lectures or clinical laboratories. The goals of these low physical fidelity veterinary simulators and models are to reduce the number of live or cadaver animals used, provide a "view" inside the animals so that instructors and students can ensure they are correctly performing the task, break a complex or difficult to understand concept into simpler easy to remember skills or pieces of knowledge, provide an alternative way of teaching to ensure that all types of learners are engaged.

Some Examples:

Understanding basic ultrasound principles: Jello in a kitty litter box containing a metal spoon, various shaped bones, balloons filled with water and air, plastic animals

Structures palpable per-rectum in the horse: Magnetic white board, laminated cut-outs of abdominal organs with magnets on back

Flow of blood through the heart and origin of heart sounds: Duct tape or masking tape outline of heart and students walk through the heart

Anatomy of uterine torsion: pillow case uterus, garbage bag vagina, casting stockinet broad ligaments attached to either a cardboard box or pelvis bone

Correction of a uterine torsion using a plank: Large tarp, thick XL garbage bag, 2"x6" board, student or heavy stuffed animal

Placental passage in the mare: Sweat pants, stuffed animal, ribbon

Pedagogical Merit Review of Education Protocols Involving Animal Use

Marc Avey[1], PhD & Gilly Griffin[1], PhD. Canadian Council on Animal Care, Ottawa, Canada.

The Canadian Council on Animal Care (CCAC) is responsible for setting and maintaining standards for the use of animals in science (including education). Education encompasses both the teaching of established principles, facts, and attitudes as well as training of manual skills, specific techniques or procedures. Prior to the development of any guidelines document by the CCAC, research is conducted to assess whether there is a need to develop guidance, and what impact any proposed changes might have on stakeholders. The purpose of this study was to gather feedback on three primary topics from institutions that hold a CCAC Certificate of GAP-Good Animal Practice®. We gathered: 1) views on the current CCAC guidance on review of pedagogical merit; 2) views on recommendations made by a CCAC working group on pedagogical merit review; and 3) information on current practices in place at individual institutions. To assess these topics we developed an online survey and distributed it to institutions (academic, government and private), known to use animals for education purposes. The survey was targeted at three user groups, administrators, instructors, and students. Results from this survey will be used to develop a list of issues concerning pedagogical merit review. Participants in the online survey will be invited to participate in a consensus development process around the issues and ideas identified from the survey. Here, we present preliminary results of the online survey.

Day Two – Wednesday August 8th, 2012

Day Two – Wednesday August 8, 2012 – Program at a glance

8:00 AM		Coffee, Light breakfast, registration
8:30 AM	Dr. Bryn Baxendale	Keynote Session: *Notes from a small island: The role of simulation in developing safe and capable health care professionals.*
9:30 AM	Dr. Robert Malinowski	*Learning and Assessment at Michigan State University*
10:00AM		Coffee Break and Gallery Walk
10:30 AM	Dr. Fausto Bellezzo	*The dog abdominal chassis: Teaching surgical skills in a high fidelity abdominal model – A pilot.*
11:00 AM	Mr. Tod Pedersen	*Use of simulation for teaching, learning and assessment in the aviation industry: Lessons learned*
Noon		Lunch
1:00 PM	Dr. Liz Mossop	*Use of creative commons licensed media to enhance the teaching of clinical skills*
1:30 PM	Dr. Dan Smeak	*Modular delivery of core surgical skills instruction in veterinary medicine*
2:00 PM	Dr. Emma Read and Dr. Sarah Baillie	*Using cognitive task analysis to identify steps and decision-making in bovine dystocia*
2:30PM	Ms. Rachel Lumbis and Dr. Sarah Baillie	*Evaluation of a model for developing skill in veterinary dental scaling and polishing*
3:00 PM	Dr. Michael Meehan	*Effective consultation skills training in a primary healthcare veterinary centre using experiential learning and video analysis*
4:00 PM	Pick up for Bus Ride to Boundary Ranch	Clinical Skills Building and Hotels
5:00-10:30 PM	Dinner	Dinner at the Boundary Ranch in Kananaskis Country

Dr. Bryn Baxendale – Biography

Director of Trent Simulation and Clinical Skills Centre, Nottingham University Hospitals, and Honorary Professor of Clinical Simulation, School of Psychology, University of Nottingham.

Dr. Baxendale serves as the current president of the Association for Simulated Practice in Healthcare (ASPiH) in the UK. He is a practicing anesthetist at the Nottingham University Hospitals and since 2006 has been an invited speaker at many national and international conferences. His primary interests are patient safety, medical error and the use of simulation to build effective teams. He is also a fellow of the Academy of Medical Educators (AoME).

Learning and Assessment at Michigan State University

Sarah Abood, DVM, PhD [1], Robert Malinowski, DVM, MA [1], Coretta Patterson, DVM, DACVIM [1], Mary Kay Smith, MSN, RN [2]

[1] Michigan State University College of Veterinary Medicine
[2] Michigan State University Learning and Assessment Center

Michigan State University's Learning and Assessment Center (LAC) was created in 2005 as a joint effort between the Colleges of Human, Osteopathic, Nursing and Veterinary Medicine. This unique multi-college organization allows for better efficiency, new cross-college collaborations and the opportunity to model aspects of team care to achieve improved healthcare delivery. The Center utilizes standardized patients, high and low fidelity simulators and partial task trainers to help health professions students develop and demonstrate competence in basic tasks and skills through in-depth, hands-on training. An advanced scheduling, event management and digital video recording system ensures that all encounters run smoothly. This presentation will illustrate the capabilities of the facility in addition to guiding the audience through a unique veterinary simulation facilitated in the center.

The dog abdominal chassis-Teaching surgical skills in a high fidelity abdominal model. A pilot.

Fausto Bellezzo, DVM, DACVS-LA and Dean Hendrickson, DVM, MS, DACVS-LA.
James L. Voss Veterinary Teaching Hospital, Colorado State University, Fort Collins, Colorado, USA.

In interactive learning, there is a continuous flow of information between the trainee and the expert. The trainee is given a task and while performing this task the expert observes the trainee at work. The trainee has his or her questions and comments answered immediately, and proper corrections, if pertinent, are performed. Once the task is complete the trainee and the expert discuss the trainee's performance and ways of making improvements.

Although requiring much more input from the expert in charge, interactive training reaches the goal of making the trainee an expert much faster and more thoroughly than the passive learning method.

Regardless of how the theory is obtained and absorbed, the common ground among all learning methods is the undeniable need of "hands on" experience. Without actually holding a scalpel blade and putting it against skin, the apprentice will not master the skills necessary to become a good surgeon, or to perform a certain technique. This obviously reflects the need for not only high quality methods of disseminating knowledge, but also the need for a method that connects this knowledge with the required action without unnecessary risk for patients.

In response to this call, the authors have been working on creating a method of teaching surgical skills that utilizes high fidelity simulation models, which we hope will change the way, and increase the frequency that such skills can be taught.

The dog abdominal chassis model aims to do provide the opportunity for not only creating incisions and suturing, but also hemostasis, skin reconstruction techniques, cystocentesis, surgical approaches to the abdominal cavity, splenectomies, nephrectomies and small intestinal resection and anastomosis. Its creation, adaptation and implementation are our next immediate goals and we hope that this will provide us with data that will further validate our efforts.

Use of creative commons licensed media to enhance the teaching of clinical skills

Liz Mossop and Zoe Belshaw
School of Veterinary Medicine and Science, University of Nottingham, Sutton Bonington, UK
When teaching clinical skills the use of media is often essential to enhance introductory presentations. Video and photographs can be used to prepare students for the task they are about to undertake, making them as comfortable as possible and therefore more likely to succeed when they experience the procedure "hands on". Video clips can also be used by students in self-directed learning sessions in the skills lab.

Access to media can be difficult for several reasons. New teachers may struggle to obtain the types of material they require. Consent can be difficult to obtain from owners of animals featured in images, particularly if the images are old. There are also copyright issues associated with some material.

Nottingham Veterinary School decided to overcome these issues by creating a new image database. Good quality images and HD video clips were collected by students working at charity practices, and full consent was obtained from owners where necessary. The database is stored on line in a fully accessible repository (www.flickr.com/nottinghamvets) and all are Creative Commons licensed BY-NC-SA 2.0. Some more sensitive material is stored in a group (http://www.flickr.com/groups/vetoer/) to which access has to be requested.

There are over 4000 images and clips available. They have been accessed and used extensively. Nottingham has also used many of the images in the Virtual Veterinary Hospital which is part of Wikivet (http://en.wikivet.net/Virtual_Veterinary_Hospital). It is hoped that other institutions will also contribute to the database.

Title: **Modular Delivery of Core Surgical Skills Instruction in Veterinary Medicine**

Daniel D. Smeak[1], DVM, Diplomate ACVS and Lawrence Hill, DVM[2], Diplomate ABVP

[1]Colorado State University, College of Veterinary Medicine and Biomedical Sciences, USA and [2]The Ohio State University, College of Veterinary Medicine, USA.

Based on results of 2 recent national surveys conducted by the authors about core surgical skills and proficiencies expected of entry-level veterinarians, an initiative has begun, the goal of which is to create a complete set of interactive core skills trainers in a digital multi-media modular format to be delivered through a centralized e-learning platform. Advantages of these modules include: guided/self-paced skills acquisition in a low stakes on-line format; potential reduction of required live animal experiences since students will have the necessary learning resources to acquire the core skills essential for multi-species surgical practice; inherent flexibility and re-usability of the e-learning format will allow for integration of modules into a variety of curricular plans. Developing teaching formats that maximally leverage faculty teaching resources, while allowing earlier opportunities for students to practice critical skill sets, such as those required to become competent entry-level surgeons, is vital to advancing ethical surgical teaching programs and graduating high quality veterinarians. These trainers will help ensure that learners are able to maximize the increasingly limited number of cadaveric and live-animal hands-on training experiences to their fullest potential. This session will highlight our first skills trainer, "Surgical Instrument Handing and Atraumatic Use". The developmental stages of this trainer and the finished module will be presented as a proof of concept. The course will contain a variety of interactive multimedia materials produced specifically for the course including: mini-lectures with 3D illustrations and demonstrations, interactive activities and assessments, course notes, hands-on laboratory exercises, and a course evaluation.

Using cognitive task analysis (CTA) and a bovine simulator to identify steps in dystocia correction.

Emma Read[1], Gord Krebs[1], Gord Atkins[1], Tom Pittman[1], Kent Hecker[1] and Sarah Baillie[2]. University of Calgary Faculty of Veterinary Medicine (UCVM)[1] and University of Bristol, School of Veterinary Sciences[2].

When learning skilled techniques and procedures, students face many challenges. Learning is clearly easier when detailed instructions are available but experts often find it difficult to articulate all of the steps involved in a task, and there is not always clear consensus among experts as to how a specific skill should be performed. This problem is compounded further when the technique is internal e.g. obstetrical procedures. Using a life size simulated cow and calf developed at UCVM, and a group of expert bovine practitioners, we evaluated the steps and decision making involved in performing correction of two different dystocia presentations (anterior leg back and breech) using cognitive task analysis (CTA). The experts were asked to first perform the technique as they would in the field, and then perform the procedure again, while articulating the steps to a novice learner. Video cameras were mounted internal and external within the model to capture the skills used. The audio segments were then transcribed and the video components analyzed to create a checklist of steps for each expert. Consensus was then achieved between experts by interview to create a "gold standard" checklist for each mal-presentation. CTA was useful in defining the technical and cognitive steps required to perform and teach the task. Differences between experts highlight the need for consensus prior to teaching the skill. Additionally, the study identified several different, yet effective, techniques and provided information that could allow experts to consider other methods they might use when their own technique fails.

Evaluation of a Model for Developing Skill in Veterinary Dental Scaling and Polishing

Rachel Lumbis[1], Susan Gregory[1], Sarah Baillie[2]

[1] The Royal Veterinary College, London, UK.

[2] School of Veterinary Sciences, University of Bristol

The influential skill acquisition theory (Dreyfus and Dreyfus, 1980) proposes that the road from novice to expert encompasses five stages; novice, advanced beginner, competent, proficient and expert. For the novice student, clinical skills acquisition involves the transition to advanced beginner or competent; a challenging process which can be facilitated using a 'building block' learning technique in a safe, risk free environment.

Basic simulation models can facilitate mastery of fundamental elements of a skill without fear of personal failure or compromised patient welfare. At the Royal Veterinary College, a simple dental model was developed using tiles (teeth), silicon (gingiva) and grout (tartar) to prepare students for traditional patient-side training. A study was conducted with third year veterinary students to compare the outcomes of learning to perform a dental descale and polish using the new model (Group A) or a video (Group B). Subsequent performance on a canine jaw model was assessed using an objective structured clinical examination (OSCE). Students in Group A scored significantly better than those in Group B ($p < 0.001$). A questionnaire was completed by all students to evaluate attitudes towards the use of the dental model.

Our simple, inexpensive model has been shown to facilitate the acquisition of basic dental cleaning skills and students appreciated its value as a preparatory training tool to supplement existing teaching. Whilst the model is not intended as a substitute for clinical experience, training sessions incorporated into the curriculum prior to clinical placements and rotations, would allow students to be better prepared to assist with the technique on live animals, which would in turn enhance student confidence and enable more rapid skills acquisition. Additionally, our study demonstrates the feasibility of undertaking a structured evaluation of a new model, an approach that helps to advance teaching and learning of veterinary clinical skills.

Reference

Dreyfus, S. E. & Dreyfus, H. L. (1980). A Five-Stage Model of the Mental Activities Involved in Directed Skill Acquisition. Storming Media : California, USA

Effective consultation skills training in a primary healthcare veterinary centre using experiential learning and video analysis

Michael Meehan
Ontario Veterinary College, University of Guelph, Guelph, Canada.

Training veterinary students in primary health care is integral to achieving improved graduate outcomes. Primary healthcare involves a broad range of health services such as health prevention and counselling, as well as disease prevention and diagnosis. As veterinary colleges evolve and adapt to the changing needs of clients and their companion animals so too does effective pedagogical techniques and training of veterinary students. At the Ontario Veterinary College, Guelph, the purpose built Hills Pet Nutrition Primary Healthcare Centre (PHC) combines experiential learning, student centred learning and cutting edge technology to effectively train students. Student centred learning focuses on the student's needs, abilities, interests, and learning styles with the educator as a facilitator of learning. In this way the student voice as central to the learning experience for every learner. In the PHC novel approaches to training involve students conducting consultations from start to finish under the watchful guidance of experienced clinicians as well as "buddy" students. Two-way mirrors, cameras that record and relay to other rooms with monitors allow feedback in real-time. The video-recordings provide a unique opportunity for students and clinicians to reflect upon their clinical consultation skills (i.e. communication skills, physical examination skills, diagnostic procedural skills, animal handling). Clinicians attend continuing education rounds where they are informed about what the students are learning from the veterinary curriculum. They are also encouraged to review their consultation skills under the guidance of a communications expert. Interactive small group communication rounds allow students, under the guidance of experienced communication experts, to review and critique their own videoed consultations as well as other students' videos. In this way students develop strategies and objectives for future consultations. Finally, students' liaise weekly with other universities through real-time video conferencing to raise and discuss challenging cases. These innovative processes foster networking and collaboration and support the student centred approach to training and preparing them for general practice.

Day Three – August 9th, 2012

Day Three – Thursday August 9, 2012 – Program at a glance

8:00 AM		Coffee, Light breakfast, registration
8:30 AM	Mr. Russ Gray and Mr. Bryan Pfahl	Workshop: *Development of Simple Simulator Items*
8:30 AM	Dr. Gord Krebs and Dr. Emma Read	Workshop: *Large Animal Accident Simulation*
8:30 AM	Dr. Julie Cary	Workshop: *Integrating clinical communication, clinical reasoning, and technical procedures in simulation exercise*
8:30 AM	Dr. Liz Mossop and Dr. Jack Wilson	Workshop: *Coaching communication skills*
10:00AM		Coffee Break and Gallery Walk
10:30 AM	Mr. Russ Gray and Mr. Bryan Pfahl	Workshop: *Development of Simple Simulator Items*
10:30 AM	Dr. Gord Krebs and Dr. Emma Read	Workshop: *Large Animal Accident Simulation*
10:30 AM	Dr. Julie Cary	Workshop: *Integrating clinical communication, clinical reasoning, and technical procedures in simulation exercise*
10:30 AM	Dr. Liz Mossop and Dr. Jack Wilson	Workshop: *Coaching communication skills*
Noon		Lunch
1:00 PM	University of Calgary Clinical Skills Instructors	*Mock OSCE* *(panel discussion with other schools delivering OSCEs)*
3:00 PM	Group Discussion	*The Future Directions of INVEST*
3:45 PM	Dr. Alastair Cribb	*Closing Remarks*
4:15 PM	Conference Completed	Safe Travel Home!!

Meet our Workshop Presenters:

Mr. Russ Gray (left) and Mr. Bryan Pfahl (right)

Veterinary Simulator Industries Ltd. company directors Russell Gray and Bryan Pfahl, have a varied skill set that makes them well suited for designing and fabricating simulators. Bryan brings over 25 years of motion picture, television and museum prop building experience in which he designed and constructed many simulated animals including cows, buffalo, deer, sheep, and rabbits. He possesses a good working knowledge of anatomy and skeletal structure and how it relates to an animal's movement and this helps him in the simulation of biological structures. Russ brings 25 years of motion picture, television and educational display experience to the company. He has designed and built many educational displays for various science centers and learning institutions and understands the requirements of a well-crafted teaching tool. They have extensive knowledge of a myriad of different materials and their properties, as well as sculpting, molding and casting techniques. They currently partner with the University of Calgary Faculty of Veterinary Medicine to create simulator models to enhance veterinary education.

Dr. Julie Cary

Julie Cary is an equine surgeon at Washington State University with a special interest in clinical skills teaching. She is the co-director of the Clinical Communication Program, an experiential training program for DVM students, residents and interns. In addition to her work with clinical communication, she has embarked on reassessing traditional surgical skills training. The DVM students participating in INVEST from WSU are part of a pilot group of student researchers in veterinary medical education called the Surgery Skills Research Group.

Dr. Gord Krebs

Dr Krebs graduated from WCVM in 1992. Shortly thereafter, he started Krebs and Company Veterinary Services in Didsbury, Alberta which he operated from 1995 until he joined UCVM in 2008. He still maintains an affiliation with Didsbury Veterinary Services where he performs his clinical practice each week. Dr Krebs' interests include rural veterinary practice, veterinary education, international veterinary relief work and he is a member or the Canadian Veterinary Reserve.

Dr. Liz Mossop

Liz spent several years working as a vet in mixed/equine practice before becoming interested in veterinary education. She is a foundation member of staff at Nottingham Vet School, which is the first new school in the UK for over 50 years. She is heavily involved in developing the innovative Nottingham curriculum and assessment methods. She is currently a Lecturer in Clinical Veterinary Education and teaches on a range of topics, with specific responsibility for leading the professional skills modules and running the portfolio assessments. She is also very interested in clinical skills and the school has developed a number of training models and approaches as the curriculum has a large practical component. Liz has a Masters in clinical education and has just successfully completed a PhD in veterinary education looking at the concept of veterinary professionalism. Current research projects include interprofessional communication and perceptions of patient safety in veterinary practice.

Dr. Jack Wilson

Jack graduated from the University of Saskatchewan in 1972. He entered an exclusively small animal practice in Calgary, Alberta, and became a partner in that business one year later. Jack practiced general small animal medicine and surgery there until 2008.

Jack has served on the council of the Alberta Veterinary licensing board, and on the Canadian National Examining Board, which is responsible for the administration of licensing examinations for all veterinarians in Canada.

In 2008, Jack joined the Faculty of Veterinary Medicine at the University of Calgary as a senior instructor in Professional Skills, teaching clinical communication skills and ethics and jurisprudence to first, second, and third year veterinary students.

Dr. Emma Read

Dr. Emma Read graduated from the Western College of Veterinary Medicine at the University of Saskatchewan in 1998. She completed a surgical residency program in 2003 at the University of Georgia in Athens. She joined the faculty at the Ontario Veterinary College in 2003 where she taught until 2005. In late 2005, Dr. Read returned to Alberta and private referral equine practice. She joined the faculty of the University of Calgary in the fall of 2007. She is Chair of the Clinical Skills courses and a senior instructor of equine surgery. Dr. Read is the recipient of the Pfizer - Carl J. Norden Distinguished Teaching Award, the Student Union's Teaching Excellence Award and the Killam Innovation in Teaching Award. She has an interest in veterinary clinical skills, assessment and simulation.

What is there to do in Calgary?

Heritage Park

This park is situated on the Glenmore Reservoir with stunning views of the mountains. It is a historical village that demonstrates life in Western Canada between 1860 and 1950. Featuring costumed interpreters, historic buildings and a hug collection of working antiques and artifacts.

1900 Heritage Drive SW Calgary, AB. Approximately a 30-45 minute drive from the CSB.

Calgary Zoo

Open 9am – 5 pm daily. Features many Canadian animals as well as the more exotic. Family friendly. 20 minutes from the CSB.

Telus Spark Science Centre

Open 9am - 6 pm daily. Newly opened in 2012. Features sciences displays and creative kids museum. Located adjacent to the Calgary Zoo.

Calgary Stampede

The Greatest Outdoor Show on Earth is held in the first week of July each year. The grounds are open to visitors and feature a western store that is open year round.

Spruce Meadows

Currently ranked the number one showjumping facility in the World (often tied with Aachen, Germany). Competition season runs through early June to mid July with the summer series and then the Master's in September. Open 365 days a year for visitors. Beautiful grounds, a stocked fishing pond and resident horses to visit.

Shopping

The closest shopping centre to the CSB is Market Mall in NW Calgary. Downtown is the CORE. Chinook Centre and Southcentre Mall are both located further south.

Canada Olympic Park and the Canadian Olympic Sports Hall of Fame

Located on the Trans-Canada Highway across from the conference hotels. The site of many of the 1988 Winter Olympic games events. Numerous activites including zipline, mountain biking, bobsled and luge runs.

What is there to do in the mountains?

The Rocky Mountains are only a 40 minute drive to the West from the CSB. There is Kananaskis Provincial Park and Banff National Park (the gateway to the other mountain parks).

Numerous outdoor activites can be found including fly fishing, rock climbing, canoeing, kayaking, hiking, mountain biking. There is good shopping and lots of nice restaurants in both Banff and Canmore. There is also lots of choice for accommodation.

Please don't hesitate to ask us if you need any help in figuring out what to do and where to stay. We would be happy to recommend some of our favorite spots!

Be sure to take the time to visit the mountains if at all possible – it is definitely worth the drive!