Preparing veterinary students for entry-level practice by identifying new graduate outcomes

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For colleges of veterinary medicine in the United States, accreditation by the AVMA Council on Education (COE) is a critical requirement with important implications for both the institution and its students. Certain federal loan programs, for instance, are available only to students attending accredited colleges, and many state licensing boards list graduation from a COE-accredited institution as a prerequisite for licensure. More broadly, however, accreditation by the COE ensures that colleges meet accepted standards of quality and are committed to the concept of continuous improvement.

According to the AVMA, one of the most important purposes of accreditation is to ensure that “graduates have achieved specified learning goals and are prepared to begin professional practice.” At the very core of this is identifying the knowledge, skills, and attributes required for new graduates to succeed in entry-level positions in the veterinary profession.

At the Texas A&M University College of Veterinary Medicine & Biomedical Sciences (TAMU), faculty and administrators have recently developed a set of new graduate outcomes that define the specific knowledge, skills, and attributes graduates of the veterinary program would be expected to possess at the time of graduation and be able to employ the first day of practice. Once created, the new graduate outcomes became the framework for the college’s curriculum and served as the foundation for subsequent curriculum reviews, enabling the college to identify gaps and deficiencies in the curriculum and objectively evaluate, streamline, and optimize the teaching and learning process.

With the new graduate outcomes framework in place, TAMU is able to focus its efforts on strengthening individual aspects of the curriculum to better achieve the designated outcomes. Material not directly contributing to the new graduate outcomes can more easily be eliminated, and content can be better aligned with outcomes, leading to improved student and program success. This is especially important given that as the body of veterinary knowledge expands, educational content could easily overwhelm the 4-year program.

The new graduate outcomes are based on the 9 clinical competencies listed in standard 11 (“Outcomes assessment”) of the COE’s accreditation policies and procedures. However, to fully encompass all of the qualities necessary for a successful veterinary professional in today’s society, we felt it was necessary to include 4 additional competencies. These additional competencies consist of nonclinical skills and behaviors we believe are integral for successful veterinary professionals, such as team collaboration, practice management, and leadership skills; an appreciation of personal wellness, diversity, and inclusiveness; an understanding of legal and regulatory compliance; and a basic understanding of animal welfare (Appendix 1). In addition, we developed a series of performance criteria for each of the 13 clinical competencies that can be used to help guide the selection of student learning experiences and serve as a basis for determining whether students are achieving each expected outcome. For example, the performance criteria for new graduate outcome 1 (comprehensive patient diagnosis [problem-solving], appropriate use of clinical laboratory testing, and record management) include specific standards to ensure that new graduates can obtain an appropriate signalment and history, perform a physical examina-
tion, develop a problem list and differential diagnosis list, construct a diagnostic plan and analyze diagnostic findings, and prepare an appropriate medical record (Appendix 2).

The new graduate outcomes were reviewed for practicality and comprehensiveness through surveys of and focus-group sessions and individual interviews with internal and external stakeholders, including TAMU students, alumni, and faculty; employers of our graduates; and practitioners working alongside our new graduates. Preparing successful graduates for the future takes intensive collaboration among visionary program leaders, dedicated faculty, informed practitioners, candid alumni, and hard-working students. We regard the new graduate outcomes as a living document, and our goal is to continue dialogue with our stakeholders to ensure the new graduate outcomes remain relevant even as our profession grows and changes.

The development of the new graduate outcomes demonstrates our success in bringing disparate groups together to work toward a common goal. At the college, the new graduate outcomes now serve not only as the foundation from which all current and ongoing educational development and review activities are designed, but also as the tool through which students and the veterinary educational program are assessed.

Our intent is to share the new graduate outcomes as a framework for veterinary education with colleagues, both nationally and internationally. We recognize it is important for veterinary educational programs to maintain the freedom to model their curricula independently. As such, colleges can be expected to adapt the new graduate outcomes to reflect and support the needs of their individualized programs. Nevertheless, as Dr. Peter Eyre recently stated, "We are obliged to train veterinarians who can provide for society’s needs. Thus it is imperative to ask ourselves whether present-day veterinary education is optimally effective." We consider the new graduate outcomes to be an effective, innovative, and customizable model for successful achievement of the necessary components of veterinary education. We are interested in receiving feedback on the outcomes and in collaborating with others to improve them. A complete list of the performance criteria for all 13 new graduate outcomes is available at vetmed.tamu.edu/dvm/ngos.

References


Appendix 1

New graduate outcomes established by the Texas A&M University College of Veterinary Medicine & Biomedical Sciences.

1. Comprehensive patient diagnosis (problem-solving), appropriate use of clinical laboratory testing, and record management.
2. Comprehensive treatment planning, including patient referral when indicated.
3. Anesthesia and pain management; patient welfare.
4. Basic surgery skills, experience, and case management.
5. Basic medicine skills, experience, and case management.
7. Health promotion, disease prevention/biosecurity, zoonosis, and food safety.
8. Client communications and ethical conduct.
9. Critical analysis of new information and research findings relevant to veterinary medicine.
10. Team collaboration, leadership, and practice management.
11. Multicultural awareness and personal wellness.
12. Legal and regulatory compliance.

For all commentaries, views expressed are those of the authors and do not necessarily reflect the official policy of the AVMA.
Appendix 2

Performance criteria for new graduate outcome 1: comprehensive patient diagnosis (problem-solving), appropriate use of clinical laboratory testing, and record management.*

1.1 The graduate will obtain a patient signalment, history, and physical examination and formulate a problem list and differential diagnoses based upon their findings for individual or groups of common domestic species.

The student can:
• Use knowledge of anatomy and physiology to perform a complete systematic physical examination of all body systems, distinguishing normal and abnormal findings.
• Obtain a signalment and complete history to collect relevant information about the patient(s).
• Develop an accurate and complete problem list based on the history and physical examination and use semantic qualifiers to develop a concise patient problem statement.
• List and describe the common and significant diseases that are developmental, degenerative, metabolic, nutritional, neoplastic, infectious, immune-mediated, toxic, and traumatic in nature for each of the common domestic species.
• Develop a preliminary differential diagnosis list based on the history and physical examination of the patient(s).
• Apply clinical reasoning skills to rank the possible medical conditions from most likely to least likely.

1.2 The graduate will construct an appropriate diagnostic plan based on their preliminary differential diagnosis list and analyze the findings in order to accurately diagnose common medical conditions in common domestic species.

The student can:
• Explain the pathophysiology that may occur in the major organ systems for each of the common and significant diseases.
• Identify appropriate diagnostic tests and procedures in order to rule in or rule out medical conditions based on the preliminary differential diagnosis list.
• Weigh the potential benefits and risks of performing diagnostic tests on the patient as well as recognizing any client financial constraints in order to develop a definitive diagnostic plan.
• Perform diagnostic tests and procedures, interpret the laboratory data and other test results, and accurately apply this information in order to determine an accurate diagnosis for common medical conditions.

1.3 The graduate will prepare a medical record, documenting all relevant client and patient information, and use the record to communicate effectively with the animal health care team.

The student can:
• Prepare a medical record that concisely summarizes all relevant patient information, utilizing a standard veterinary medical format that is readably understood by the health care team.
• Prepare a medical record that is legible, accurate, and current and conforms to all legal requirements.

*A complete list of the performance criteria for all 13 new graduate outcomes is available at vetmed.tamu.edu/dvm/ngos.

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New Veterinary Biologic Products

<table>
<thead>
<tr>
<th>Product name</th>
<th>Species and indications for use</th>
<th>Route of administration</th>
<th>Remarks</th>
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<tr>
<td>Canine Influenza Vaccine, H3N2, Killed Virus (Zoetis Inc, Lincoln, Neb, US Vet Lic No. 190)</td>
<td>For use as an aid in the control of disease caused by canine influenza virus H3N2 subtype in dogs.</td>
<td>SC</td>
<td>USDA conditionally licensed 11/12/15</td>
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