THE UNIVERSITY of ADELAIDE

SCHOOL OF ANIMAL AND VETERINARY SCIENCES

Doctor of Veterinary Medicine
Handbook of Attributes, Skills and Diseases

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Introduction

In keeping with the many changes in veterinary education over the last decade, there has been a shift in focus to ensure that students achieve certain objectives during their university studies. Although by no means limited to this list, the most significant of these objectives are as follows:

- Problem-solving skills
- An academic level of thought and work
- Social and communication skills
- A basic competence which is appropriate to the employment market for frontline practice in a species-specific sector of veterinary medicine
- Awareness of the importance of lifelong learning

The Doctor of Veterinary Medicine (DVM) program at the University of Adelaide has been designed to achieve these objectives and to develop, in its students, all of those characteristics described in the University's list of Graduate Attributes. The program has also been designed to meet the registration requirements of both the Australian Veterinary Boards Council and the Royal College of Veterinary Surgeons. Compliance with both of these bodies forms part of the School of Animal & Veterinary Sciences' accreditation process and will allow our graduates to register in the United Kingdom as well as Australasia. The description of the various different competencies provided below has been based on an expanded version of the RCVS 'Day One Competencies' list which has been included in this document and can be viewed by following the hyperlink or by visiting the RCVS website at www.rcvs.org.uk .

University of Adelaide Graduate Attributes

All postgraduate programs in the Faculty of Sciences have been planned within the framework of the Graduate Attributes of the University of Adelaide, outlined below.
The University of Adelaide is a research-intensive university which seeks to develop graduates of international distinction by supporting high quality education.
The University of Adelaide provides an environment where students are encouraged to take responsibility for developing the following attributes:

- Knowledge and understanding of the content and techniques of a chosen discipline at advanced levels that are internationally recognised
- The ability to locate, analyse, evaluate and synthesise information from a wide variety of sources in a planned and timely manner
- An ability to apply effective, creative and innovative solutions, both independently and cooperatively, to current and future problems
- Skills of a high order in interpersonal understanding, teamwork and communication
- A proficiency in the appropriate use of contemporary technologies
- A commitment to continuous learning and the capacity to maintain intellectual curiosity throughout life
- A commitment to the highest standards of professional endeavour and the ability to take a leadership role in the community
- An awareness of ethical, social and cultural issues and their importance in the exercise of professional skills and responsibilities

Objectives of the Student Handbook

The handbook has been designed, primarily, as a guide for students in the DVM program. It provides a detailed list of the attributes, skills and disease recognition expected of a graduating veterinarian and allows students to monitor their own progress throughout the program.

It also acts as a guide to the following groups in assessing the level of education of our graduates:

- University staff in monitoring student progress and ensuring that learning objectives are met.
- Veterinarians and their organisations to be able to assess the level of knowledge, skills and professional conduct expected of our graduates
- National and international organisations and government bodies in assessing whether the level of the recent graduate satisfies their expectations
- Other veterinary faculties, both nationally and overseas, in comparing the skill level of our graduates with that of their own.

Handbook Structure

The practice of veterinary medicine goes beyond that of separate disciplines. It demands a way of veterinary thought and action in which knowledge, skills and conduct are applied in a coordinated manner. Learning to think and act in an integrated manner is a central element in the veterinary curriculum. As such, the handbook has been designed to incorporate a list of skills and diseases, many of which may cross the various species disciplines.

A qualified veterinarian may be expected to provide adequate veterinary care to a range of animal species. The handbook provides a list of those species, which are described in detail.

It also provides a profile of the graduate veterinarian and lists a series of problems which may be encountered following graduation. Although it is not expected that all questions posed by clients could be answered in full, graduates should be able to draw on their training to formulate and implement an effective and appropriate response.

The 'Skills List' describes which skills the veterinarian should have on graduation and at what level. The 'Diseases and Syndromes List' describes which diseases and syndromes the veterinarian should know about at the time of graduation, and at what level. Both of these lists indicate the minimum level of competence, broken down by species or discipline, which is expected of all graduates of the DVM program**. It is important, therefore, that students take responsibility to ensure that they have met these minimum requirements over the course of their studies.**

Veterinary Public Health

Veterinary Public Health has been defined by the World Health Organisation as being "the sum of all contributions to the physical, mental and social well-being of humans through an understanding and application of veterinary science". Veterinary Public Health thus embraces the following areas of knowledge: diagnosis, surveillance, epidemiology, control, prevention and elimination of zoonoses and of diseases that threaten food security and social cohesion; protection of food (including meat and milk) for human consumption; food and meat science; environmental protection; animal welfare standards; and the social, behavioural and mental aspects of human-animal relationships. In this regard, Veterinary Public Health should be seen as an integral part of all veterinary activities and students should be aware, at all times, of its impact and importance.

Animal species relevant to the DVM program

Categories of animal species relevant to the DVM program are described as follows:

- Production animals'
    - Animals that are kept for the production of meat or other products of animal origin
- Companion animals
    - Animals that are kept for companionship
- Hobby, recreational, sport and working animals
    - Animals that are kept as a hobby, as a pastime, for recreational purposes, for sports purposes or for specific work tasks
- Laboratory animals
    - Animals that are kept for the purpose of (scientific) research and teaching
- Zoo animals
    - Animals that are kept in captivity for purposes of education and conservation and which are often on public display
- Wildlife
    - Animals of multiple species which are endemic to Australia and exist in a free state in nature
- Feral Animals
    - Animals of multiple species which are exotic to Australia and have escaped from domestication or farming situations to live in the wild (eg camels, foxes, donkeys, horses, deer species, cats, sparrows, blackbirds, etc)

The major species fall into the above categories in the following manner:

- **Cattle** are kept principally as production animals. In addition, cattle are kept, to a limited extent, as a hobby and for recreational purposes, e.g. on children's farms and in wildlife areas.

- **Small ruminants** (sheep and goats) are mainly kept as production animals. In addition, they are kept as a hobby and for recreational purposes. To a limited extent, small ruminants are used as laboratory animals.
- **Camelids/Ungulates** (alpacas, llamas, camels, deer, etc) are kept as production animals as well as for hobby or recreational purposes
- **Pigs** are mainly kept as production animals. To a limited extent, pigs are kept as laboratory animals, as a hobby, and as pets.
- **Poultry** includes domestic hens and chickens, ducks, turkeys, geese and guinea fowl, and these are kept primarily as production animals. They are also kept as hobby animals.
- **Horses**, which also include ponies and donkeys, are mainly kept as pets and for recreational, sports and racing purposes. These animals are kept both professionally (including breeding) and privately. To a limited extent, horses, ponies and donkeys may be production animals. In addition, horses are kept for work tasks (e.g. mounted police).
- **Dogs** are mainly kept as pets. They are also kept for sport (agility and dog racing) and they are used as work, (e.g. police, guard, tracker and rescue dogs) and as assistance dogs (e.g. guide-dogs).Dogs are also kept professionally for breeding. To a limited extent, dogs are used as laboratory animals.
- **Cats** are mainly kept as pets and as a hobby animal (showing). They are also kept professionally for breeding. To a limited extent, they are also used as laboratory animals.
- **Rabbits** are mainly kept as pets and as hobby animals (breeding and showing). Rabbits are also used to a limited extent as laboratory animals or kept as production animals.
- **Rodents** such as rats, mice, guinea pigs and hamsters are frequently kept as pets. These animal species are often used as laboratory animals.
- **Birds** (e.g. pigeons, parrots, finches, hobby backyard fowl and raptors) are kept as pets, as a hobby and for sport. Larger species such as emu and ostrich are kept as production or hobby animals
- **Other species** such as reptiles, fur-bearing animals, amphibians, fish, zoo animals and marine mammals are kept as a hobby, as pets and for recreational purposes. Fish are also kept as production animals and as laboratory animals. There are many wildlife species (either native or feral) which exist in either a free state or in wildlife rehabilitation facilities and which may need to be treated, managed or monitored by veterinarians. The acquisition of knowledge, skills and professional conduct with respect to the veterinary care of many of these other species does not necessarily lie within the DVM curriculum and, in some cases, may need to be acquired in post-graduate training courses. As such, these species may not be dealt with in the handbook other than in aspects of veterinary public health.

Profile of the graduating veterinarian

Although students have gone through a period of intense learning, training and instruction during their Doctor of Veterinary Medicine program, it should be recognised that they still need to develop professionally and will need ongoing training throughout their early years in practice. As such, a new graduate cannot be expected to have the knowledge, skills and professional conduct of a level displayed by a more experienced colleague.

Overall, however, a profile of the graduate veterinarian should include the following:

The veterinarian is expert, that is to say:

1) Has a broad insight into current scientific thinking and research.
2) Has mastered veterinary problem-solving and is able to form a professional judgment, to take decisions independently and to justify these decisions
3) Is able to carry out relevant veterinary activities

The veterinarian acts as a professional, that is to say:

4) Is aware of the social responsibility relating to the health and welfare of animals and aspects of public health
5) Maintains expertise and is able to deal flexibly with new developments
6) Is aware of his or her own limitations in relation to animal species or activities for which insufficient competence may have been acquired

The veterinarian is, moreover:

7) Legally competent to practise veterinary medicine independently
8) Suitably competent to commence a further course of training such as a specialization and/or a course leading to a doctorate

Technical Competencies of the Graduating Veterinarian

1) **The animal, the herd, the animal product, the enterprise, the owner or the environment**

   The veterinarian is able to:

   - Work systematically
   - Work in line with public and private law and in accordance with guidelines/protocols drawn up by the profession
   - Act responsibly with respect to animal health, animal welfare and public health
   - Act responsibly by taking measures that can reduce the risk of cross-contamination or the spread of pathogens
   - Recognize the risks of keeping animals in general, and of animal diseases in particular
   - Monitor and safeguard animal health, animal welfare and public health
   - Work with databases that are specific to the sector

   The veterinarian has knowledge and insight in relation to:

   - The main features of the historic developments in veterinary medicine

- The fundamental biological principles and mechanisms that lie at the basis of health and disease, from the molecular and cellular level, to the level of organs, the individual animal and the population
- The life cycle and environmental requirements of the different animal species
- Interactions between environment, animal health, animal welfare and public health
- The scientific basis of preventive and therapeutic interventions
- Epidemiological methods of tracing health problems
- The animal production chains

2) Analysis of the presenting problem

The veterinarian is able to:

- Form a clear picture of the presenting problem and to describe it unambiguously
- Describe data relating to the situation, such as a description of an animal, a herd or a farm profile
- Determine whether special precautions need to be taken when approaching or handling animals and/or animal products
- Form a general impression of an individual animal, a group of animals, animal products, and the surroundings in which they are held and/or processed.
- On the basis of the data provided, identify (groups of) animals and/or factors to which special attention should be paid during an investigation/examination
- Determine whether the presenting problem has a bearing on other animals, animal products and or public health
- Prioritize and interpret the situation and act accordingly and, in life-threatening situations, give immediate first aid

3) Anamnesis

The veterinarian is able to:

- Take a full anamnesis in relation to the presenting problem, the history, the environment, other animals or humans and/or to links in the production chain.
- Estimate the relevance of the any findings and use them as the basis for further investigation/examination
- Record the data from the anamnesis in a concise clear manner

4) Initial examination

The veterinarian is able to:

- Approach individual animals or a group of animals, immobilize them or have them immobilized in such a way that a general examination can be carried out in a safe manner
- Make a representative choice of the animals, animal/enterprise data and animal products to be examined

- Carry out a general examination on the animal, the animals, and/or carry out investigations into business processes and into the quality and safety of foodstuffs of animal origin, in particular on the slaughter line
- Recognize what is a normal or abnormal presentation in animals and animal products
- Consider whether environmental conditions have any influence on the findings obtained from the general examination
- State the findings and record them clearly
- Identify the relevant organ systems for further examination, and/or make a choice of foodstuffs of animal origin for further investigation
- Carry out a physical examination of the relevant organ systems
- Where relevant, carry out an investigation of foodstuffs and environment

5) Evaluation of examination findings

The veterinarian is able to:

- Interpret, evaluate, record and communicate examination findings
- Prioritize any response (triage)
- Formulate hypotheses about cause and result, resulting in a differential diagnosis
- Take action on/notify welfare abuses
- Inform the responsible authorities on suspicion of notifiable disease
- Consider whether further investigation is merited, bearing in mind animal welfare, the danger to other animals and/or humans and the burden on the environment
- Estimate the urgency of any necessary actions
- Consider whether the situation has broader implications, particularly where a food production chain may be involved
- Communicate the risk analysis in terms of a risk estimate
- Estimate the need for additional examination or intervention
- Evaluate the relevance of additional examination of and/or intervention for the subsequent decision-making process taking account of:
    - the chance of success
    - the risks for public health
    - the safety of foodstuffs of animal origin
    - the degree to which the animal's welfare is affected
    - the wishes of the person requesting the service
    - the costs and benefits to be expected
- Decide whether additional expertise is required
- Estimate whether and how an animal may be transported to another location, if necessary
- Prepare an animal for transportation
- Where required, perform euthanasia in a humane and appropriate manner
- Certify death, as required

6) Additional examination

The veterinarian is able to:

- Collect additional information about animals, animal products, business and/or surroundings
- Collect, store or and transport samples in a safe and sound manner for additional examination
- Perform or arrange for additional examination
- interpret the results of the additional examination or other information supplied
- Discuss the findings of the additional examination with the interested parties
- Interpret the results of the additional examination and record the results in a clear, concise manner

7) Evaluation of findings after additional examination

The veterinarian is able to:

- Interpret information and establish the most likely diagnosis
- Relate the results from the additional examination to other animals, the surroundings or parts of the production chain
- Revise a risk analysis
- Prioritize any necessary actions
- Consider further investigation if no diagnosis has been established
- Come to a reasoned differential diagnosis which can serve as the starting point for giving advice, treatment and guidance
- Consider whether intervention is worthwhile for the animal, the herd, the animal products, business, the owner or the surroundings

8) Prevention and/or therapy

The veterinarian is able to:

- Establish the goal of the prevention and/or therapeutic plan
- Choose the optimum preventive and/or therapeutic intervention to achieve this goal within the frameworks of the relevant legislation and regulations
- Carry out or arrange the chosen preventive or therapeutic intervention in accordance with the applicable standards of the profession
- Communicate the chances of achieving a result with the intervention
- Discuss any modifications to the prevention or therapeutic plan
- Communicate to the client any instructions relating to the proposed treatment, the possible risks and subsequent stages
- Limit as far as possible anxiety and/or unease in the animal and the client

9**) Consultation, referral, and transfer**

The veterinarian is able to:

- Consult with the correct person or organization
- Obtain information from others, and/or provide information to others for the benefit of transferring or referring a case

10) Final evaluation

The veterinarian is able to:

- To determine to what extent the presenting problem has been resolved
- As required, reconsider the diagnosis and/or modify the prevention or therapeutic plan
- Record any findings in writing and set up a plan for follow-up

11) Operational management

The veterinarian demonstrates:

- Awareness of working in, or being partly responsible for a company or other organization
- Awareness of the need for adequate management in any form of professional organization

The veterinarian is able to:

- Jointly formulate objectives for an organization
- Make a contribution to the development of a long-term policy
- Safeguard the quality of the working methods of an organization
- Evaluate the main features of the annual accounts of a company or organization
- Manage a veterinary pharmacy

The veterinarian has knowledge and insight in relation to:

- The various organizational forms of a company
- The role and responsibilities of the veterinarian as employee or employer
- The basic principles of business management and marketing
- The basic principles of starting a practice or taking over a practice

Scientific Competencies of the Graduating Veterinarian

1) Significance of scientific thinking for the actions of the veterinarian

The veterinarian demonstrates:

- A critical and analytical attitude to the scientific knowledge on which veterinary medicine is based
- An awareness of his or her own scientific knowledge and skills

The veterinarian is able to:

- Source, evaluate and communicate information that is professionally important. This includes:
    - actively reviewing relevant publications
    - selecting from the relevant literature and keeping up to date with this literature
    - reading scientific literature critically and estimating its value

- translating the results of scientific research into the practice of veterinary medicine
- citing professional literature
- translating the results of scientific research in terms of various target groups , e.g. scientific forums, clients, the lay public

- Approach veterinary problems systematically in accordance with the accepted principles of Evidence-Based Veterinary Medicine and, thereby:
  - analyse information relating to a presenting problem and , from this analysis, create a list of differential diagnoses
  - justify this list using evidence from literature
  - critically evaluate the evidence found for validity and significance
  - assess how to apply the evidence found to the presenting problem
  - apply theories about hypothesis forming, problem solving and decision-making in this process
- Identify important veterinary problems in the professional domain, suitable for setting up scientific research, and translate these into a simple research question

2) Basic Principles of Scientific Research

The veterinarian is able to:

- Under supervision, set up a study of a limited size, carry out research and generate, interpret and/or evaluate the results and report on them in writing and orally

The veterinarian has knowledge and insight in relation to:

- The general principles of hypothesis formation, research methodologies and thoughts about forms of scientific research that are relevant to veterinary medicine
- The principles of scientific methodology, biostatistics and epidemiology
- The process that leads to the publication of scientific data

Personal Competencies of the Graduating Veterinarian

1) Aspects that apply generally

The veterinarian demonstrates:

- Reliability, by keeping to agreements, working accurately and punctually, dealing with information obtained in a confidential manner and refraining from making commitments that cannot be kept

The veterinarian is able to:

- Communicate clearly verbally and non-verbally and is able to use different forms and methods of communication

- Identify a any feelings of dissatisfaction within a professional relationship and respond appropriately, taking into account the boundaries of his or her own knowledge, skills and decency

2) The relationship of the veterinarian with humans and animals

The veterinarian demonstrates:

- A respectful attitude to humans and animals, taking account of the emotions, norms and values of others, and uses generally acceptable manners
- Professional concern for the animal and the client
- An ability to cope with emotions, norms and values in relation to concerns about life, health, illness and death
- An awareness of the (sometimes conflicting) balance between the wishes of the owner and the welfare of the animal
- A respectful attitude to laboratory animals
- A respectful attitude to people who are involved with animals by listening to their views and using generally acceptable manners

3) Functioning in respect of veterinary activities

The veterinarian demonstrates:

- Openness towards new developments
- Willingness to keep his own expertise up to date or to expand it
- Willingness to actively seek possibilities for personal and professional improvement
- Willingness to set new goals
- Willingness to use problems, dilemmas and setbacks constructively to enhance professional development
- Awareness of the responsibility of the veterinarian
- Willingness to promote the health and welfare of the animal and the quality and safety of foodstuffs of animal origin
- Willingness to monitor and promote public health and veterinary environmental health

The veterinarian is able to:

- Cope with acute or rapidly changing situations
- Cope with emotions, norms and values in relation to concerns about life, death, disease and health, and to deal with veterinary ethical questions
- Balance the wishes of the owner and the welfare of the animal
- Act with professional integrity

4) Functioning in respect of professional working relationships

The veterinarian is able to:

- Function co-operatively, as evidenced by:
    - working constructively as part of a team
    - acting in a helpful and cooperative manner

        - contributing in an adequate manner to the working relationship of the team
        - taking on various roles within the team, taking into account the limits of personal knowledge and skills
    - Work systematically, as evidenced by:
        - the organization of work activities
        - a structured, quality-conscious, purposeful and efficient way of working
        - the completion of work within a set time
    - Solicit feedback, both positive and negative, and incorporate this feedback into future actions
    - Based on personal knowledge, skills and responsibilities, delegate tasks to other staff members in appropriate fashion
    - Deal with conflict

5) Functioning in respect of personal characteristics

The veterinarian is able to:

- Act confidently, as evidenced by:
    - the expression and coordination of thoughts, feelings and behavior
    - the ability to deal with stress
    - an ability to cope with compromise between the ideal and the practical solution to a presenting problem
    - awareness of one's own capacities and limitations; accepting the limitations of one's own expertise and of existing prejudices; recognizing one's own limitations and those of the veterinary profession as a whole
    - logical, firm and honest actions
- Deal with unexpected setbacks using appropriate critical self-reflection
- Analyse his or her own performance and behaviour, as well as that of the profession as a whole
- Handle criticism
- Make difficult decisions (including the decision not to treat), taking account of the personal circumstances and wishes of the client

6) The balance between work and private life

The veterinarian demonstrates:

- An appreciation of the importance of work-life balance

The veterinarian is able to:

- Take appropriate measures to reduce personal stress, including seeking professional help if necessary

Social Competencies of the Graduating Veterinarian

1) **The social responsibilities of the veterinarian in relation to animal health, animal welfare, public health and food safety**

   The veterinarian demonstrates:

   - An understanding and tolerance of differing moral outlooks and a respect for other opinions
   - High ethical standards
   - An insight and understanding of the social context and function of animals in society
   - An understanding of the importance of animal welfare in society
   - An awareness of the potential conflict between the demands and needs of a large-scale production-animal enterprise and the rights of the animal
   - An understanding of the importance of veterinary medicine in relation to the tracing and recognition of zoonoses
     A critical and analytical attitude with regard to the use of laboratory animals for the benefit of scientific research and an awareness of the possible alternatives to animal experiments
   - The awareness of the need to set up any veterinary scientific study in an ethically and a socially responsible manner
   - An awareness of the social significance of regular and non-regular veterinary interventions
   - A n environmental awareness and a responsible attitude towards the conservation of our flora and fauna

   The veterinarian is able to:

   - Act in a manner which balances ethical aspects relevant to veterinary decisions
   - Justify personal moral standpoints to owners, colleagues and other people
   - In times of outbreaks of infectious or notifiable diseases, explain any measures taken by the government and make professional/expert comments on them
   - Inform/advise organizations in society about keeping animals in a responsible manner

   The veterinarian has knowledge and insight in relation to:

   - The central role of the veterinarian in the animal health care system and the watchdog function which that entails
   - Restrictions on the use of illegal substances in sport and production
   - Factors relating to developments in animal health care, such as scale, costs and financing
   - The link between the environment and food production, including waste management
   - The interests of consumers and animal owners or producers

- Information and communication technology in relation to public health from the veterinary prospective

2) **Legal and judicial aspects of keeping animals and of practising veterinary medicine**
   The veterinarian demonstrates:
   - Awareness of the mutual links between national and international legislation and regulations in relation to animals and animal products

   The veterinarian is able to:

   - Be adequately informed and to deal with public and private legal regulations in respect to the keeping of animals
   - Deal with any potential conflicts between professional integrity and legislation/regulations

   The veterinarian has knowledge and insight in relation to:

   - Foundations and principles of national and international legislation and regulations relating to animals or animal products
   - The legislation and regulations relating to the veterinarian/animal/owner relationship
   - The legally established competencies of para- veterinary staff
   - The other legal and judicial aspects that are inherent to the practice of veterinary medicine
   - Guidelines regarding responsible care for, and protection of, the animal

3) **Organizations concerned with the keeping of animals**
   The veterinarian has knowledge and insight in relation to:
   - The place, function, social embedding, interests of, and links between organizations involved in keeping animals, in the production of foodstuffs of animal origin and in public health
   - The manner in which an enterprise is organized nationally and internationally

Presenting problems the veterinarian may have to deal with

1) **Explanation**

This chapter contains a list of the problems that a graduate veterinarian may have to deal with. The list can be regarded as a more detailed specification of the previous chapters and, in particular, of the technical requirements of the graduating veterinarian. By the time of graduation, the student should be able, in principle, to deal with all the problems listed here. In other words, this student should be able to draw up a plan of action in response. It does not, however, mean that a graduate veterinarian will be expected to completely solve all the problems listed. Sometimes the best approach or solution is to call in assistance as soon as possible, or to refer to a colleague with more specific expertise.

2) **Problems relating to:**

General	Pig	Ruminants	Poultry	Horse	Dog	Cat	Rodents, rabbits, etc	Bird	Wildlife /Exotics
Behavioural advice	●	●	●	●	●	●	●	●	●
Aggressive, anxious or changed behaviour	●	●	●	●	●	●	●	●	●
Preventive health/vaccinations/parasite control	●	●	●	●	●	●	●	●	●
Insufficient growth/production/performance	●	●	●	●	●	●	●	●	
Reduced milk production	●	●		●	●	●			
Change in water intake	●	●	●	●	●	●	●	●	●
Change in appetite	●	●	●	●	●	●	●	●	●
Sluggishness/inactivity/general malaise	●	●	●	●	●	●	●	●	●
Changes in exercise tolerance				●	●	●	●	●	●
Fever	●	●		●	●	●	●		●
Non specific pain	●	●	●	●	●	●	●	●	●
Blood loss	●	●	●	●	●	●	●	●	●
Trembling/shaking	●	●	●	●	●	●	●	●	●
Request for euthanasia	●	●	●	●	●	●	●	●	●
Acute onset of death	●	●	●	●	●	●	●	●	●
Serious disease/infection	●	●	●	●	●	●	●	●	●
Suspected poisoning	●	●	●	●	●	●	●	●	●
Pre-purchase or insurance examination	●	●	●	●	●	●	●	●	
Hereditary disease testing	●	●	●	●	●	●	●	●	
Hereditary/congenital defects	●	●	●	●	●	●	●	●	●

Respiration	Pig	Ruminants	Poultry	Horse	Dog	Cat	Rodents, rabbits, etc	Bird	Wildlife /Exotics/Fish
Nasal discharge	●	●	●	●	●	●	●	●	●
Nasal bleeding	●	●	●	●	●	●	●	●	●
Abnormalities of the external nose	●	●		●	●	●	●		●
Nasal congestion		●		●	●	●	●	●	●
Coughing	●	●	●	●	●	●	●	●	●
Coughing up mucus or blood		●	●	●	●	●	●	●	●
Sneezing	●	●	●	●	●	●	●	●	●
Wheezing and other respiratory noises	●	●	●	●	●	●	●	●	●
Altered respiration	●	●	●	●	●	●	●	●	●

Nutrition and digestion	Pig	Ruminants	Poultry	Horse	Dog	Cat	Rodents, rabbits, etc	Bird	Wildlife /Exotics/Fish
Nutrition of the young/growing animal	●	●	●	●	●	●	●	●	●
Nutrition of the adult animal	●	●	●	●	●	●	●	●	●
Nutrition of the pregnant animal	●	●		●	●	●	●		●
Nutrition of the highly productive animal	●	●	●	●	●				
Nutrition of the older animal	●	●	●	●	●	●	●	●	●
Inappropriate ingestion	●	●	●	●	●	●	●	●	●
Weight loss	●	●	●	●	●	●	●	●	●
Obesity/weight gain	●	●	●	●	●	●	●	●	●
Lock jaw		●		●	●	●	●		
Open beak/mouth	●	●	●	●	●	●	●	●	●
Abnormalities of the lip/tongue/mouth		●		●	●	●	●		●
Excessive salivation	●	●		●	●	●	●		●
Bad breath		●		●	●	●	●		●
Mouth or throat injuries	●	●	●	●	●	●	●	●	●
Swelling to the jaw, throat, neck, or other parts of head	●	●	●	●	●	●	●	●	●
Dental trauma	●	●		●	●	●	●		●
Gingivitis	●	●		●	●	●	●		●
Abnormal dentition		●		●	●	●	●		●
Problems with swallowing	●	●		●	●	●	●	●	●
Regurgitation/vomiting	●	●		●	●	●	●	●	●
Hiccups				●	●	●			
Abdominal bloating	●	●		●	●	●	●	●	●
Abdominal pain	●	●		●	●	●	●		●
Umbilical swelling	●	●		●	●	●	●		●

Peri-anal swelling, inflammation or trauma	●	●	●	●	●	●	●	●	●
Straining to defecate	●	●	●	●	●	●	●	●	●
Constipation	●	●	●	●	●	●	●	●	●
Acute diarrhoea	●	●	●	●	●	●	●	●	●
Chronic diarrhoea	●	●	●	●	●	●	●	●	●
Abnormal stool	●	●	●	●	●	●	●	●	●
Painful defecation	●	●	●	●	●	●	●	●	●
Faecal incontinence				●	●	●			
Blood loss from rectum/cloaca	●	●		●	●	●	●	●	●
Flatulence				●	●	●	●		

Reproduction and care of the young animal	Pig	Ruminants	Poultry	Horse	Dog	Cat	Rodents, rabbits, etc	Bird	Wildlife /Exotics/Fish
Breeding advice	●	●	●	●	●	●	●	●	●
Abnormality of external genitalia	●	●		●	●	●	●		●
Reduced fertility or infertility	●	●	●	●	●	●	●	●	●
Irregular seasons	●	●		●	●	●	●		●
Estrus synchronisation	●	●		●	●	●	●		
Contraception or sterilisation	●	●		●	●	●	●	●	●
Embryo transfer	●	●		●	●	●			
Pregnancy diagnosis	●	●		●	●	●	●		●
Unwanted pregnancy	●	●		●	●	●	●		●
Abortion/prematurity/dysmaturity	●	●		●	●	●	●		●
Parturitiion	●	●		●	●	●	●		●
Fetal death		●			●	●			●
Extended gestation/egg binding	●	●		●	●	●	●	●	●
Retained placenta	●	●		●	●	●	●		●
Peri-parturient haemorrhage	●	●		●	●	●	●		●
Vaginal/uterine/bladder prolapse	●	●		●	●	●	●	●	●
Abnormal vaginal discharge	●	●		●	●	●	●		●
Weak neonate	●	●	●	●	●	●	●	●	●
Abnormal neonatal appearance	●	●	●	●	●	●	●	●	●
Determination of sex	●	●	●	●	●	●	●	●	●
Abnormal birth weight	●	●		●	●	●	●	●	●
Unwillingness to eat/drink in the neonate	●	●	●	●	●	●	●	●	●
Abnormal motor development in the neonate	●	●	●	●	●	●	●	●	●
Poorly developing neonate	●	●	●	●	●	●	●	●	●
Scrotal swelling	●	●		●	●	●	●		●
Abnormal or absent testes	●	●		●	●	●	●		●
Abnormal penile positioning/exposure	●	●		●	●				●
Mating inability	●	●		●	●	●	●		●
Genital trauma	●	●		●	●	●	●		●

Urinary tract	Pig	Ruminants	Poultry	Horse	Dog	Cat	Rodents, rabbits, etc	Bird	Wildlife /Exotics/Fish
Impeded/absent urination	●	●		●	●	●	●		●
Excessive/frequent urination		●		●	●	●	●	●	●
Urinary incontinence		●		●	●	●	●		●
Abnormal urine	●	●		●	●	●	●		●
Urethral discharge in the male animal	●	●		●	●	●	●		●

Skin	Pig	Ruminants	Poultry	Horse	Dog	Cat	Rodents, rabbits, etc	Bird	Wildlife /Exotics/Fish
Changed appearance of skin/adnexa	●	●	●	●	●	●	●	●	●
Colour changes in mucosa/skin	●	●	●	●	●	●	●	●	●
Discrete skin swelling or lumps	●	●	●	●	●	●	●	●	●
Pruritus	●	●	●	●	●	●	●	●	●
Pain or bruising	●	●		●	●	●	●		●
Insect bites	●	●	●	●	●	●	●	●	●
Burns	●	●	●	●	●	●	●	●	●
Sore/itchy ear	●	●		●	●	●	●		●
Discharge from ear	●	●		●	●	●	●	●	●
Abnormality of, or trauma to, pinnae	●	●		●	●	●	●		●
Skin wounds	●	●	●	●	●	●	●	●	●
Warts or polyps		●		●	●	●	●	●	●
Hair/feather loss	●	●	●	●	●	●	●	●	●
Hotspot/abrasion/hair pulling/feather plucking	●	●	●	●	●	●	●	●	●
Nail/hoof/sole/claw abnormalities	●	●	●	●	●	●	●	●	●
Abnormal digits		●			●	●			●
Trauma/deformities of the horns/beak		●	●					●	●
Haemorrhage after de-horning		●							

Mammary glands	Pig	Ruminants	Poultry	Horse	Dog	Cat	Rodents, rabbits, etc	Bird	Wildlife /Exotics/Fish
Mastitis (clinical or subclinical)	●	●		●	●	●	●		●

Abnormal or changed size/contour/symmetry of mammae	●	●		●	●	●	●		●
Eczema on the udder/mammary gland skin	●	●		●	●	●			●
Trauma to udder/mammary glands and/or trauma to teats	●	●		●	●	●			●

Eyes	Pig	Ruminants	Poultry	Horse	Dog	Cat	Rodents, rabbits, etc	Bird	Wildlife /Exotics/Fish
Painful or itchy eye	●	●	●	●	●	●	●	●	●
Red eye/inflamed eye/conjunctivitis	●	●	●	●	●	●	●	●	●
Increased tear production	●	●	●	●	●	●	●	●	●
Changed form/appearance of the eye, eyelids or surroundings	●	●	●	●	●	●	●	●	●
Abnormal eye movements	●	●	●	●	●	●	●	●	●
Cross eyed					●	●			●
Cloudy eye	●	●	●	●	●	●	●	●	●
Bulging eye/luxation of the eye		●		●	●	●	●	●	●
Sunken/deep-set eyes	●	●		●	●	●	●		●
Injuries to/around the eye	●	●	●	●	●	●	●	●	●
Poor vision/blindness	●	●		●	●	●	●	●	●

Nervous system and locomotion	Pig	Ruminants	Poultry	Horse	Dog	Cat	Rodents, rabbits, etc	Bird	Wildlife /Exotics/Fish
Head tilt	●	●	●	●	●	●	●	●	●
Facial change/reduced facial movement	●	●		●	●	●	●		●
Deafness				●	●	●			●
Loss of consciousness/fainting	●	●	●	●	●	●	●	●	●
Convulsions/seizure/stroke/involuntary movements	●	●	●	●	●	●	●	●	●
Loss of balance or coordination	●	●	●	●	●	●	●	●	●
Loss/reduction in power		●		●	●	●	●		●
Paralysis/paresis	●	●	●	●	●	●	●	●	●
Inability to stand	●	●	●	●	●	●	●	●	●
Abnormal stance	●	●	●	●	●	●	●	●	●
Painful/stiff neck		●		●	●	●	●		●
Back pain	●	●		●	●	●	●	●	●
Abnormal shape/position of tail		●		●	●	●	●		●
Flaccid/paralysed tail	●	●		●	●	●			●
Trauma/inflammation of the tail	●	●		●	●	●	●		●
Request for tail amputation	●	●		●	●	●			
Swollen paws/legs	●	●	●	●	●	●	●	●	●
Lameness	●	●	●	●	●	●	●	●	●
Trauma to limbs/bones	●	●	●	●	●	●	●	●	●

Painful/stiff/swollen joints	●	●	●	●	●	●	●	●	●
Abnormal appearance of bones/joints	●	●	●	●	●	●	●	●	●
Muscle atrophy	●	●		●	●	●	●	●	●
Muscle pain/swelling	●	●		●	●	●			●
Muscle cramps/tremors	●	●	●	●	●	●	●	●	●
Prevention of claw/hoofproblems	●	●		●					●

Legal/ethical	Pig	Ruminants	Poultry	Horse	Dog	Cat	Rodents, rabbits, etc	Bird	Wildlife /Exotics/Fish
Use of veterinary drugs	●	●	●	●	●	●	●	●	●
Storage of veterinary drugs	●	●	●	●	●	●	●	●	●
Request for information about treatment plan and prognosis	●	●	●	●	●	●	●	●	●
Farm treatment plan	●	●	●	●	●	●	●	●	●
Queries regarding drug side effects	●	●	●	●	●	●	●	●	●
Treatment complications	●	●	●	●	●	●	●	●	●
Non-compliance	●	●	●	●	●	●	●	●	●
Misuse of drugs	●	●	●	●	●	●	●	●	●
Indications/suspicion of maltreatment/neglect	●	●	●	●	●	●	●	●	●
Aesthetic appearance issues				●	●	●	●	●	
Requests for unwarranted elective procedures	●	●	●	●	●	●			
Laws and regulations related to veterinary medicine	●	●	●	●	●	●	●	●	●
Medical/professional malpractice	●	●	●	●	●	●	●	●	●
Cost-benefit calculation of treatment/advice	●	●	●	●	●	●	●	●	●
Alternate therapies				●	●	●	●		●
Animal rehabilitation		●		●	●	●	●	●	●

Veterinary public health	Pig	Ruminants	Poultry	Horse	Dog	Cat	Rodents, rabbits, etc	Bird	Wildlife /Exotics/Fish
Zoonotic disease	●	●	●	●	●	●	●	●	●
Housing systems and care for animals	●	●	●	●	●	●	●	●	●
Hygiene measures at farm level	●	●	●	●	●	●	●	●	●
Risk assessment of the immediate vicinity	●	●	●	●	●	●	●	●	●
Management of animal health, animal welfare and public health	●	●	●	●	●	●	●	●	●
Analysis of animal health, animal welfare and public health	●	●	●	●	●	●	●	●	●
Software management systems for animal health, animal welfare	●	●	●	●			●		●

The economics of animal health, animal welfare and public health	●	●	●	●	●	●	●	●	●
Quality assurance for animal health, welfare and public health	●	●	●	●	●	●	●	●	●
Effects of animals on environment and public health	●	●	●	●	●	●	●	●	●
Export and import of animals	●	●	●	●	●	●	●	●	●
Food safety	●	●	●	●			●		●
Milk quality/safety		●		●					
Egg quality/safety			●						
Meat quality/safety	●	●	●	●			●		
Water quality/safety in relation to animal health and welfare	●	●	●	●			●	●	●
Cleaning and disinfection	●	●	●	●	●	●	●	●	●
Slaughter of animals	●	●	●	●			●		●
Decision-making for animal slaughter	●	●	●	●			●		●
Slaughter technology	●	●	●	●			●		●
Waste products and manure	●	●	●	●	●	●	●		●
Effects of byproducts and waste flows	●	●	●						●
Growth enhancers	●	●	●	●			●		
Product knowledge of foodstuffs of animal origin	●	●	●	●					
Processing of foodstuffs of animal origin	●	●	●	●			●		

Veterinarian-owner relationship and communication	Pig	Ruminants	Poultry	Horse	Dog	Cat	Rodents, rabbits, etc	Bird	Wildlife /Exotics/Fish
Alternative treatment options	●	●	●	●	●	●	●	●	●
Awareness of the role of the animal in human health	●	●	●	●	●	●	●	●	●
Breakdown in client-veterinarian relationship	●	●	●	●	●	●	●	●	●
Abnormal/unexpected client behaviour	●	●	●	●	●	●	●	●	●
Costs/invoices/estimates relating to veterinary care	●	●	●	●	●	●	●	●	●
Financial considerations of the client	●	●	●	●	●	●	●	●	●

Royal College of Veterinary Surgeons 'Essential Competences Required of the Veterinary Surgeon'

Introduction

The ten guiding principles of the 'RCVS Guide to Professional Conduct' should be seen as overarching requirements for the veterinarian. The Guide states that:

Your clients are entitled to expect that you will: -

1. Make animal welfare your first consideration in seeking to provide the most appropriate attention for animals committed to your care
2. Ensure that all animals under your care are treated humanely and with respect
3. Maintain and continue to develop your professional knowledge and skills
4. Foster and maintain a good relationship with your clients, earning their trust, respecting their views and protecting client confidentiality
5. Uphold the good reputation of the veterinary profession
6. Ensure the integrity of veterinary certification
7. Foster and endeavour to maintain good relationships with your professional colleagues
8. Understand and comply with your legal obligations in relation to the prescription, safe-keeping and supply of veterinary medicinal products
9. Familiarise yourself with and observe the relevant legislation in relation to veterinary surgeons as individual members of the profession, employers, employees and business owners
10. Respond promptly, fully and courteously to complaints and criticism.

The essential competences, themselves, have been broken down into three main areas, and these are reflected in both the "day one" and the "year one" requirements. They are:

- **A General professional competences and attributes**
  describing the distinguishing characteristics of a veterinary surgeon
- **B Underpinning knowledge and understanding**
  describing, in general terms, the breadth of knowledge and understanding needed for a career as a veterinary surgeon, and for subsequent professional development in whatever sphere of veterinary science the individual wishes to pursue
- **C Practically-based veterinary competences**
  describing the basic practical competences that are expected a) at the point of graduation, and b) following an extended period of further professional training in practice.

Part 1
Essential Competences Required Of The New Veterinary Graduate
"Day One Skills"
A1 - General professional skills and attributes
The new veterinary graduate should be able to:

A1.1 Communicate effectively with clients, the lay public, professional colleagues and responsible authorities; listen effectively and respond sympathetically to clients and others, using language in a form appropriate to the audience and the context

A1.2 Prepare clear case reports and maintain patient records in a form satisfactory to colleagues and understandable by the public

A1.3 Work effectively as a member of a multi-disciplinary team in the delivery of services to clients

A1.4 Be aware of the ethical responsibilities of the veterinary surgeon in relation to individual patient care and client relations, and also more generally in the community in relation to their possible impact on the environment and society as a whole

A1.5 Be aware of the economic and emotional climate in which the veterinary surgeon operates, and respond appropriately to the influence of such pressures

A1.6 Be willing to use one's professional capabilities to contribute as far as possible to the advancement of veterinary knowledge in order to benefit veterinary practice and further improve the quality of animal care and public health

A1.7 Have an elementary knowledge of the organisation and management of a veterinary practice, including:

- awareness of own and employer's responsibilities in relation to employment and health and safety legislation, and the position relating to lay staff and public liability
- awareness of how fees are calculated and invoices drawn up, and the importance of following the practice's systems for record keeping and book-keeping, including computer records and case reports
- ability to use information technology effectively to communicate, share, collect, manipulate and analyse information
- importance of complying with professional standards and policies of the practice

A1.8 Understand the need and professional obligation for a commitment to continuing education and training, and professional development, throughout one's professional life

A1.9 Conduct oneself in a professional manner with regard to the veterinary surgeon's professional and legal responsibilities and understand and apply the ethical codes as set out in the RCVS Guide to Professional Conduct

A1.10 Be able to cope with uncertainty and adapt to change

A1.11 Develop a capacity for self-audit and willingness to participate in the peer-review process

A1.12 Be aware of personal limitations, and demonstrate awareness of when and from where to seek professional advice, assistance and support. ***(Commentary: This last item is considered to be one of the most important, and should guide all new veterinary graduates when undertaking their professional duties. Veterinary surgeons undertaking procedures on patients must at all stages in their careers be fully competent in their performance, or be under the close supervision of those so competent. When in doubt, the new veterinary graduate must seek professional support and in the interests of animal and human health, should not attempt to undertake complex procedures unsupervised.)***

B1 - Underpinning Knowledge And Understanding

The new veterinary graduate will need to have acquired a thorough knowledge and understanding of the following:

B1.1 The sciences on which the activities of veterinary surgeons are based

B1.2 Research methods and the contribution of basic and applied research to all aspects of veterinary science

B1.3 How to evaluate evidence

B1.4 The structure and functions of healthy animals, and all aspects of their husbandry

B1.5 The aetiology, pathogenesis, clinical signs, diagnosis and treatment of the common diseases and disorders that occur in the commonly encountered domestic species.

B1.6 Legislation relating to the welfare (including transport) of animals and notifiable diseases

B1.7 Medicines legislation and guidelines on responsible use of medicines

B1.8 The principles of disease prevention and the promotion of health and welfare

B1.9 Veterinary public health issues including zoonoses

C1 - Practical Competences

The new veterinary graduate should be able to undertake the following:

C1.1 Obtain an accurate and relevant history of the individual animal or animal group, and its/their environment

C1.2 Handle and restrain an animal safely and humanely, and instruct others in performing these techniques

C1.3 Perform a complete clinical examination

C1.4 Attend all species in an emergency and perform basic first aid *(Commentary: problems to be handled for any species include first aid management of haemorrhage, wounds, breathing difficulties, eye & ear injuries, unconsciousness, clinical deterioration, burns, tissue damage, internal organ damage and cardiac arrest. First aid to be applied includes bandaging, cleaning, immobilising limbs, resuscitation procedures, haemorrhage control.)*

C1.5 Assess correctly the nutritional status of an animal and be able to advise the client on principles of husbandry and feeding *(Commentary: this applies to commonly presented cases and would not, for example, be expected to include advanced nutritional advice for complex cases, eg. high performance horses, high yielding diary cows, certain exotic or zoological species.)*

C1.6 Collect, preserve and transport samples, perform standard laboratory tests, and interpret the results of those generated in-house, as well as those generated by other laboratories. *(Commentary: new graduates are expected to have a working knowledge of tests to be undertaken include conditions relating to infectious & contagious diseases; alimentary system; respiratory system; circulatory system; urinary system; nervous system; endocrine system; mucucutaneous system; musculoskeletal system; trauma; poisoning; obstetrics; paediatrics; parturition; reproduction)*

C1.7 Use radiographic, ultrasonic, and other technical equipment which can be used as a diagnostic aid, safely and in accordance with current regulations

C1.8 Follow correct procedures after diagnosing notifiable, reportable and zoonotic diseases

C1.9 Know and apply the RCVS twelve Principles of Certification correctly

C1.10 Access the appropriate sources of data on licensed medicines; prescribe and dispense medicines correctly and responsibly in accordance with relevant legislation, and ensure that medicines and waste are safely stored and/or disposed of

C1.11 Correctly apply principles of sterilisation of surgical equipment

C1.12 Correctly apply principles of aseptic surgery

C1.13 Safely perform sedation, general and regional anaesthesia, implement chemical methods of restraint, and assess and control pain

C1.14 Advise on, and administer appropriate treatment *(Commentary: the new veterinary surgeon must always seek professional advice and support if presented with a case beyond his or her immediate capability – see item A.12)*

C1.15 Recognise when euthanasia is necessary and perform it humanely, using an appropriate method, whilst showing sensitivity to the feelings of owners and others, and with due regard to the safety of those present; advise on disposal of the carcase

C1.16 Perform a basic gross post mortem examination, record details, sample tissues, store and transport them

C1.17 Perform ante mortem inspection of animals destined for the food chain and correctly identify conditions affecting the quality and safety of products of animal origin

C1.18 Assess and implement basic health and welfare records (and production records where appropriate)

C1.19 Advise on, and carry out preventive and prophylactic programmes appropriate to the species and commensurate with accepted animal health, welfare and public health standards, seeking advice and assistance where necessary from professional colleagues

C1.20 Minimise the risks of contamination, cross infection and accumulation of pathogens in the veterinary premises and in the field

Personal Health & Safety

Throughout the DVM program, students should be aware of a number of factors potentially affecting their personal health and safety. It is suggested that each student become familiar with appropriate vaccination regimes for diseases such as 'Q' fever and tetanus. In the case of the Veterinary Public Health abattoir visits in final year, it may be a condition of entry that students provide proof of current vaccination status against 'Q' fever and it is the responsibility of the student to meet any such conditions.

Similarly, any student planning to travel overseas for EMS placements must take responsibility for meeting the health and vaccination requirements of the planned location and individual organisation. Amongst others, rabies is a very real threat to any animal-handling personnel throughout North America, South East Asia and parts of Europe, and Bat Lyssa virus might be a risk when handling bats in Australia. Vaccination against diseases such as Yellow Fever and Hepatitis 'A' may be a requirement to enter some countries in Africa and/or South America.

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