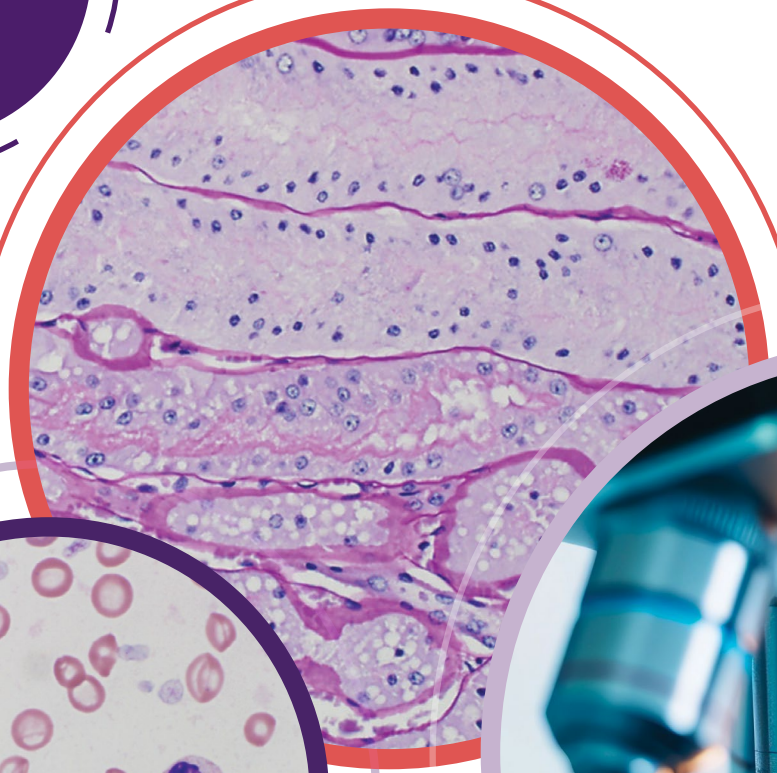
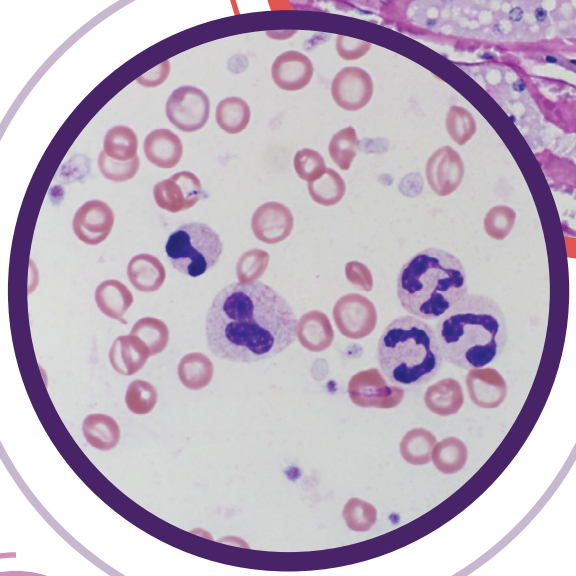
ACVP
AMERICAN COLLEGE OF VETERINARY PATHOLOGISTS

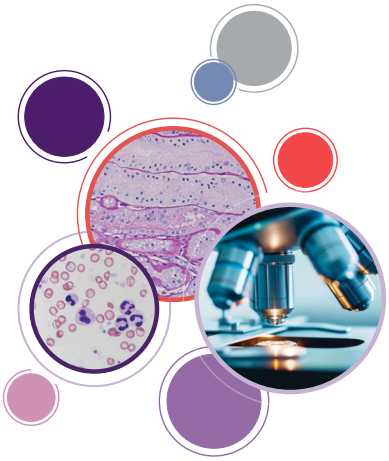
Competency-Based Veterinary Education

Pathology

Framework for Supporting ACVP Resident Training







Competency-Based Veterinary Education *Pathology* Framework for Supporting ACVP Resident Training

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Table of Contents

Introduction

Key definitions 4

Decoding and using the framework 4

Domain 1. Pathology Practice 5

Domain 2. Quality, Compliance, & Safety 6

Domain 3. Communication 7

Domain 4. Collaboration 8

Domain 5. Professionalism & Professional Identity 9

Domain 6. Scholarship 10

Introduction

In this document, ACVP builds upon the foundation laid by the American Association of Veterinary Medical Colleges (AAVMC) *Competency-Based Veterinary Education: CBVE 2.0*. "Veterinary programs across the world," are encouraged by the AAVMC Council on Outcomes-based Veterinary Education "to recognize the value of the AAVMC CBVE Model in transforming veterinary education."[1]

ACVP has deliberately aligned these key definitions and instructions for use with those in *CBVE 2.0* because of the Council's emphasis that the "use of shared terminology and consistent application of the components of the model" provides "an opportunity to advance veterinary education and to promote new graduate success in the veterinary profession."[1]

Key Definitions

Competency Framework

"An organized and structured representation of a set of interrelated and purposeful" competencies.[2]

Domains of Competence (Domains)

"Broad distinguishable areas of competence that in the aggregate constitute a general descriptive framework for a profession."[2]

Competency

"An observable ability of a health professional related to a specific activity that integrates knowledge, skills, values, and attitudes. Because competencies are observable, they can be measured and assessed to ensure their acquisition."[2]

Subcompetency

More clearly defines each competency, more granular than a competency, may be used to develop course or rotation objectives and assessments, and represents examples of content that may be modified or refined by individual schools to highlight local context.

1. Chaney KP, Hodgson JL, Banse HE, Danielson JA, Gates MC, Ilkiw JE, Matthew SM, Read EK, Salisbury SK, Taylor RM, Frost JS. The importance of adhering to terminology when implementing competency-based veterinary education (CBVE). Journal of Veterinary Medical Education. 2024;51(2):151-154. doi:10.3138/jvme-2023-0022.
2. AAVMC Council on Outcomes-based Veterinary Education, Chaney KP, Hodgson JL, Banse HE, Danielson JA, Foreman JH, Kedrowicz AA, Meekins JM, Read EK, Salisbury SK, Taylor RM, Frost JS. *Competency-Based Veterinary Education: CBVE 2.0*. American Association of Veterinary Medical Colleges; 2024.

Decoding and Using the Framework

This competency framework is intended to be used to direct both training activities and assessments such that all residency programs provide support for the development of a set of core competencies in pathology for day one practice.

This set of core competencies comprises the domains of competence and competencies. The subcompetencies are suggestions for illustrative purposes only. Adoption of suggested subcompetencies may be appropriate depending upon each program. Programs are encouraged to develop their own subcompetencies to best capture their programs' strengths and unique attributes.

"To identify domains, competencies, and subcompetencies, the following numbering system is used:

- First number indicates the domain.
- Second number identifies the specific competency within that domain.
- Last number is the specific subcompetency for that competency.

Example: 1.1.1 refers to Domain 1, Competency 1, Subcompetency 1.

When subcompetencies are not used, there will only be two numbers, representing the domain and competency.

Example: 5.3 refers to Domain 5, Competency 3"[2]

DOMAIN 1

Pathology Practice

The pathologist integrates knowledge of the cellular, molecular, tissue, and organ-level basis of pathology; clinical and epidemiological aspects of comparative animal disease; and the methodological basis of laboratory testing into the practice of pathology.

COMPETENCIES		SUBCOMPETENCIES
1.1	**Applies knowledge of general pathology and fundamental mechanisms of disease in animals to pathologic evaluation.**	1. Explains relationship between mechanisms of disease to manifestation of disease (e.g., lesions, clinical signs, clinicopathologic changes). 2. Correlates foundational knowledge with diagnostic tools (e.g., selection of IHC marker).
1.2	**Performs pathology procedures.**	1. Demonstrates routine microscopy skills (e.g., light or digital microscopy). 2. Anatomic pathology: Performs the routine technical procedures within anatomical pathology (e.g., performs a necropsy on multiple species, prepares biopsy specimens, collects specimens for ancillary diagnostic tests). 3. Clinical pathology: Performs the routine technical procedures within clinical pathology (e.g., prepares blood and cytologic smears, performs urinalysis).
1.3	**Gathers, synthesizes, and prioritizes data to arrive at a pathologic interpretation.**	1. Identifies relevant case details and history. 2. Identifies, describes, and interprets macroscopic findings (e.g., gross evaluation of tissues and fluids). 3. Identifies, describes, and interprets microscopic findings (e.g., histopathology and cytology). 4. Describes methodology and underlying principles of routine diagnostic testing. 5. Differentiates pathologic and nonpathologic findings.
1.4	**Creates, recommends, justifies, and adjusts a diagnostic plan based on available evidence.**	1. Appraises available clinical information and pathologic findings and acts accordingly despite uncertainty. 2. Justifies appropriate ancillary testing within a diagnostic plan. 3. Evaluates additional data in a timely manner to refine interpretation and/or adjust diagnostic plan. 4. Uses critical thinking to determine appropriate action when unexpected results occur.
1.5	**Prioritizes situational urgency and allocates resources.**	1. Responds to STAT requests to direct action and workflow. 2. Uses clinical judgment to promptly address most urgent cases.
1.6	**Adapts knowledge to varied scenarios and contexts.**	1. Describes well-recognized animal models of human disease and translational relevance of animal disease. 2. Compares similarities and differences between different domestic and nondomestic species to include anatomy and disease incidence and manifestation.
1.7	**Recognizes limitations of knowledge, skills, and resources and seeks consultation as needed.**	1. Identifies cases in which additional opinions are warranted.

Competencies 1.1-1.4 are informed by Competency-Based Veterinary Education: CBVE 2.0 *Domains 1 (Clinical Reasoning and Decision-Making) and 2 (Individual Animal Care and Management). Competencies 1.5-1.7 are adopted as written in* Competency-Based Veterinary Education: CBVE 2.0 *Domain 1 (Clinical Reasoning and Decision-Making).*

DOMAIN 2

Quality, Compliance, & Safety

The pathologist employs established and developing principles of quality laboratory management, complies with legal and regulatory requirements, and ensures the safety of the workplace and stakeholders.

COMPETENCIES		SUBCOMPETENCIES
2.1	**Delivers veterinary pathology services compliant with legal and regulatory requirements.**	1. Identifies and acts in accordance with applicable codes of professional practice, veterinary practice acts, licensing board regulations, workplace protocols, and accreditation processes (e.g., reportable diseases, waste disposal). 2. Selects diagnostic tests in accordance with regulatory and legal requirements.
2.2	**Advocates for the health and safety of all personnel within the workplace and stakeholders.**	1. Complies with workplace health and safety regulations (e.g., compliance with health and safety regulations, handling and disposal of biologic and/or hazardous materials, and disease testing and reporting). 2. Applies and makes recommendations for safe practices for handling biologic and/or hazardous materials (e.g., formalin, blood or fluid specimens, carcasses or tissues).
2.3	**Applies the principles of laboratory quality management to recognize and mitigate errors in laboratory testing and interpretation.**	1. Educates stakeholders on best practices of specimen collection and submission to mitigate errors in laboratory testing and interpretation. 2. Clinical pathology: Applies the principles of quality control, quality assurance testing, and method validation on clinical pathology tests (e.g., clinical chemistry and hematology). 3. Anatomic pathology: Applies the principles of proper use of control tissues for ancillary diagnostic tests (e.g., histochemical and immunohistochemical stains), appropriate method validation, and proper interpretation of common artifacts in tissue section or other samples (e.g., poor fixation, freeze-thaw).

D2. Elements of this domain are informed by Competency-Based Veterinary Education: CBVE 2.0 *Domains 4 (Public Health) and 8 (Financial & Practice Management).*

DOMAIN 3

Communication

The pathologist communicates effectively and respectfully with a diverse range of stakeholders in animal health, including professional colleagues, clients, public, and other entities, to promote animal, human, and environmental health and well-being.

COMPETENCIES		SUBCOMPETENCIES
3.1	**Listens attentively and communicates professionally.**	1. Uses appropriate terminology and approach for audience. 2. Utilizes a variety of communication platforms to ensure effective communication and accessibility (e.g., email, laboratory information management system [LIMS]). 3. Communicates with a variety of stakeholders (e.g., clients, laboratory professionals, researchers, trainees, fellow pathologists) to clarify details of a case and/or test.
3.2	**Adapts communication style to diverse audiences.**	1. Demonstrates audience-centered communication. 2. Elicits goals, expectations, perspectives, and constraints, considering the needs of the stakeholder(s). 3. Engages in difficult conversations (e.g., second opinions, sources of error, the role of diagnostics in spectrum of care).
3.3	**Prepares documentation/reports appropriate for the intended audience.**	1. Prepares a written pathology report, including a description and interpretation, using professional terminology. 2. Provides comments on diagnostic reports as needed (e.g., clarifies interpretation, conveys the level of certainty, recommends additional diagnostic testing). 3. Ensures documentation fulfills professional and legal requirements.

These competencies are adopted as written in Competency-Based Veterinary Education: CBVE 2.0 *Domain 5 (Communication).*

DOMAIN 4
Collaboration

The pathologist collaborates with diverse colleagues, clients, and other stakeholders and demonstrates skills as a leader and team member to improve outcomes and reduce error.

COMPETENCIES		SUBCOMPETENCIES
4.1	**Solicits, respects, and integrates contributions from others.**	1. Invites input from others irrespective of role, hierarchy, or background. 2. Acknowledges input and incorporates into ongoing plan of action. 3. Leverages own role and roles of others to achieve shared goals.
4.2	**Functions as leader or team member based on experience, skills, and context.**	1. Applies principles of teamwork in interprofessional and/or interdisciplinary teams. 2. Bases action on collaborative input. 3. Manages conflict.
4.3	**Maintains ongoing relationships to provide continuity of collaborative effort.**	1. Follows up to determine if collaborator can implement the plan. 2. Provides support through encouragement, education, or redirection to refine the plan of action.
4.4	**Demonstrates inclusivity and cultural competence.**	1. Demonstrates respect for diversity. 2. Encourages diverse contributions within the workplace.

These competencies are adopted as written in Competency-Based Veterinary Education: CBVE 2.0 *Domain 6 (Collaboration).*

DOMAIN 5

Professionalism & Professional Identity

The pathologist practices and advocates for reflective practice, ethical reasoning, conscious engagement in professional development, and self-regulation to promote both collaboration and personal well-being.

COMPETENCIES		SUBCOMPETENCIES
5.1	**Adopts an ethical approach to the practice of pathology.**	1. Applies clear knowledge of professional ethics on a personal, professional, and institutional level within their training and practice of pathology.
5.2	**Practices time management.**	1. Recognizes impact of time management on stakeholders. 2. Prioritizes and completes tasks according to importance and urgency.
5.3	**Reflects on personal actions and uses feedback to improve practices.**	1. Practices awareness and self-reflection. 2. Invites and responds to constructive feedback on performance. 3. Productively critiques their own decision-making process and its outcomes.
5.4	**Engages in self-directed learning.**	1. Engages in self-directed learning as a foundation for life-long learning. 2. Identifies and undertakes professional development to meet learning and certification needs. 3. Utilizes appropriate resources for learning and decision-making (e.g., consultation with colleagues, literature).
5.5	**Attends to the well-being of self and others.**	1. Manages expectations of self and stakeholders. 2. Recognizes sources of workplace stress and acts to remedy adverse situations. 3. Recognizes signs of stress in self and colleagues, engages in self-care, and recognizes when professional support for self or others is appropriate.
5.6	**Engages in career planning.**	1. Implements thoughtful strategies for professional development and career planning, weighing professional and personal rewards across a range of career options.

These competencies are adopted as written in Competency-Based Veterinary Education: CBVE 2.0 *Domain 7 (Professionalism and Professional Identity).*

DOMAIN 6

Scholarship

The pathologist formulates questions, generates solutions, and educates others through the systematic discovery, evaluation, integration, and adaptation of evidence.

COMPETENCIES		SUBCOMPETENCIES
6.1	**Practices evidence-based veterinary medicine (EBVM).**	1. Retrieves and evaluates information based on research best practices. 2. Interprets basic statistical analyses to evaluate conclusions. 3. Analyzes information for accuracy, reliability, validity, and applicability. 4. Formulates questions and customizes solutions, drawing on experience and available evidence. 5. Applies literature to solve clinical or scientific problems. 6. Engages in life-long learning activities to refine and expand their practice of pathology and maintain certification.
6.2	**Discovers and disseminates knowledge and practices.**	1. Generates knowledge related to the practice of pathology via independent research, pathology service, and/or collaborative investigation. 2. Shares knowledge for the benefit of others in the pathology and medical communities.

Competency 6.1 is adopted as written in Competency-Based Veterinary Education: CBVE 2.0 *Domain 9 (Scholarship).*
Competency 6.2 is adopted mostly as written in Competency-Based Veterinary Education: CBVE 2.0 *Domain 9 (Scholarship).*

The American College of Veterinary Pathologists (ACVP) is an organization of board-certified scientists that has been setting the standard for veterinary pathology since 1949.

ACVP is the oldest veterinary specialty organization recognized by the American Veterinary Medical Association (AVMA). Dedicated to furthering scientific knowledge, ACVP's activities include the peer-reviewed journal Veterinary Pathology and a renowned annual scientific meeting. Successful completion of ACVP's rigorous certifying examination ensures scientific prestige and strong employer demand. ACVP is working to ensure the future of veterinary pathology with veterinary pathology club support and scholarship programs. Both members and corporations support ACVP's activities with financial contributions.

Mission

The mission of the College is to promote excellence in veterinary pathology through our members as they protect and improve animal, human and environmental health to benefit society.

Vision

ACVP's vision is to propel veterinary pathology to the cutting edge of science and medicine for the advancement of animal and human health.