



Starting With the End in Mind: A Competency-Based Model for Veterinary Technology/Nursing Programs

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Objectives

Examine

Examine how competency-based education can enhance graduate preparedness and add value to the veterinary profession.

Explore

Explore the development and refinement process of the CBVE-N model by the AAVMC working group.

Analyze

Analyze how the CBVE-N model can strengthen clinical practice and inform curriculum improvements in vet tech/nursing education.

The AAVMC recognizes veterinary nurses and technicians as essential members of the veterinary healthcare team.

The CBVE-Nursing Working Group was formed by AAVMC in response to growing interest in advancing both competency-based veterinary education (CBVE®) and team-based veterinary healthcare.

The AAVMC engaged veterinary nursing and technology programs at our member institutions to lead the development of the CBVE-Nursing Model in alignment with the AAVMC CBVE® 2.0 Model for veterinary programs.

We are grateful to the CVTEA, AVTE, and the broader veterinary nursing and technology education community for their support in this important effort.

Partners in Education



Competency- Based Veterinary Education- Nursing

Group Charge and Goals

April 2021- April 2025

Enhance graduate readiness by providing tools to support the integration of competency-based education in veterinary nursing and technology programs.

Establish a shared framework of competencies for veterinary nursing and technology education through broad stakeholder consensus.

Align with CVTEA Essential Skills to ensure consistency with national accreditation standards.

Strengthen curriculum design and outcomes assessment through a competency-based approach.

Bridging the Gap to Career Readiness



Traditional Requirements: A Solid Foundation

- AVMA-CVTEA Essential Skills: Ensure students demonstrate key clinical skills before graduation
- VTNE: Validates core knowledge and technical proficiency required for licensure

CBVE-N Adds the “Real-World” Readiness Layer

- Integrates knowledge, technical skills, professional behaviors, and attitudes
- Prepares students to apply what they know in unpredictable, dynamic clinical environments
- Encourages development of critical thinking, communication, teamwork, and professional identity

CBVE-N doesn't just prepare students to graduate or pass an exam; it aims to prepare graduates to thrive as veterinary professionals

Established Competency Frameworks

AAVMC Competency-Based Veterinary Education Framework



Nine domains of competence comprised of 32 competencies for DVM education

Core Competencies for Professional Nursing Education



Ten domains of competence and expected competencies for human nursing education

Competency-based education has become the preferred model in healthcare education. CBVE-N informs employers, graduates, educators, and students of the entry-level competencies that a career-ready new graduate should have, and the process by which these may be attained. There are multiple benefits to this outcomes-based approach for various stakeholders, including the learner, the educator, the profession, and society.

What is CBVE-N?



Benefits for the Learner

- Learners visualize what is needed to become a veterinary technician/nurse through framework competencies.
- Learners have a clear roadmap to becoming a veterinary technician/nurse through milestones.
- Learners develop confidence for Day-1 practice through performing entrustable professional activities.

Benefits for Faculty

- Educators use competencies to clearly define the knowledge, skills, and behaviors required to be successful.
- Educators use milestones for each competency to guide and support learners' growth through developmental stages.
- Educators use backwards design to develop curricular content and activities constructively aligned with competencies and their milestones.
- Educators use entrustable professional activities to guide workplace-based assessment and feedback.

Benefits for our Patients, Profession, and Society

- Graduates reliably master strategically identified competencies, ensuring the reputation and relevance of the profession.
- Graduates demonstrate essential competencies to effectively serve individual patients, animal populations, and society.
- Employers use competencies to establish expectations and to mentor new graduates in professional development.
- Graduates are better prepared to engage in interprofessional collaboration and team-based thinking to solve complex problems.

Benefits for Programs and Academic Leadership

- Programs use a common framework and standardized outcomes to optimize curricular development.
- Programs develop shared instructional and assessment tools to efficiently and effectively achieve high-quality educational outcomes.
- Educational leaders use standardized rubrics for evaluating curricular outcomes to facilitate quality improvement and meet accreditation standards.

Competency-Based Education- The Core Components

Professional Outcomes:

Clearly articulated competencies are based on required workplace activities intended to meet client, patient, and community needs

Sequenced Progression:

Developmental indicators of competency are sequenced to support the progress of the learner through the educational program.

Competency-focused Instruction:

Teaching strategies emphasize individual competence acquisition according to expertise, experience, and approach to learning.

Programmatic Assessment:

Learner assessment incorporates frequent data collection, documenting progress against defined standards, and feedback promoting self-directed learning through a program of assessment.

Competency-Based Veterinary Education-Nursing (CBVE-N)



- **Framework** comprised of:
 - 9 domains of competence
 - 33 competencies for VT/VN education
 - examples of illustrative subcompetencies are provided to better define each competency
- **Milestones**
 - Define the developmental progression for each competency
- **Entrustable Professional Activities**
 - 9 complex activities that all students perform in the workplace
 - Incorporate multiple competencies and skills

Process For Competency Development

- Utilized CBVE framework as a template
 - Revised CBVE competencies to reflect VT scope of practice
 - Performed gap analysis for VT education/profession
- Solicited Feedback
 - Representative group of Program Directors from VT/VN programs
 - AAVMC DEI and Wellbeing subject matter experts
 - Workforce and Industry



Process For Competency Development cont...

Presented CBVE-N Model to CVTEA Executive Committee

- Requested feedback on Essential Skills alignment with competency framework
- Shared with Canadian Veterinary Medical Association Animal Health Technologist/Veterinary Technician Program Accreditation Committee (AHTVTPAC)

Presented CBVE-N to AVTE Executive Board

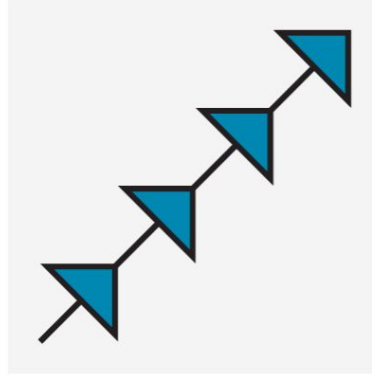
- Incorporated Feedback



Competency Framework



Milestones



Entrustable Professional Activities (EPAs)



Tool Description and Implementation



Competency Framework

Domains of Competence

Broad, distinguishable areas of competence that in the aggregate constitute a general descriptive framework for a profession

Englander *et al.*, (2013)



1		Clinical Reasoning and Decision-making
2		Individual Animal Care and Management
3		Animal Population Care and Management
4		Public Health
5		Communication
6		Collaboration
7		Professionalism and Professional Identity
8		Financial and Practice Management
9		Scholarship



DOMAIN 1

Clinical Reasoning and Decision-making

The graduate demonstrates critical thinking and problem solving to support evidence-based decisions that consider animal and client needs, available resources, and social context.

COMPETENCIES

1.1

Gathers and assimilates relevant information about animals

ILLUSTRATIVE SUBCOMPETENCIES

1. Collects history
2. Performs physical examination
3. Monitors patient status
4. Identifies normal and abnormal diagnostic test results
5. Performs necropsy examination

CVTEA SKILLS[†]

SURGICAL NURSING

Patient Management

- Properly identify patients and surgical procedures*
- Patient assessment:
 - organize medical records/consent forms*
 - review pre-operative evaluation*
 - evaluate current patient status*
- Perform necropsy procedures:
 - *perform a postmortem examination or dissection on non-preserved animal** [GROUP]

NURSING

Patient Assessment

- Recognize common domestic animal species and breeds*
- Describe and use common animal identification methods*
- Recognize and assess body language and behaviors (including pain assessment scales) for various animal species*
- Obtain a thorough patient history*
- Demonstrate the ability to obtain objective patient data:
 - temperature (dog, cat, horse/pony/donkey/mule, cow)*
 - pulse (dog, cat, horse/pony/donkey/mule, cow)*
 - respiration (dog, cat, horse/pony/donkey/mule, cow)*
 - auscultate heart/lungs (dog, cat, horse/pony/donkey/mule, cow)*
 - assess hydration status



COMPETENCIES	ILLUSTRATIVE SUBCOMPETENCIES	CVTEA SKILLS [†]
<p>5.3</p> <p>Prepares documentation appropriate for the intended audience</p>	<ol style="list-style-type: none"> 1. Documents care and communication using terminology appropriate for intended audience 2. Ensures documentation fulfills professional and legal requirements 	<p>OFFICE AND HOSPITAL PROCEDURES, CLIENT RELATIONS AND COMMUNICATION</p> <p>Communication</p> <ul style="list-style-type: none"> • Develop and provide client education in a clear and accurate manner at a level the client understands (i.e., oral and written form, including educational handouts) * • Demonstrate the ability to accurately record medical information* <p>PHARMACY AND PHARMACOLOGY</p> <p>Administration</p> <ul style="list-style-type: none"> • Demonstrate the ability to accurately record medical information* <p>Dispensing</p> <ul style="list-style-type: none"> • Relay drug information to clients (e.g., handling, storage, administration, side-effects, drug interactions, safety, reasons for use of drug)* <p>ANESTHESIA</p> <p>Patient Management</p> <ul style="list-style-type: none"> • <i>Record and maintain anesthesia records*</i>



DOMAIN 8

Financial and Practice Management

COMPETENCIES

8.4

Manages and maintains workplace environment and equipment

ILLUSTRATIVE SUBCOMPETENCIES

1. Manages and maintains hospital and therapeutic equipment
2. Utilizes appropriate sterilization and aseptic techniques to maintain a sterile operating environment
3. Manages Inventory

CVTEA SKILLS[†]

ANESTHESIA

Equipment and Facility Management

- *Maintain and operate anesthetic delivery and monitoring equipment:*
 - *pulse oximeter**
 - *capnometer**
 - *esophageal stethoscope**
 - *electrocardiograph (e.g., recognize abnormal rhythms/audible sounds, properly apply leads)**
 - *anesthetic machines, including rebreathing systems, non-rebreathing systems and masks**
 - *endotracheal tubes**
 - *resuscitation bag**
 - *scavenging systems**
 - *oxygen sources**
 - *blood pressure monitoring devices**
 - *laryngoscopes**
 - *ventilator*
 - *defibrillator*
 - *temperature monitoring device* (e.g. thermometer, etc.)*

SURGICAL NURSING

- *Operate and maintain autoclaves**
- *Sterilize instruments and supplies using appropriate methods**
- *Provide operating room sanitation and care**
- *Perform post-surgical clean-up (e.g., equipment, instruments, room, proper disposal of hazardous medical waste)**





LABORATORY PROCEDURES

Specimen Management

- *Select and maintain laboratory equipment**

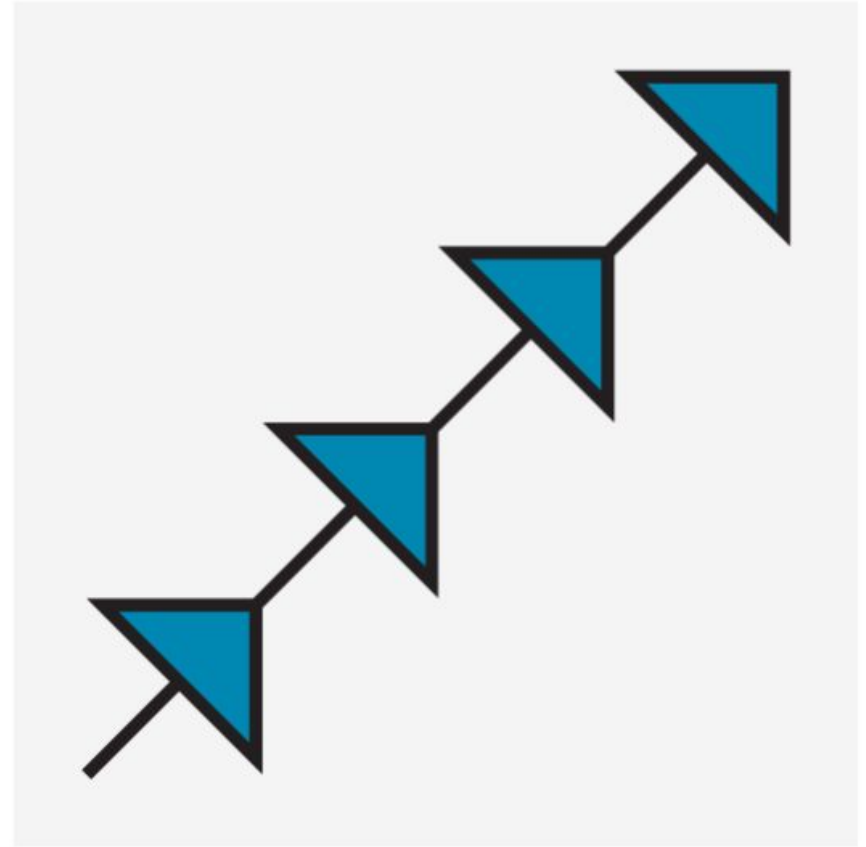
IMAGING

- *Implement and observe recommended radiation safety measures**
- *Demonstrate proper maintenance of radiographic equipment, including recognition of faulty equipment operation**

	Novice
	Advanced Beginner
	Competent
	Proficient

Milestones

Competencies
may be
assessed using
milestones...



Milestones provide a roadmap for the expected learner development & achievement of each competency over time.



MILESTONES



Novice:

Learner development expected from entry into the veterinary nursing/ technician program and leading up to entry into the workplace environment



Advanced Beginner:

The minimum expectation for entry into the authentic workplace



Competent:

Expectation for entry into the professional career



Proficient:

Aspirational expectation after some time in the workplace

COMPETENCIES

5.3

Prepares documentation appropriate for the intended audience

ILLUSTRATIVE SUBCOMPETENCIES

1. Documents care and communication using terminology appropriate for intended audience
2. Ensures documentation fulfills professional and legal requirements

MILESTONES

NOVICE:

Documents some relevant information but may not be timely, well organized, legible, accurate, complete or relevant. Terminology may be inappropriate for the audience. Requires point-by-point direction to complete forms.

ADVANCED BEGINNER:

Documents most relevant information in a legible and timely manner but may not be organized or concise and may require revision to correct inaccuracies. Terminology is usually appropriate for the audience. Forms are usually completed correctly with some guidance.

COMPETENT:

Documents information that is accurate and organized using terminology appropriate for the target audience. Documentation is timely, legible and requires little revision. Forms are filled out completely according to directions.

PROFICIENT:

Documents information thoroughly and concisely with adaptation to the intended audience. Able to identify deficiencies in documentation

COMPETENCIES

8.4 Manages and maintains workplace environment and equipment

ILLUSTRATIVE SUBCOMPETENCIES

1. Complies with workplace health and safety regulations (e.g., radiation safety, infection control)
2. Applies safe practices for handling hazardous materials (e.g., administration of chemotherapeutic agents)
3. Identifies and addresses sources of medical error/adverse events

MILESTONES

NOVICE:

Incomplete knowledge of hospital procedures, inventory management, and equipment. May have difficulty troubleshooting issues with equipment or recognizing inappropriate results. Demonstrates understanding of asepsis but may not implement sterile technique appropriately.

ADVANCED BEGINNER:

Basic knowledge of hospital procedures, inventory management, and equipment. Capable of troubleshooting most issues with equipment and usually recognizes inappropriate results. Implements sterile technique in most environments.

COMPETENT:

Comprehensive understanding of hospital procedures, inventory management, and equipment. Ability to troubleshoot equipment issues and consistently recognizes inappropriate results. Consistently implements sterile techniques.

PROFICIENT:

Proactively maintains equipment minimizing failure and inappropriate results. Accurate forecasting of inventory trends. Leads team to efficiently and accurately apply knowledge of asepsis and sterile technique.



Entrustable Professional Activities

Entrustable Professional Activities (EPAs)

- Routine activities that veterinary technicians/nurses perform in their daily practice
- Integrate multiple competencies from multiple domains



Entrustable Professional Activities (EPAs)



1	Gathers a history, performs an examination, generates an initial problem list
2	Implement diagnostic plan and report results
3	Implement a management/treatment plan
4	Recognizes a patient requiring urgent or emergent care and initiates evaluation and management
5	Formulates relevant questions and retrieves evidence to advance care
6	Performs tasks associated with surgery
7	Performs general anesthesia and recovery of a stable patient including monitoring and support
8	Implements recommendations for preventive healthcare
9	Management of hospital systems including equipment, medical records, and inventory



EPA 1
Gathers a
history,
performs an
examination,
generates an
initial problem
list

DESCRIPTION OF ACTIVITY	Performs a history and exam on an individual animal or group and assimilates a case summary to present to the veterinarian
COMMENTARY	The history and examination should be tailored to the clinical situation and specific patient encounter. This data gathering serves as the foundation for evaluation and management. Expectations include integration of the scientific foundations of medicine with clinical reasoning skills to guide information gathering.
MOST RELEVANT DOMAINS	1: Clinical Reasoning and Decision-making 5: Communication
SECONDARY DOMAINS	2: Individual Animal Care and Management 3: Animal Population Care and Management 6: Collaboration 8: Financial and Practice Management
ELEMENTS WITHIN ACTIVITY	<p>Consultation</p> <ul style="list-style-type: none"> Obtains a complete and accurate history in an organized fashion [1.1, 1.2, 5.1] Demonstrates client-centered interview skills (establish rapport, attentive to verbal and nonverbal cues, client culture, socioeconomic factors, demonstrate active listening skills) [1.1, 1.4, 5.1, 5.2, 6.1] Identifies the client's complaint [1.4, 1.5, 5.1] Identifies pertinent history elements associated with common conditions [1.1, 5.1] Demonstrates cultural competence in interactions with clients, recognizing the potential for bias [1.4, 5.2, 6.4] <p>Examination</p> <ul style="list-style-type: none"> Performs exam (individual animal or group) [1.1] Communicates findings [5.1, 5.2] Attends to patient welfare and client safety and comfort [1.4, 2.2, 3.3, 8.3] <p>Assimilate a Case Summary</p> <ul style="list-style-type: none"> Creates a problem list [1.2] Accurately summarizes findings and presents to the veterinarian [5.1, 5.2, 6.2] <p>Documentation</p> <ul style="list-style-type: none"> Documents findings in the medical record [5.3, 8.2]



EPA 7

Performs general anesthesia and recovery of a stable patient including monitoring and support

DESCRIPTION OF ACTIVITY	Induces, maintains and recovers a stable anesthetic patient (ASA 1 or 2), including monitoring vital functions and providing supportive care. Evaluates patient status, and coordinates a suitable anesthetic and analgesic protocol.
COMMENTARY	Applies knowledge of anatomy, physiology, pharmacology, and the procedure, and utilizes the psychomotor skills to execute the protocol safely. Recognizes and manages complications.
MOST RELEVANT DOMAINS	1: Clinical Reasoning and Decision-making 2: Individual Animal Care and management 5: Communication 6: Collaboration 8: Financial and Practice Management
SECONDARY DOMAINS	4: Public Health 7: Professionalism and Professional Identity 9: Scholarship
ELEMENTS WITHIN ACTIVITY	<ul style="list-style-type: none"> Evaluates patient based on history, physical examination, results of diagnostic tests and procedures for suitability for anesthesia (ASA status 1 or 2 – a normal, healthy patient or a patient with mild systemic disease that does not result in functional limitations) [1.1, 1.3, 7.1, 9.1] Safely Implements a general anesthetic and analgesic protocol including premedication, induction, maintenance and recovery. [1.3, 2.1, 4.2, 7.2, 8.2, 8.3, 9.1] Shares plan with team members and answers questions [5.1, 5.2, 6.1, 6.2, 6.4, 9.2] Selects and prepares anesthetic support and monitoring equipment[8.4] Recognizes own limitations and collaborates with others as needed [1.7, 6.1, 6.3, 7.5] Follows legal requirements for use of controlled substances [5.3, 8.2] Maintains an anesthetic record including drugs, doses, route and time of administration, vital signs, important anesthetic and procedure events and complications [5.3, 8.2]



How to Start With the End in Mind

Implementing the CBVE-N
model in your program

Five Core Components To Use CBVE-N

- clearly articulated outcomes
- sequenced progression of learning
- tailored learning experiences
- competency-focused instruction
- programmatic assessment



Implementation Strategies

Use

Use the CBVE-N framework to establish a unified language for defining career readiness outcomes

Introduce

Introduce the Milestones and EPAs as tools to guide development and track learner progression

Begin by

Begin by forming a core implementation group and securing leadership buy-in

Build

Build shared understanding through department discussions and faculty forums

Implementation Strategies

Steps Toward Meaningful Integration

Curriculum Mapping

Align current course outcomes with CBVE-N competencies to identify strengths and gaps

Redesign with Intent

Use framework to guide learning experiences that build toward professional competencies

Start Small

Pilot concepts (EPAs or milestones) in select courses or labs or develop personalized subcompetencies that reflect your program priorities

Milestone Progression

Clearly define student expectations at key stages of the program (early didactic coursework, internship readiness, and graduation)

Using CBVE-N to Ensure Success



Faculty & Community Partner Development: Focus on coaching skills: observation, feedback, supporting growth



Assessment Strategies: Use tools that gather longitudinal data (e.g., ITERs, DOPS, mini-CEX)



Support Reflective Practice: Promote a growth mindset in both learners and educators



Assessment Strategies

transition from a culture of
assessment of learning
(evaluation) to assessment
for learning (coaching)



A collection of assessment tools that can be adapted for veterinary technician training

Supports programmatic assessment through diverse, low-stakes evaluations over time

Focus on tools that assess skills integration, behavior, and decision-making

Designed to capture clinical reasoning, communication, teamwork, and professionalism

Assessment Toolkit



Competency-Based Veterinary Education:
Toolkit



	Competencies Assessed						
	Clinical Knowledge "What You Know"	Critical Reasoning "How You Think"		Technical Skills "What You Can Do"	Professional Identity "How You Interact"		
	Individual Animal Care, Animal Population Care, & Public Health	Clinical Reasoning & Decision-Making	Gathering & Evaluating Information	Medical, Surgical, & Anesthetic Procedures	Written Communication	Verbal Communication	Collegiality & Teamwork
Domains of competence	2, 3, 4	1	1, 2, 5	6, 7	5, 8, 9	5, 8, 9	6
Written & Oral Examinations							
Multiple Choice Questions (MCQ)	X	X					
Extended Matching Questions (EMQ)	X	X					
Fill in the blank (FITB)	X	X			X		
Short Answer Questions (SAQ)	X	X			X		
Essay Questions	X	X			X		
Practical (Skills) Examinations							
In Training Evaluation Report (ITER)	X	X	X	X	X	X	X
Case-Based Discussion	X	X				X	
Direct Observation of Procedural Skills (DOPS)				X			
Objective Structured Clinical Examination (OSCE)				X		X	
Clinical Evaluation Exercise (CEX)				X			

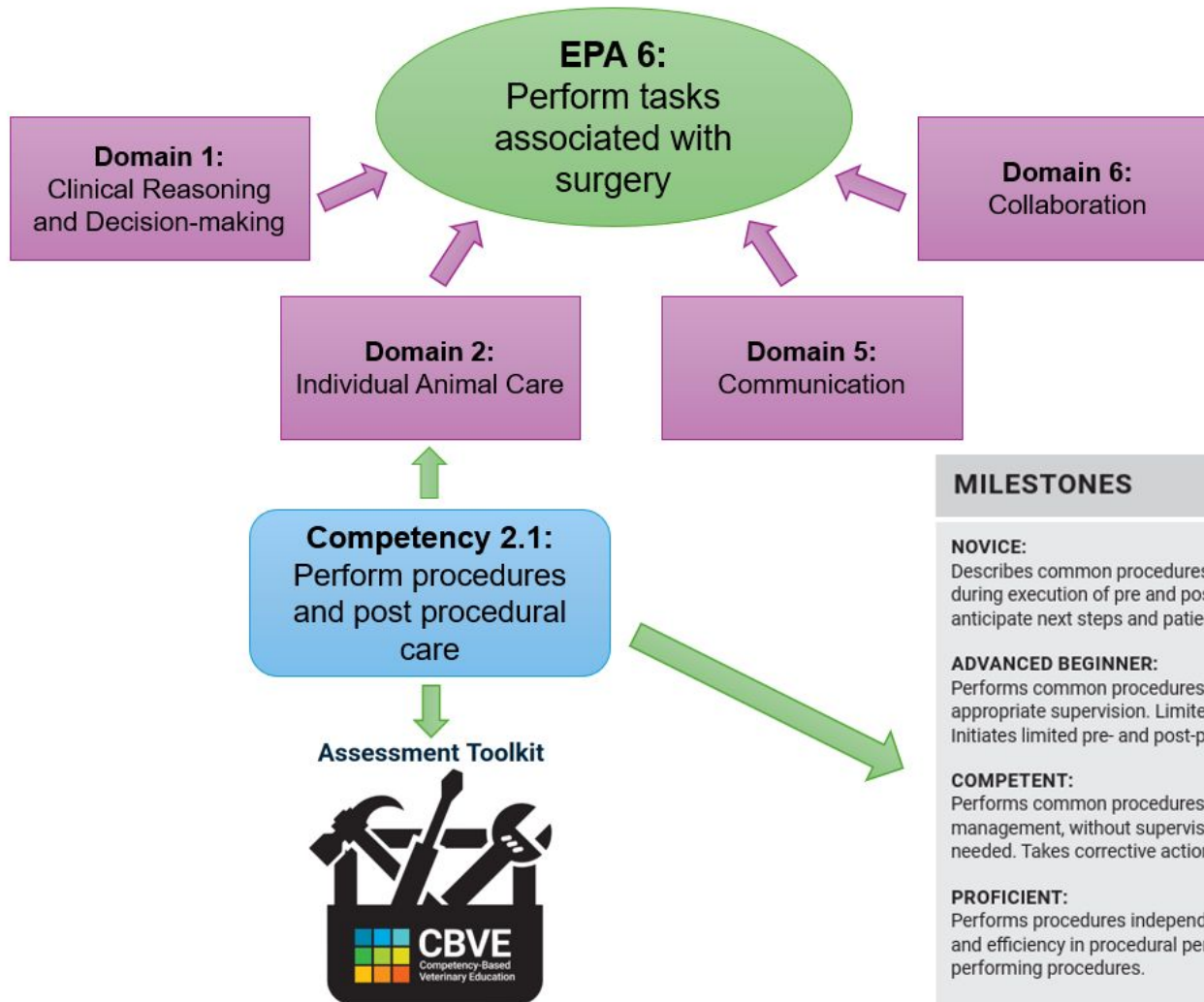
Toolkit

Advantage of MCQs:

Well-written MCQs can efficiently assess a wide range of cognitive skills and content, are familiar to students, and allow for automated grading and analysis.

Limitation of MCQs:

MCQs are less effective for assessing procedural skills, behaviors, or attitudes, and require significant training and effort to write well.



MILESTONES

NOVICE:

Describes common procedures. Requires step-by-step coaching during execution of pre and post-procedural care. Limited ability to anticipate next steps and patient needs.

ADVANCED BEGINNER:

Performs common procedures with intermittent assistance and appropriate supervision. Limited ability to take corrective action. Initiates limited pre- and post-procedural care.

COMPETENT:

Performs common procedures, including pre-and post-procedural management, without supervision but with support available, if needed. Takes corrective action as warranted.

PROFICIENT:

Performs procedures independently. Demonstrates fluidity and efficiency in procedural performance. Supervises others in performing procedures.

In Conclusion

CBVE-N provides a learner-centered, outcomes-based framework to ensure graduates are truly *career-ready*.

The model integrates competencies, milestones, and entrustable professional activities (EPAs) to support:

Transparent learning progression for educators and learners

Consistent, high-quality program outcomes

Integrated development of clinical, communication, and professional skills

Implementation fosters alignment across programs, enhances accreditation readiness, and empowers both students and educators.

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Thank you!

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