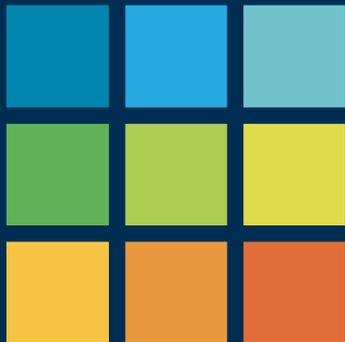




American Association of
Veterinary Medical Colleges



CBVE

Competency-Based
Veterinary Education

CBVE Newsletter – May 2023



Exciting News to Share

Greetings from the AAVMC Council on Outcomes-based Veterinary Education! We are excited to share news about a summer workshop “Implementing CBVE” at The Ohio State University on Wednesday/Thursday, June 28 – 29, 2023. Registration details may be found on the [cbve.org](https://www.cbve.org) website. Each AAVMC member school is encouraged to send up to three faculty members. Remaining availability will open on a first come, first served basis once registration closes. The workshop will be a great opportunity to dive deeper into CBVE, network with others who are passionate about this model, and share challenges and successes related to transitioning to competency-based education. A broad overview of the workshop may be found below. We hope to see you in Columbus this summer!

The AAVMC Council on Outcomes-based Veterinary Education presents:

Implementing CBVE

Summer Workshop

June 28 – 29, 2023

The Ohio State University, Columbus, Ohio, USA

8:00 am: How to integrate and apply components of the CBVE Model

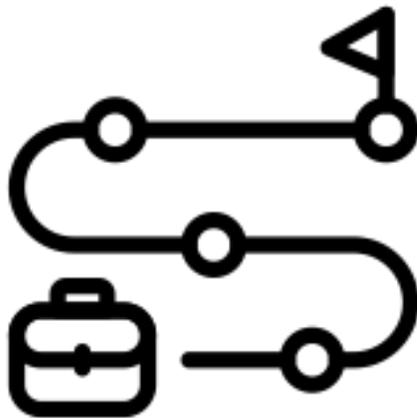
DAY 1 12:00 pm: Lunch & networking

1:30 pm: How to implement a program of competency-based assessment

8:00 am: How to use EPAs and remediate learner progress

DAY 2 12:00 pm: Lunch & networking

1:30 pm: Challenges and successes in implementing CBVE



Milestones

Introduction:

One of the important constructs of competency-based education is providing sequenced developmental learning outcomes for learners. Documenting a learner's progression along the learning continuum is possible with the use of milestones.

Milestones are descriptive narratives written for each competency within a competency domain.

Milestones provide a mechanism for operationalizing the competency framework. They allow learners to visualize the expected course of their development for each competency across the program. Educators may use milestones to assess learner performance and to provide feedback for their continued growth and learning.

In graduate medical education, milestones use the Dreyfus model of assessment: Novice, Advanced Beginner, Competent, Proficient, and Expert (1). In undergraduate medical education, milestones are also being implemented with increasing frequency to support medical students transitioning through internship and into residency training (2).

Uses and Benefits:

Within the Competency-Based Veterinary Education (CBVE) model, milestones were initially published to support learner development in clinical training (3).

- *Novice* milestone: expected level of achievement prior to entering training in the clinical workplace.
- *Advanced beginner* milestone: achieved across the clinical training program.
- *Competent* milestone: expected level of achievement by the time of graduation.
- *Proficient* milestone: this milestone level is aspirational and meant to be achieved at some point during clinical practice, presumably within the first year.

The CBVE Milestones afford a unique opportunity to quantify and qualify a learner's longitudinal progression in their clinical training, allowing progression and next steps to be visible to both learner and evaluator/observer. Milestones assist in planning assessment throughout the curriculum, including pre-clinical stages, to ensure learners' progressive development towards competence. The CBVE Milestones have been successful in supporting the training of clinical veterinary students. When milestones were used as anchors for fourth year in-training evaluation reports (ITERS) at The Ohio State University, it was demonstrated that learners increase their competence across the clinical training program as outlined in the developmental progression of learning in the clinical milestones. This study demonstrated reliability and offered evidence for validity in assessment of clinical veterinary students using a CBVE Milestone-based ITER (4). In medical education, milestones have been able to predict resident performance trajectory (5).

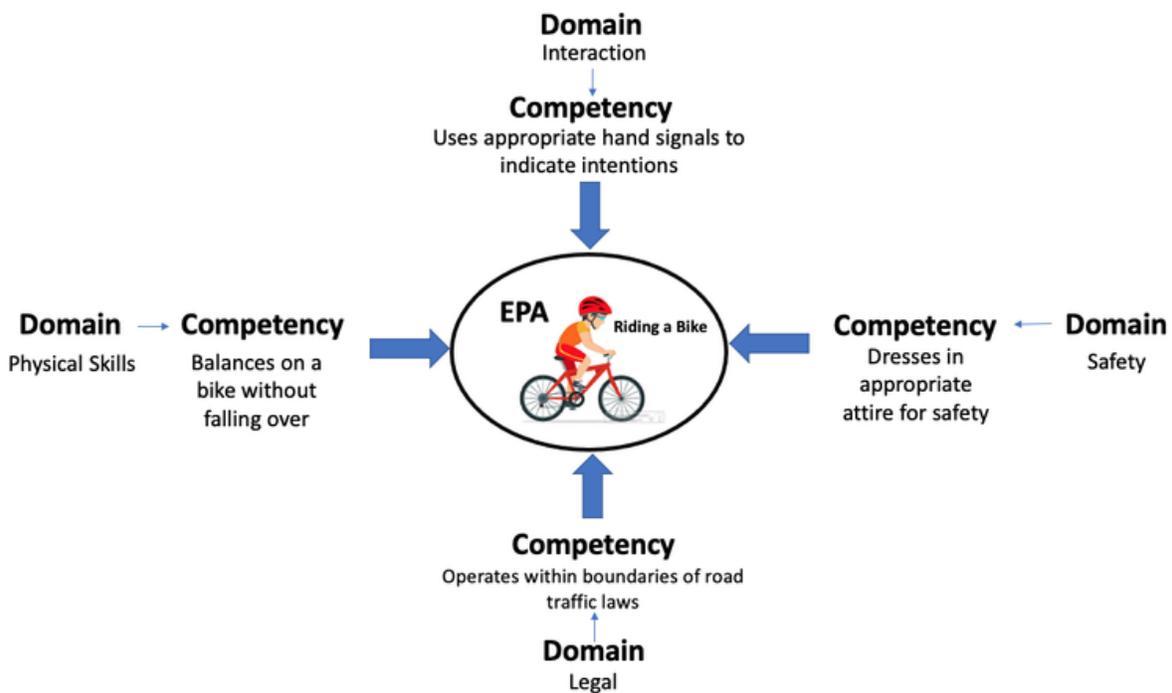
Using backward design, pre-clinical milestones can be developed for each competency starting with clinical training and working backward within the pre-clinical program.

Pre-clinical milestones act as a roadmap for learners to visualize their developmental pathway across their training and assist educators and administrators in providing feedback and assessment for learners prior to entry into clinics.

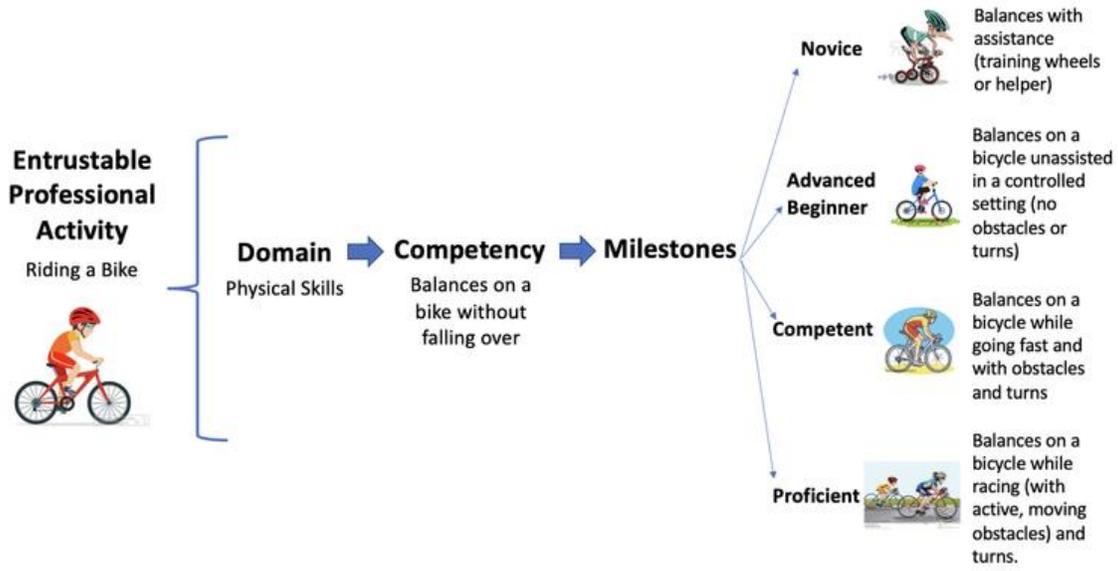
Similar to undergraduate medical education, anchors for pre-clinical milestones are supportive of students in reaching the *Novice* level by the entry point into clinical training. CBVE Milestone anchors of “Pre-Novice Level 1” and “Pre-Novice Level 2” have been suggested to represent the sequenced progression of expected pre-clinical development for each competency within the CBVE Framework (5). The examples below help demonstrate these relationships.

Relationships:

We can use the bike-riding example from previous CBVE newsletters to help define how milestones may be utilized in veterinary education. In this example, several competencies have been created to demonstrate the complex entrustable professional activity (EPA) of riding a bike. Each of these competencies must be mastered to successfully ride a bike.

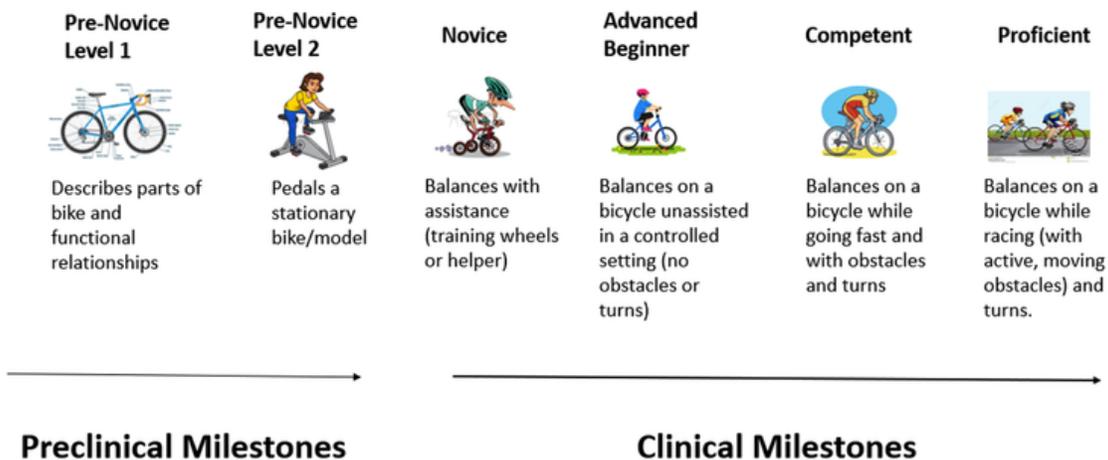


Milestones may be used to allow educators to assess learners for each competency in clinical training. If we take the competency on the left of the diagram above “Balances on a bike without falling over”, the image below depicts the developmental expectations for learning and training to achieve this competency. In this way, educators may use the milestones to assess learner achievement of an individual competency in clinical training. The learner is expected to move from the *Novice* level at entry into clinical training, through the *Advanced Beginner* level across clinical training, and to reach the *Competent* milestone by the time of graduation. The *Proficient* level may be reached by a small subset of learners by graduation but is more likely an aspirational marker to be achieved in the first year of a graduate’s professional career.

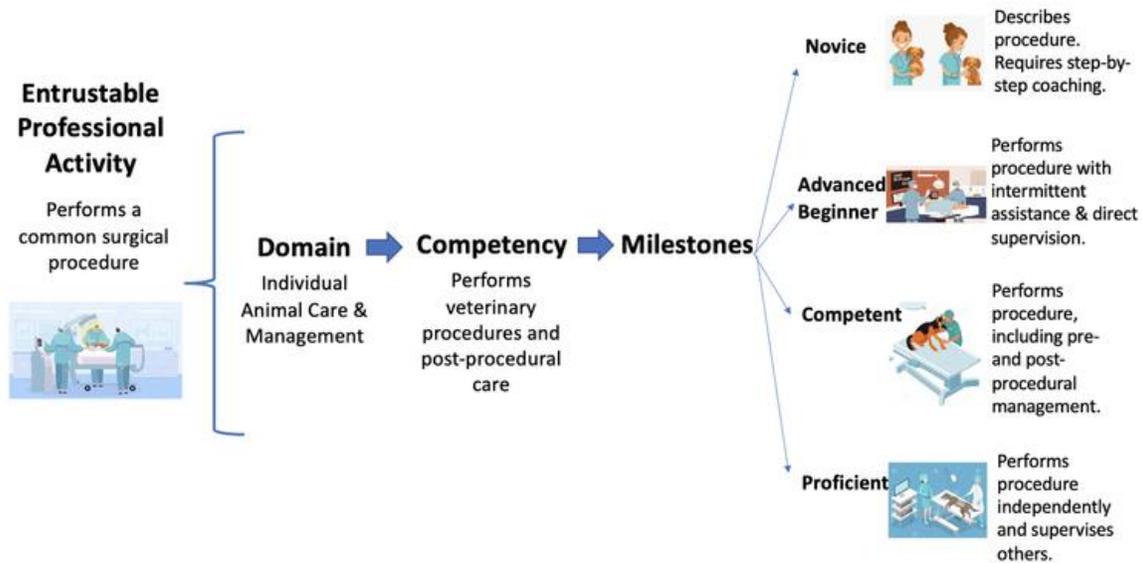


Using a similar example, we can consider the use of *pre-clinical* milestones to demonstrate how the CBVE Competency Framework may be utilized in the earlier phases of veterinary education. Pre-clinical milestones support learners by providing a roadmap of expected performance from the time of entry into the program and in preparation for clinical training. Pre-clinical milestones demonstrate where discipline-specific content may serve as a foundation for competencies. In the example below, the two pre-clinical levels of expected learning are represented for the competency above “Balances on a bike without falling over”.

Competency: Balances on a bike without falling over.

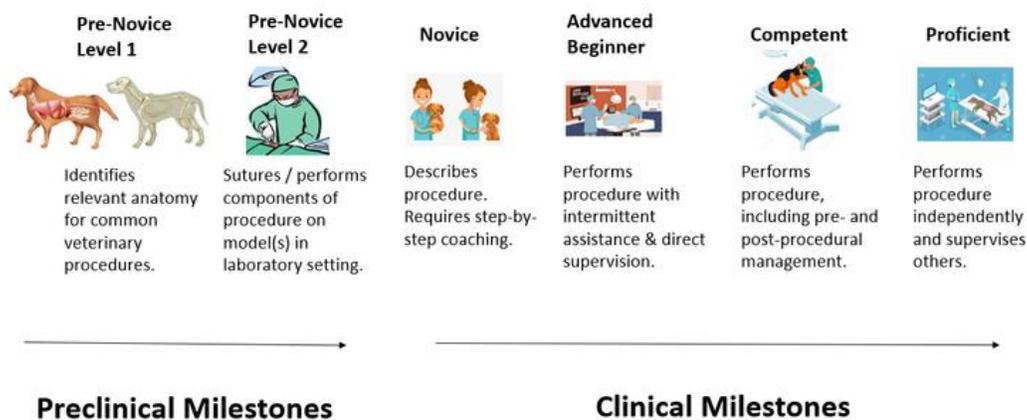


Next, apply this principle to veterinary education. Here is an example of an activity (EPA) that all graduates must be able to perform at the time of graduation: “Perform a common surgical procedure.” The example below demonstrates how milestones are used to evaluate a learner’s achievement or progression in learning for an individual competency.



By combining both clinical and pre-clinical milestones, learners and educators can visualize the pathway along the continuum of learning that is expected for each competency, from entry into the program and through the point of graduation. Students may find value in pre-clinical milestones as signposts or a roadmap for their learning pathway. Educators may visualize how foundational sciences contribute to the educational experiences of veterinary students. The example below depicts two levels of expected pre-clinical learning for the competency “Performs veterinary procedures and post-procedural care” related to surgical skill development and knowledge of veterinary anatomy as precursors to the *Novice* milestone.

Competency 2.1: Performs veterinary procedures and post-procedural care.



The AAVMC Council for Outcomes-based Veterinary Education and its associated CBVE Working Groups are currently drafting pre-clinical milestones for each competency in the CBVE Competency Framework. Please stay tuned in additional newsletters and/or visit the cbve.org website for more details on the publication of this component of the CBVE Model.

Key Points:

- Milestones are used to guide progress for each competency in the CBVE Framework, not for other components of the CBVE Model.
 - Milestones can be used across the pre-clinical and clinical program.
 - Milestones can help target opportunities for growth for learners (i.e., remediation).
 - Learner must demonstrate all the narrative descriptions for a particular milestone to satisfactorily achieve that milestone level.
 - Some learners may demonstrate characteristics/behaviors that fall between two milestones.
 - This creates an opportunity for learner feedback and/or remediation to support continued learning and student growth in achieving the next milestone level.
 - Ideally, learners should achieve the *Novice* milestone at entry into clinics.
 - The *Competent* milestone should be achieved by graduation.
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References:

1. Carraccio, C. L. , Benson, B. J. , Nixon, L. J. & Derstine, P. L. (2008). From the Educational Bench to the Clinical Bedside: Translating the Dreyfus Developmental Model to the Learning of Clinical Skills. *Academic Medicine*, 83 (8), 761-767. doi: 10.1097/ACM.0b013e31817eb632.
 2. Carraccio C, Englander R, Gilhooly J, Mink R, Hofkosh D, Barone MA, Holmboe ES. Building a Framework of Entrustable Professional Activities, Supported by Competencies and Milestones, to Bridge the Educational Continuum. *Acad Med*. 2017 Mar;92(3):324-330. doi: 10.1097/ACM.0000000000001141. PMID: 26959225.
 3. Salisbury, S. K., Chaney, K. P., Ilkiw, J. E., Read, E. K., Rush, B. R., Bok, H. G. J., Danielson, J. A., Hodgson, J. L., Matthew, S. M., May, S. A., & Molgaard, L. K. (2019). Competency-Based Veterinary Education: Part 3 - Milestones. Washington, DC: Association of American Veterinary Medical Colleges.
 4. Read EK, Maxey C, Hecker KG. Longitudinal assessment of competency development at The Ohio State University using the competency-based veterinary education (CBVE) model. *Front Vet Sci*. 2022 Oct 24;9:1019305. doi: 10.3389/fvets.2022.1019305. PMID: 36387400; PMCID: PMC9642912.
 5. Chaney KP, Hodgson JL. Using the Five Core Components of Competency-Based Medical Education to Support Implementation of CBVE. *Front Vet Sci*. 2021 Jul 20;8:689356. doi: 10.3389/fvets.2021.689356. PMID: 34355035; PMCID: PMC8329094.
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Upcoming Events

CBVE Summer Workshop

- Implementing CBVE - June 28-29, 2023
- The Ohio State University, Columbus, Ohio, USA
- Registration information can be found at [cbve.org](https://www.cbve.org)

Association for Medical Education in Europe (AMEE)

- August 26-30, 2023
- Glasgow, Scotland

CBVE Fall Town Hall - September 2023

Primary Care Veterinary Educators (PCVE)

- October 18-21, 2023
- University of Florida, Gainesville

Veterinary Educator Symposium (formerly VEC)

- October 27-28, 2023
- Texas Tech University

AAVMC Catalyze 2024

- April 11-13, 2024
- The Grand Hyatt – Downtown D.C.

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