Entry-level DVM

Core Competencies

UCDAVIS
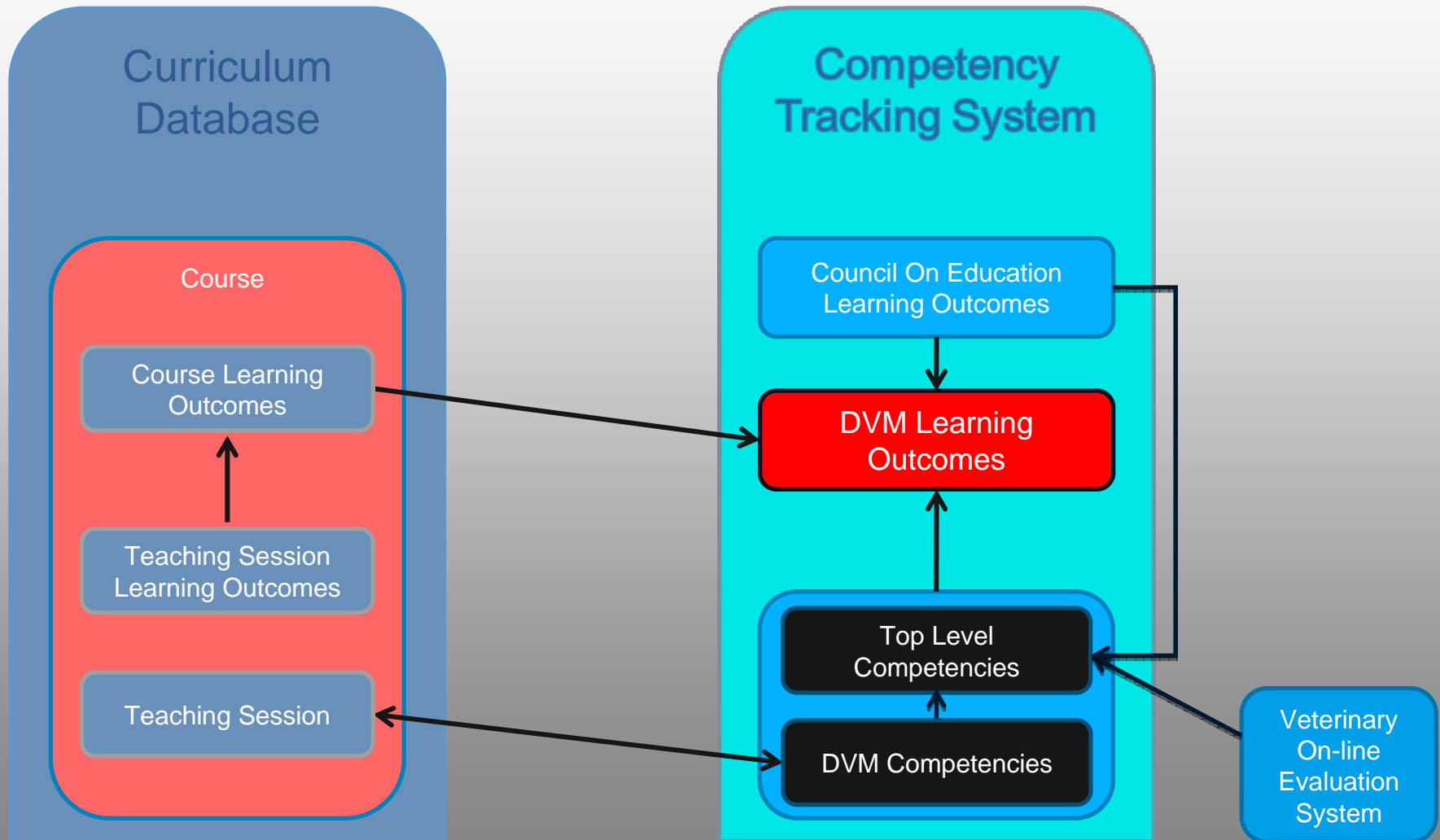VETERINARY MEDICINE

Educational Process

Competencies

Program Competency Domains

- **Basic science, paraclinical and clinical knowledge**

- **Business**

- **Communication skills**

- **Entry-level clinical skills**

- **Ethics**

- **Problem solving, critical thinking, life-long learning**

- **Professionalism**

- **Public, environmental and animal public health**

Competencies

Learning Outcomes

Domain	Learning Outcomes
Problem solving, critical thinking and life-long learning skills	Demonstrate skills and tools necessary to promote life-long learning
	Access biomedical information and medical records from electronic databases and other resources
	Demonstrate competency in effective problem-solving and critical thinking
	Critically evaluate new knowledge with an understanding of the basic concepts and principles of scientific investigation in biomedical sciences

Competencies

The Process

- **Assemble an extensive list of veterinary competencies**

    - **Lists available from other schools**

    - **List available from the RCVS**

    - **List available from the COE**

    - **Lists available from AAEP**

    - **Lists available from the literature**

        - Small animal

        - Food animal

Competencies

The Process

- Map the competencies to learning outcomes

- Determine top level competencies

- Place the competencies into 4 surveys

  - Core

  - Small animal

  - Equine

  - Food animal

- Ask two groups to take the surveys

  - Faculty within the school

  - Stakeholders in veterinary practice

Competencies

An Example of Mapping

Domain	Learning Outcomes	Top Level Competencies	Competencies
Problem solving, critical thinking and life-long learning skills	Demonstrate skills and tools necessary to promote life-long learning		
	Access biomedical information and medical records from electronic databases and other resources		
	Demonstrate competency in effective problem-solving and critical thinking		
	Critically evaluate new knowledge with an understanding of the basic concepts and principles of scientific investigation in biomedical sciences	Evaluating information	Critically evaluate a journal article
			Evaluate research data to broaden knowledge base and influence patient diagnostic and treatment plans
			Recognize different levels of evidence when evaluating data relevant to case management

Competencies

Mapping

	Domains	Learning Outcomes	Top Level Competencies	Competencies
All	7	36	58	880
Core	7	21	33	193

Core Competencies

Domain - Entry-level Clinical Skills

Domain	Learning Outcomes	Top Level Competencies	Competencies
Entry-level clinical skills	7	18	128

Core Competencies

Domain – Entry-level clinical skills

Demonstrate knowledge and skills in handling and examining animals - handling			
Competency	Faculty (n = 84)	Stakeholders (n = 37)	Difference
Ensure appropriate hygiene is followed before and after handling animal/s	100%	97%	- 3%
Safely catch, handle and restrain	99%	89%	- 10%
Describe physical features that are indicative of temperament/behavior	90%	91%	+ 1%
Estimate age based on dentition	65%	71%	+ 6%
Estimate body weight	78%	84%	+ 6%

Core Competencies

Domain – Entry-level clinical skills

Demonstrate knowledge and skills in handling and examining animals - examining			
Competency	Faculty (n = 84)	Stakeholders (n = 37)	Difference
Perform general physical examination, which includes observe behavior and temperament, general physical examination, body condition score and vital signs (ID heart and breath sounds, take temperature)	100%	100%	0%
Perform a cardiovascular examination	97%	97%	0%
Perform a respiratory examination	97%	100%	+ 3%
Perform an orthopedic examination	91%	94%	+ 3%
Perform an neurologic examination	86%	97%	+ 11%

Core Competencies

Domain – Entry-level clinical skills

Demonstrate knowledge and skills in handling and examining animals - examining			
Competency	Faculty (n = 84)	Stakeholders (n = 37)	Difference
Perform an ophthalmologic examination	86%	94%	+ 8%
Perform an dermatologic examination	87%	100%	+ 13%
Perform an oncologic examination	72%	74%	+ 2%
Perform a dental examination	87%	94%	+ 7%
Perform a reproductive examination	74%	74%	0%
Perform a gastrointestinal examination	88%	100%	+ 12%
Perform a urinary system examination	87%	94%	+ 7%

Core Competencies

Domain – Entry-level clinical skills

Develop and apply diagnostic and therapeutic strategies for common problems identified from the clinical evaluation of the animal - diagnostic			
Competency	Faculty (n = 84)	Stakeholders (n = 37)	Difference
Develop a problem list and identify the main body systems affected	100%	97%	- 3%
Create differential diagnosis list	99%	97%	- 2%
Develop a diagnostic plan	100%	97%	- 3%
Choose appropriate diagnostic tests	100%	94%	- 6%
Create treatment plan/daily treatment sheet	99%	97%	- 2%
Order appropriate laboratory tests	97%	94%	- 3%
Interpret results of laboratory tests obtained	97%	91%	- 6%

Core Competencies

Domain – Entry-level clinical skills

Develop and apply diagnostic and therapeutic strategies for common problems identified from the clinical evaluation of the animal - therapeutic			
Competency	Faculty (n = 84)	Stakeholders (n = 37)	Difference
Develop a therapeutic plan	100%	94%	- 6%
Organize oral summary of case for peers	94%	86%	- 8%
Follow patient through treatment	96%	94%	- 2%
Make appropriate referrals supported by evidence	93%	94%	+ 1%

Core Competencies

Domain – Entry-level clinical skills

Demonstrate technical skills used in the diagnosis and management of diseases – emergency medicine			
Competency	Faculty (n = 84)	Stakeholders (n = 37)	Difference
Demonstrate assessment and emergency management of a trauma patient	97%	94%	- 3%
Recognize and initiate appropriate management of unconsciousness	91%	91%	0%
Recognize and initiate appropriate management of shock	99%	94%	- 5%
Recognize and initiate appropriate management of external hemorrhage	99%	100%	+ 1%
Calculate and administer nasal oxygen	73%	79%	+ 6%
Demonstrate cardiopulmonary resuscitation	93%	91%	- 2%
Demonstrate stabilization of a fractured limb	97%	94%	- 3%
Demonstrate limb bandage	99%	94%	- 5%
Demonstrate wound management	99%	97%	- 2%

Core Competencies

Domain – Entry-level clinical skills

Demonstrate technical skills used in the diagnosis and management of diseases – surgery			
Competency	Faculty (n = 84)	Stakeholders (n = 37)	Difference
Demonstrate instrument tie	100%	97%	- 3%
Demonstrate square knot	94%	97%	+ 3%
Perform one hand surgical tie	61%	71%	+ 10%
Perform two hand surgical tie	87%	88%	- 1%
Discuss surgical risk	96%	91%	- 5%
Demonstrate pack preparation	83%	78%	- 5%
Demonstrate patient preparation	96%	94%	- 2%
Demonstrate surgeon preparation	100%	100%	0%
Demonstrate sterile technique	100%	100%	0%
Demonstrate correct instrument handling	99%	100%	+ 1%

Core Competencies

Domain – Entry-level clinical skills

Demonstrate technical skills used in the diagnosis and management of diseases – surgery			
Competency	Faculty (n = 84)	Stakeholders (n = 37)	Difference
Demonstrate correct tissue handling	100%	100%	0%
Demonstrate proficiency in hemostasis	100%	97%	- 3%
Demonstrate a range of suture patterns for abdominal closure	93%	94%	+ 1%
Demonstrate suture or staple removal	97%	97%	0%
Demonstrate an ovariohysterectomy	97%	88%	- 9%
Demonstrate a castration	97%	91%	- 6%
Demonstrate proper postoperative patient care including wound evaluation	99%	97%	- 2%
Write a surgery report	96%	94%	- 2%
Assemble and fit Elizabethan collar	88%	84%	- 4%
Implant microchip and check function	90%	81%	- 9%

Core Competencies

Domain – Entry-level clinical skills

Demonstrate knowledge and skills in the interpretation of common diagnostic procedures – clinical pathology			
Competency	Faculty (n = 84)	Stakeholders (n = 37)	Difference
Interpret the results of a gram stain	91%	91%	0%
Interpret the result of a culture and sensitivity	100%	100%	0%
Interpret the results of a skin scraping	92%	100%	+ 8%
Interpret the results of a complete blood count	100%	100%	0%
Interpret the results of a coagulation panel	94%	94%	0%
Interpret the results of a biochemical analysis	100%	100%	0%
Interpret the results of visual inspection of the urine	100%	97%	- 3%
Interpret the results of a chemical reagent strip	99%	100%	+ 1%
Interpret the results of sediment examination	95%	94%	- 1%
Interpret the results of a fecal flotation	97%	100%	+ 3%

Core Competencies

Domain - Communication

Domain	Learning Outcomes	Top Level Competencies	Competencies
Communication	2	2	8

Core Competencies

Domain – Communication

Demonstrate effective communication of diagnostic and therapeutic options to clients – client communication			
Competency	Faculty (n = 84)	Stakeholders (n = 37)	Difference
Identify reason/s for the consultation	95%	97%	- 2%
Establish rapport with client and animal taking account of particular communication needs	95%	97%	+ 2%
Discuss case progress with client	95%	100%	+ 5%
Perform follow-up phone calls	91%	97%	+ 6%
Write discharge instructions	97%	100%	+ 3%
Provide oral discharge instructions to client	96%	100%	+ 4%
Obtain written and verbal informed consent	95%	100%	+ 5%

Core Competencies

Domain - Public, environmental and population health

Domain	Learning Outcomes	Top Level Competencies	Competencies
Public, environmental and population health	4	5	19

Core Competencies

Domain – Public, Environmental and Population Health

Demonstrate knowledge and understanding of the veterinarian's role in maintaining and promoting public and animal population health – population health			
Competency	Faculty (n = 84)	Stakeholders (n = 37)	Difference
Inspect and evaluate a food production system for animal health, sanitation and general biosecurity problems	52%	45%	- 7%
Evaluate production unit environmental issues	44%	36%	- 8%
Demonstrate proficiency in disease outbreak investigation	60%	84%	+ 24%
Develop a population medicine-based disease preventive program	60%	68%	+ 8%
Develop a population-based nutritional program	37%	37%	0 %

Core Competencies

Domain – Public, Environmental and Population Health

Demonstrate knowledge and understanding of the veterinarian's role in maintaining and promoting public and animal population health-population health (continued)			
Competency	Faculty (n = 84)	Stakeholders (n = 37)	Difference
Establish a population-based reproductive or population control program	50%	58%	+ 8%
Establish a biosecurity program	45%	61%	+ 16%
Establish a population-based vaccination program	65%	81%	+ 16%
Establish a population-based control program for internal and external parasites	65%	81%	+ 16%
Develop isolation/quarantine plan	72%	84%	+ 12%
Discuss waste management	61%	68%	+ 7%

Core Competencies

Domain - Ethics

Domain	Learning Outcomes	Top Level Competencies	Competencies
Ethics	2	2	2

Core Competencies

Domain – Ethics

Demonstrate knowledge and understanding of ethical principles that guide decisions affecting individual and population health – ethical decisions			
Competency	Faculty (n = 84)	Stakeholders (n = 37)	Difference
Discuss ethical issue	92%	94%	+ 2%

Core Competencies

Domain – Problem Solving, Critical Thinking, Life-long Learning

Domain	Learning Outcomes	Top Level Competencies	Competencies
Problem solving, critical thinking, life-long learning	3	3	8

Core Competencies

Domain – Problem Solving, Critical Thinking, Life-long Learning

Demonstrate skills and tools necessary to promote life-long learning			
Competency	Faculty (n = 84)	Stakeholders (n = 37)	Difference
Understand and utilize basic themes of teaching and learning in own learning, and facilitate learning of others	78%	80%	+ 2%
Demonstrate a commitment to maintaining professional competence in response to the developing scientific field and professional demand	92%	100%	+ 8%
Recognize and work within personal limitations	85%	93%	+ 8%

Core Competencies

Domain - Professionalism

Domain	Learning Outcomes	Top Level Competencies	Competencies
Professionalism	2	2	4

Core Competencies

Domain – Professionalism

Work as part of a high-quality, professional healthcare team with the ability to provide and receive appropriate constructive criticism, suggestions, and feedback			
Competency	Faculty (n = 84)	Stakeholders (n = 37)	Difference
Work as part of a team to accomplish tasks	93%	90%	- 3%
Able to give feedback in a professional manner	93%	100%	+ 7%
Able to accept feedback in a professional manner	93%	100%	+ 7%

Core Competencies

Domain - Business

Domain	Learning Outcomes	Top Level Competencies	Competencies
Business	1	1	3

Core Competencies

Domain – Business

Demonstrate basic knowledge of small business management and economics - client			
Competency	Faculty (n = 84)	Stakeholders (n = 37)	Difference
Provide cost estimates for clients	91%	90%	- 1%
Calculate costs of procedures and diagnostics for clients	91%	90%	- 1%
Calculate client bill	84%	90%	+ 6%

Core Competencies

Correlation Coefficient between Faculty and Stakeholder Determinations ($r^2 = 0.91$)
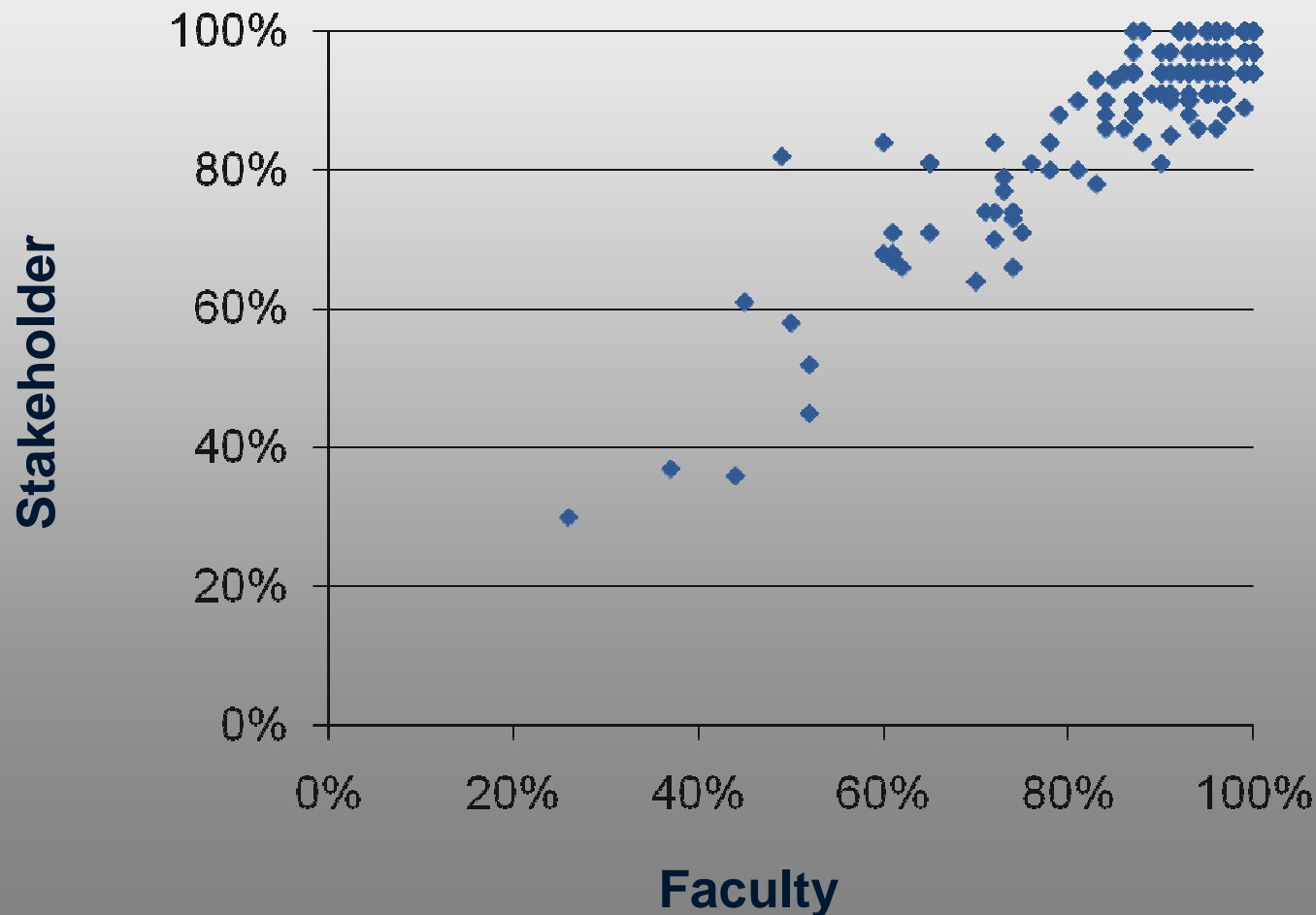
Core Competencies

Next Steps

- **Faculty committee to determine core competency level for all 4 groups**
- **If level set at >80% for both faculty and stakeholders for core competencies**

Domains	Learning Outcomes	Top Level Competencies	Competencies
7	21	33	193
7	21	30	172