

Spectrum of Care Learning Experiences



When revising or adding learning experiences to enhance students' preparation for spectrum of care (SOC) practice, you may benefit from the insights of colleagues who have already implemented different types of experiences in their programs. Learning from others can help you plan the logistics and anticipate potential challenges to implementing these experiences.

In this section, you will find detailed descriptions of example SOC learning experiences by veterinary educators showcasing innovative approaches they are already applying in the classroom, laboratory, clinics, and beyond to help students develop one or more of the eight SOC subcompetencies described in the SOC Education Model.

Featured Resources

WisCARES access to veterinary care, One Health clinical rotation

By Elizabeth E. Alvarez, Kelly Schultz, Jennifer Brooks, Simon Lygo-Baker, and Ruthanne Chun

Assessments that foster competence in spectrum of care

By Liz Armitage-Chan and Adrian Boswood

Spectrum of care longitudinal integrated clerkship

By Lauren A. Bernstein, Jennifer Glover, Lindsey Knox, Whitney Waldsmith, Debra Freedman, and Erin Burton

Navigating client preference for medical management of open pyometra in a canine patient: A communication exercise

By Ryane E. Englar and Teresa Graham Brett

A summary of "A unique spectrum of care tool provides a self-regulated learning opportunity and facilitates client communication"

By Ann Hohenhaus and David C. Provost

Using an on-demand, self-paced online course to facilitate a spectrum of care approach to practice

By Kristin Jankowski and Terry Spencer

A selection of additional resources on spectrum of care learning experiences

WisCARES Access to Veterinary Care, One Health Clinical Rotation



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SUMMARY

Wisconsin Companion Animal Resources, Education, and Social Services (WisCARES) is a University of Wisconsin program that provides basic veterinary medical care, housing support and advocacy, and other support services to pet owners who are low-income, currently experiencing or at risk of homelessness, or unable to pay for veterinary medical services needed to access housing.

WisCARES is a 2-week elective clinical rotation. It is designed to provide a practical, clinical experience, in which students take the lead on their cases by determining the diagnosis and treatment of general-practice preventative medicine and diseases of small animal species. The bulk of this rotation has a clinical emphasis and addresses cases through a spectrum of care (SOC) lens. Goals are building students' clinical diagnostic and surgical skills, communication skills, interdisciplinary teamwork, self-reflection, and cultural humility skills.

LEARNING OUTCOMES

DOMAIN OF COMPETENCE: Clinical Reasoning and Decision-Making

- Considers disease in context of whole animal and client.
- Presents a range of options to client.
- Considers euthanasia as a management option when appropriate.

DEMONSTRATES:

- Attends to patient welfare and client safety and comfort.
- Develops a financial estimate and obtains and documents informed consent.
- Uses clinical reasoning skills to integrate medical, ethical, legal, and economic factors as well as client desires to create a management/treatment plan.
- Explains treatment options to client and responds to questions.
- Discusses patient status and initial management plan (including euthanasia when warranted) with client and identifies client expectations.

ROUNDS AND ACTIVITIES:

- Access to care, SOC rounds
- Watch One Health video
- Reflective writing activity
- Social work rounds
- WisCARES access to care database activity

LEARNING EXPERIENCE DESCRIPTION

Wisconsin Companion Animal Resources, Education, and Social Services (WisCARES) is a University of Wisconsin program that provides basic veterinary medical care, housing support and advocacy, and other support services to Dane County pet owners who are low-income, currently experiencing or at risk of homelessness, or unable to pay for veterinary medical services needed for access to housing. The program focuses on keeping pets with their owners, preventing surrender to animal shelters, empowering people to care for their animals, providing housing resources, and aiding animals and their people in gaining access to the social support services and healthcare they need.

WisCARES is a 2-week elective clinical rotation at an Access to Care veterinary clinic. It is designed to provide a practical, clinical experience, in which students take the lead on their cases by determining the diagnosis and treatment of general-practice preventative medicine and diseases of small animal species. The bulk of this rotation has a clinical emphasis. Goals are building students' clinical diagnostic and surgical skills, communication skills, interdisciplinary teamwork, self-reflection, and cultural humility skills.

How Is WisCARES Different?

At WisCARES, we strive to provide a different sort of clinical experience for veterinary medical students—we want them to practice being doctors while still being supervised by a veterinarian! This means that students have primary case ownership of all their patients at WisCARES. There will always be a veterinarian on site to help support learners in developing their diagnostic and treatment plans.

Veterinarians discuss each case with students to check for comprehension of medical decision-making. This is also a time for students to relay any communication difficulties so we can discuss strategies for better adherence and comprehension on the client's part. Finally, veterinarians assist students in developing a plan that includes a spectrum of options and approve all final decisions around diagnostics and treatment. From there, the students guide the owners through decision-making, understanding diagnostic findings, and treatment plans. While heavily guided, students are not given all the answers.

This puts students in the driver's seat in a way that they are not otherwise accustomed to and helps them prepare to do this work on their own.

Veterinary Medical Appointments

The WisCARES clinic receives both scheduled and walk-in cases on Monday, Tuesday, Wednesday, and Friday. Typically, most students will oversee three to five cases a day, averaging about 1 hour per case (from intake to discharge). A patient check-in sheet will be prepared for all appointments and placed on the whiteboard

in the treatment area. Students should focus on one appointment or patient at a time. Students will review patient medical records prior to greeting clients. Students will discuss the reason for the visit and obtain a patient history. Students will perform physical exams and curate a financial estimate and medical treatment plan, and then discuss with the veterinarian instructor.

Every patient must be examined by a veterinarian on-site. Once the case is discussed with a veterinarian and the client approves the plan and cost, it can be implemented. Students will perform as many of the tasks as possible (e.g., vaccination, blood draw, nail trim). If the patient is stressed, anxious, or aggressive, students are advised to consult with a technician or veterinarian to determine the best way to proceed prior to removing the patient from the exam room. The goal for each appointment is for the student to lead the case and be the sole contact point for the client (meaning that the veterinarian will not directly interact with the client). Students oversee coordinating care (including sedation protocols as needed) and ensure that all plan items are completed satisfactorily. They are also responsible for ensuring that the patient's condition (especially postoperatively or postsedation) is appropriate for discharge.

Surgery and Procedures

If a patient needs a surgical procedure, the student will be provided the opportunity to perform it. A veterinarian will assist the student for the duration of the procedure; however, the student should still prepare for the procedure as if they were going to perform it without instruction—using books, videos, and resources available to them to determine the plan and approach. On average, students perform one to two procedures while on the rotation and will always have veterinary support during surgical procedures.

All the Extras

A lot goes into management of a patient outside of an appointment—students will be asked to complete thorough medical records, monitor for incoming diagnostic results, adjust plans based on lab work, and update owners accordingly after consulting with a supervising veterinarian.

Patient Records (Responsibilities)

Each patient needs a brief medical record Subjective, Objective, Assessment, Plan (SOAP) completed by the end of the day. SOAPs should be completed as soon as possible.

The Learning Experience Delivery

The learning experience at WisCARES includes structured and unstructured components. As with many clinical teaching environments, the daily schedule includes morning rounds, followed by patient receiving and procedures, with a late afternoon wrap-up of the day. Veterinary medical topics during morning rounds include accessible care/SOC rounds, flea and tick rounds, and IDEXX case

rounds. Other morning rounds topics are intended to increase students' awareness of and reflection on the human side (both self and other) of veterinary medicine and include: social work rounds (week 1: social determinants of health and poverty; week 2: self-care), reflective writing rounds, and communication rounds (week 1: review of core skills with discussion about client interactions; week 2: discussion about client interactions and reflection on how they intentionally worked on one chosen skill since week 1).

The initial evidence from early studies suggests that this community-based veterinary medical setting provides students with a beneficial learning opportunity. Student feedback has been positive, with stated outcomes being increased self-confidence, communication, and case management skills, along with the value of mentorship and building a strong team (Alvarez et al., 2020; 2021; 2022). Leading cases gives students greater appreciation for the need to understand client backgrounds and challenges faced, leading to enhanced learning outcomes (Alvarez et al., 2020; 2021; 2022).

We have experienced few challenges in implementing this learning experience. We host annual WisCARES curriculum retreats during which we review student evaluations of the rotation and discuss what changes to make, including how to balance time spent receiving cases, surgery, and dentistry with time spent processing these experiences. Over the years we have developed and refined the daily schedule, consisting of clinical work as well as "rounds" sessions, and prioritized opportunities for intentional discussions and debriefing.

MORE INFORMATION ABOUT THIS LEARNING EXPERIENCE

Alvarez, E. E., Gilles, W. K., Lygo-Baker, S., & Chun, R. (2020). Teaching cultural humility and implicit bias to veterinary medical students: A review and recommendation for best practices. *Journal of Veterinary Medical Education*, 47(1), 2–7. <https://doi.org/10.3138/jvme.1117-173r1>

Alvarez, E. E., Gilles, W. K., Lygo-Baker, S., Howlett, B., & Chun, R. (2021). How to approach cultural humility debriefing within clinical veterinary environments. *Journal of Veterinary Medical Education*, 48(3), 256–262. <https://doi.org/10.3138/jvme.2019-0039>

Alvarez, E., Lygo-Baker, S., Schultz, K., Gilles, W., & Chun, R. (2022). Veterinary and pharmacy students' expectations before and experiences after participating in an interdisciplinary access to care veterinary clinic, WisCARES. *Journal of Veterinary Medical Education*, 49(5), 610–617. <https://doi.org/10.3138/jvme-2021-0006>

Chun, R., Alvarez, E. L. E., Schultz, K., Brooks, J. W., & Galassi, G. (2023). Experiential learning that embraces One Health the Wisconsin way. *Journal of the American Veterinary Medical Association*, 261(10), 1564. <https://doi.org/10.2460/javma.23.07.0407>

SOC SUBCOMPETENCIES

- SOC Subcompetency 1.3.5. Integrates information about the patient with client circumstances to identify a range of appropriate care options and adjust the care plan.
- SOC Subcompetency 1.4.4. Offers a range of care options that are tailored to the unique circumstances of each patient and client.
- SOC Subcompetency 1.4.5. Facilitates client decision-making regarding care by presenting the costs, risks, benefits, and evidence base of care options.
- SOC Subcompetency 3.1.5. Provides a range of appropriate care options for animal populations that considers animal welfare, lifestyle, economics, societal interests (e.g., food animal industry, animal activism), and public and environmental health concerns.
- SOC Subcompetency 7.3.4. Acknowledges and considers the context of previous care decisions made by colleagues and clients.
- SOC Subcompetency 7.3.5. Reflects on one's own professional identity in relation to providing a spectrum of care.
- SOC Subcompetency 7.4.4. Pursues opportunities to expand skill set to offer a broader range of care options.
- SOC Subcompetency 8.1.4. Provides a range of care and payment options in a manner that fosters financial viability of the practice and a positive working environment.

SPECIES

- Canine/feline
- Occasional pocket pets/exotics are also seen

AFFILIATED COURSE

- Small Animal WisCARES Rotation 623 (Dept #), 675 (Course #), 010 (Section #)

TIMING

- Preclinical and clinical curriculum
- Year 4
- The rotation is created for students in year 4; however, opportunities for students to shadow, sign up for 1-week selective experiences (year 1, 2, 3), and obtain student worker paid employment at WisCARES (throughout the school year and over the summers) allows for students throughout the curriculum (and pre-vet curriculum) to participate.

DURATION

- Two weeks; however, VM4 students can sign up to take the rotation for 1 week or for more than one 2-week rotation over their clinical year.

LOCATION

- Clinical
- Field

ESTIMATED COST

- WisCARES' annual operating budget, including staff salaries, building rental, and all operating expenses, is around \$800,000. The clinic is funded through in-kind gifts from multiple industry partners, support from UW–Madison, revenue, and donations.

MATERIALS SHARING

- The reflective writing prompts, YouTube links in Canvas, and citations for the SOC standard of care papers are available upon request.

RECOMMENDED CITATION

Alvarez, E. E., Schultz, K. K., Brooks, J. W., Lygo-Baker, S., & Chun, R. (2025). WisCARES access to veterinary care, One Health clinical rotation. In AAVMC Spectrum of Care Initiative Task Force, H. N. Fedesco, & J. E. Brodsky (Eds.), *Enhancing spectrum of care preparation in veterinary education programs: An implementation strategies guide* (pp. 77–80). American Association of Veterinary Medical Colleges. <https://doi.org/10.17605/OSF.IO/AHWQE>

REFERENCES

Brown, C. R., Garrett, L. D., Gilles, W. K., Houlihan, K. E., McCobb, E., Pailler, S., Putnam, H., Scarlett, J. L., Treglia, L., Watson, B., & Wietsma, H. T. (2021). Spectrum of care: More than treatment options. *Journal of the American Veterinary Medical Association*, 259(7), 712–717. <https://doi.org/10.2460/javma.259.7.712>

Fingland, R. B., Stone, L. R., Read, E. K., & Moore, R. M. (2021). Preparing veterinary students for excellence in general practice: building confidence and competence by focusing on spectrum of care. *Journal of the American Veterinary Medical Association*, 259(5), 463–470. <https://doi.org/10.2460/javma.259.5.463>

Hemba, K. E., & Plumb, J. (2011). JeffHOPE: The development and operation of a student-run clinic. *Journal of Primary Care & Community Health*, 2(3), 167–172. <https://doi.org/10.1177/2150131911404239>

Jordan T., & Lem, M. (2014). One health, one welfare: Education in practice veterinary students' experiences with community veterinary outreach. *The Canadian Veterinary Journal [La revue veterinaire canadienne]*, 55(12), 1203.

King, E., Mueller, M., Wolfus, G., & McCobb, E. (2021). Assessing service-learning in community-based veterinary medicine as a pedagogical approach to promoting student confidence in addressing access to veterinary care. *Frontiers in Veterinary Science*, 8, 644556. <https://doi.org/10.3389/fvets.2021.644556>

Kreisler, R. E., Stackhouse, N. L., & Graves, T. K. (2020). Arizona veterinarians' perceptions and consensus regarding skills, knowledge, and attributes of day one veterinary graduates. *Journal of Veterinary Medical Education*, 47(3), 365–377. <https://doi.org/10.3138/jvme.1117-166r2>

Powell, L., Walsh, M., Reinhard, C. L., Jankowski, K., & Watson, B. (2022). One Health clinic promotes veterinarian-client trust among underserved pet owners and provides learning opportunities for veterinary students. *Journal of the American Veterinary Medical Association*, 260(8), 931–939. <https://doi.org/10.2460/javma.21.06.0274>

Simpson, S. A., & Long, J. A. (2007). Medical student-run health clinics: Important contributors to patient care and medical education. *Journal of General Internal Medicine*, 22, 352–356. <https://doi.org/10.1007/s11606-006-0073-4>

Stull, J. W., Shelby, J. A., Bonnett, B. N., Block, G., Budsberg, S. C., Dean, R. S., Dicks, M. R., Forsgren, B. W., Golab, G. C., Hamil, J. A., Kass, P. H., King, L. J., Lund, E. M., Maddux, M. L., McFarland, J. M., McKenzie, B. A., Moyer, M. R., Olson, P. M., & Wittum, T. E. (2018). Barriers and next steps to providing a spectrum of effective health care to companion animals. *Journal of the American Veterinary Medical Association*, 253(11), 1386–1389. <https://doi.org/10.2460/javma.253.11.1386>

Tilleman, J., Coover, K. L., Blythe, E., Doll, J., O'Brien, K., & Haddad, A. R. (2012). Service-learning incorporated into early practice experience. *Currents in Pharmacy Teaching and Learning*, 4(4), 292–297. <https://doi.org/10.1016/j.cptl.2012.07.001>

Assessments that Foster Competence in Spectrum of Care



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SUMMARY

Can we teach spectrum of care (SOC) competence if we don't assess it? Assessing for SOC requires more than questioning how to solve clinical problems alongside contextual factors (e.g., clients' beliefs, goals, and needs). Additional necessary competences include reflection and viewing practice as complex (multiple valid solutions that affect key players in different ways), not simple ("gold standard" answers). These are progressively developed, requiring an assessment approach that mirrors their progression. At the Royal Veterinary College (RVC) in London, SOC competences are assessed developmentally, using single best answer (e.g., multiple choice) when concepts are first introduced, then progressing to reflective essays, case reports, and SOC exam questions. Exam questions are designed to be resolved in multiple different ways, and for case reports and reflections, cases and experiences vary widely. Assessment criteria based on critical analysis rather than ideal answers represent one method of achieving assessment reliability.

LEARNING OUTCOMES

In combination, the assessments for the course are blueprinted to the following learning outcomes:

- Make decisions that balance the conflicting needs of the various key players in veterinary practice—patient, client, business, public, profession, society—based on the critical evaluation of current best evidence.
- Recognize that not all veterinarians will make the same decisions, and that even for an individual, decision-making will depend on context.
- Communicate effectively to achieve shared decision-making and successful implementation of decisions.

- Work effectively as a member of an interprofessional team to optimize the successful delivery of veterinary care.
- Predict the risks and challenges of negotiated decisions, monitor and reflect on outcomes, and make plans for managing follow-up care.
- Apply cultural sensitivity to develop diversity and inclusivity within professional problem-solving and decision-making.

LEARNING EXPERIENCE DESCRIPTION

Single best answer assessments (SBAAs) are valuable because of their feasibility: they provide a simple way to assess knowledge with an easily defined answer and enable rapid feedback to students.

However, SBAAs encourage the belief that there is always one ideal answer that applies to every patient regardless of context. Not only does this foster an assumption that the only valuable clinical approach is the "gold standard," it also inappropriately implies that clinical practice involves simple right/wrong decision-making. In reality, constructing a clinical plan is "an iterative, reflective process that requires synthesis of medical, ethical, legal, and economic factors, as well as knowledge of the strengths and limitations of the client, veterinarian, team and facilities" (Competency-Based Veterinary Education, 2024).

Open-ended assessments (OEA) allow students to explore the different ways to solve a clinical problem and to explain how problem-solving is informed by contextual elements such as finances and clients' logistical limitations or cultural beliefs. OEAs include set exam questions, for which every student may answer the same question differently, and students' reflective essays, in which they explore their own experiences of situations that can be resolved or managed in different ways. For such assessments, rather than a standardized or "perfect" model answer, grading criteria must therefore allow for multiple different "correct" answers. Additional methods need to be applied to achieve examiner reliability when individual pieces of work may be very different.

For students, acquiring the necessary critical and contextual thinking for these assessments is a developmental process,

and the assessment approach should reflect this. When new content and concepts are first introduced, students will benefit from initially applying their content knowledge and practicing problem-solving using a simpler SBAA. Students are often more familiar with SBAA than OEA types; as more complex OEAs are introduced, instructors thus need to familiarize them with assessment criteria that are based not on the inclusion of factually correct information, but on the approach taken to resolve the scenario.

The assessment strategy within the RVC’s BVetMed degree applies these principles in an assessment approach that builds SOC competence in stages. Early in the curriculum, SBAA are used to assess foundational principles and ensure the requisite knowledge for more complex problem-solving. Students also write formative reflective essays; these provide early exposure to OEA formats, enable feedback on the critical application of theory to context, and familiarize them with assessment criteria.

During the latter years, the emphasis shifts to OEAs; instructors use a combination of summative reflective essays, reflective case reports, and unseen exam questions on SOC scenarios. Unseen exam questions are set questions delivered and answered under exam conditions that integrate clinical and contextual elements (an example is provided at the end of this section). A clinical scenario is presented, with initial grades awarded for demonstration of clinical reasoning. Authentic contextual information is provided within the question, which is intended to replicate common scenarios in general practice.

Examples may include clients having limited finances, lacking access to transport, or preferring “not to put their pet through a lot.” The student is then typically asked to articulate how they would decide what to do, with the clinical scenarios structured such that euthanasia, a spectrum of clinical plans, or facilitation of clinical care (such as problem-solving travel logistics) may all represent valid solutions. Grades are awarded for students demonstrating ability to reason through various valid solutions, engaging with the needs of the significant key players, and articulating the way clinical plans would be discussed and negotiated with the client.

Reflective case reports are structured similarly, with the student selecting cases from their own experience. These in-course assignments initially prompt exploration of clinical reasoning, and then analysis of the influence of contextual factors, the ways that communication was used (e.g., to negotiate decision-making), and the impact of different perspectives on clinical care.

While this type of assignment inevitably increases grading load compared to SBAA formats, they are feasible if instructors judiciously apply assessments to focused high-stakes milestones, such as entry to rotations (summative, graded reflective essay) and entry to the profession (summative, graded integrated clinical and professional problem-solving). At other time points, instructors can assess case reports using a simplified version of the grading scheme (**Table 1**), rewarding critical analysis and contextual application of knowledge, but in a simplified “checkbox” format.

Some might argue that grading consistency would be facilitated if a uniform capstone experience was created, in which all students could engage in decision-making and subsequent reflection. However, competence in SOC practice requires confidence in working with uncertainty and in negotiating decisions with the level of independence required to work in a context of multiple valid solutions. Asking students to select their own experiences and cases to use for summative assessments helps to build this competence beyond what could be achieved by facilitating a shared activity. When writing a summative reflective essay prior to rotations, students often reflect on experiences working on farms, which is a compulsory component of the preclinical curriculum in the UK. However, the focus of their reflection is not restricted, and students also often choose to reflect on communication or ethical issues they have experienced in their wider lives.

This strategy scaffolds a developmental approach to SOC competence, using assignments that not only explicitly assess clinical reasoning integrated with contextual or professional complexity, but also assess reflection, critical analysis, and independent decision-making. A final criterion for evaluating assessment quality, face validity to students (i.e., the extent that students perceive the assignment to be valuable and in alignment with competence in veterinary practice) is also important. Our students typically arrive with little prior experience of being assessed in this way. High-achieving essays can vary significantly, particularly as students select the experiences and cases upon which to focus. Peer-to-peer comparisons, particularly among students who subscribe to a dualistic viewpoint (a belief that there is a single best way of answering the question) can lead to difficulty understanding the difference between an essay that has been judged as high-achieving and one that is at borderline pass level. When program leaders are implementing an SOC assessment strategy, they therefore must engage and educate not only faculty, but also students in the validity and criteria for the assessment. When this is done,

Table 1. Example of the institutional common grading scheme used for SOC written assessments

Pass Level	Descriptive thinking: satisfactory grasp of important concepts, analysis of which are supported by facts
Distinction Level	Critical thinking: thorough grasp of concepts with evidence of original thinking, i.e., references, factual knowledge, or both have been contextualized and viewed according to multiple perspectives to inform the analysis and decisions made

students' feedback demonstrates they can identify constructive alignment not only with new graduate clinical competence, but also with the personal skills they will need to work resiliently and humanely in a diverse professional context.

SOC SUBCOMPETENCIES

- SOC Subcompetency 1.3.5. Integrates information about the patient with client circumstances to identify a range of appropriate care options and adjust the care plan.
- SOC Subcompetency 1.4.4. Offers a range of care options that are tailored to the unique circumstances of each patient and client.
- SOC Subcompetency 1.4.5. Facilitates client decision-making regarding care by presenting the costs, risks, benefits, and evidence base of care options.
- SOC Subcompetency 3.1.5. Provides a range of appropriate care options for animal populations that considers animal welfare, lifestyle, economics, societal interests (e.g., food animal industry, animal activism), and public and environmental health concerns.
- SOC Subcompetency 7.3.4. Acknowledges and considers the context of previous care decisions made by colleagues and clients.
- SOC Subcompetency 7.3.5. Reflects on one's own professional identity in relation to providing a spectrum of care.
- SOC Subcompetency 7.4.4. Pursues opportunities to expand skill set to offer a broader range of care options.
- SOC Subcompetency 8.1.4. Provides a range of care and payment options in a manner that fosters financial viability of the practice and a positive working environment.

SPECIES

- Canine/feline
- Exotics
- Equine
- Food animal

AFFILIATED COURSE

- Principles of Veterinary Practice, a 5-year longitudinal course that runs through the BVetMed program at the Royal Veterinary College

TIMING

- Preclinical and clinical curriculum
- Years 1–5

DURATION

- Assessments are embedded throughout the 5-year BVetMed program.

LOCATION

- Classroom
- Clinical
- Field
- Assessments incorporate classroom/lecture-based content and reflective analysis of experiences during clinical rotations and external placements on farms and in veterinary practices

MATERIAL SHARING

The following materials can be provided:

- Some examples of exam questions: for example, those that are currently made available to students to aid their study.
- Complete grading scheme, available on the institutional website.

EXAMPLE OF AN OPEN-ENDED ASSESSMENT (OEA): UNSEEN EXAM QUESTION

Ms. Alli brings in her mother's 12-year-old cockapoo Ginger, who has been off her food for 3 days. Ms. Alli visits her mother once a week, and this morning she noticed Ginger was very weak and struggling to get up. Her mother cannot remember when Ginger last went outdoors, and the dog walker has not visited this week due to the holidays. On physical exam you notice that Ginger is very pale, with cold paws and weak peripheral pulses. Her heart rate is 180 and her abdomen is tense and distended. Thoracic auscultation reveals normal airway sounds and a grade III/VI soft systolic murmur. Ginger's last visit to your practice was 18 months ago when she received some treatment (ear cleaner) for an itchy ear; at that time the same murmur had been identified on physical examination.

Clinical reasoning and decision-making

1. Write a prioritized clinical problem list for Ginger
2. Present and explain your proposed clinical plan (both the initial treatment and diagnostic plans)

Guidance for graders: This is relatively "closed-ended," in that there is a standardized way to reason the approach to emergency care of this patient, and the prioritized problem list should place greater emphasis on the problems that require immediate attention. The

students would also be expected, at a pass level, to recognize that stabilization of the apparent hypovolemia should precede diagnostic evaluation of the cause of the acute clinical signs. Using the grading scheme (Table 1), a description of appropriate clinical care would achieve a passing grade, and higher-level analysis of the patient and explanation of the clinical plan (for example, titration of intravenous fluids to clinical improvement and how the effect of the cardiac murmur would influence clinical care) would be awarded a higher-level grade.

After your initial treatment, Ginger looks brighter and is walking around her kennel. You and Ms. Alli discuss continuing your clinical plan; however, in the meantime she has had a chance to talk to her mother, who does not wish to pursue any further veterinary care. She is opposed to euthanasia and interventional care and would like Ginger to come home.

You try to explain Ginger's clinical needs, but Ms. Alli becomes visibly frustrated at this point, and angrily accuses you of only wanting to make more money. She refuses to provide consent for any further veterinary care and says she would like to pay for the treatment performed so far and take Ginger home.

Professional reasoning and decision-making, incorporating contextual elements

1. List the feasible actions you could now take
2. Explain what you will do and the reasons for your approach, including an analysis of the effect of these actions on each of the important interested parties in this situation

Guidance for graders: This section is more open-ended, as students can make different decisions about the most appropriate course of action. For a pass-level answer, students would list several feasible options and provide a decision that does not compromise animal welfare beyond acceptable levels, and addresses professional and legal expectations surrounding consent and pet ownership (these may vary by country). A higher-level grade (again, with reference to Table 1) does not necessarily provide more options, but demonstrates more in-depth analysis of the situation. This particularly includes recognizing that any decisions will have both positive and negative effects on the important interested parties (the patient, client, client's mother, practice reputation/finances, and colleagues); there is thus no single best answer, and risks will need to be managed, either by taking appropriate actions (such as arranging follow-up patient assessment if the decision is to send Ginger home), or by explaining how high-level communication around negotiating the decision would be achieved. Students may focus more on communication, ethics, or reasoning through the decision (and are unlikely to be able to cover everything within a timed examination), and so grades are awarded for the depth of analysis and problem-solving of the situation, rather than expecting detailed coverage of every aspect.

RECOMMENDED CITATION

Armitage-Chan, E., & Boswood, A. (2025). Assessments that foster competence in spectrum of care. In AAVMC Spectrum of Care Initiative Task Force, H. N. Fedesco, & J. E. Brodsky (Eds.), *Enhancing spectrum of care preparation in veterinary education programs: An implementation strategies guide* (pp. 81–84). American Association of Veterinary Medical Colleges. <https://doi.org/10.17605/OSF.IO/AHWQE>

REFERENCES

Armitage-Chan, E., & Reissner, S. (2020). How do veterinary students engage when reflecting on their development towards being veterinary surgeons? *Veterinary Record*, 187(9), e77. <https://doi.org/10.1136/vr.105692>

Competency-Based Veterinary Education (2024, April). CBVE entrustable professional activities (EPAs). <https://cbve.org/entrustable-professional-activities>

Cooper, M., Sornalingam, S., & Heath, J. (2022). The Medical Licensing Assessment and the therapeutic illusion. *The British Journal of General Practice*, 72(725), 564. <https://doi.org/10.3399/bjgp22x721229>

Gardner, N. P., Gormley, G. J., & Kearney, G. P. (2023). Is there ever a single best answer (SBA): Assessment driving certainty in the uncertain world of GP? *Education for Primary Care*, 34(4), 180–183. <https://doi.org/10.1080/14739879.2023.2243447>

Silva-Fletcher, A., May, H., Magnier, K. M., & May, S. A. (2014). Teacher development: A patchwork-text approach to enhancing critical reflection in veterinary and para-veterinary educators. *Journal of Veterinary Medical Education*, 41(2), 146–154. <https://doi.org/10.3138/jvme.0813-110r>

Warman, S. M., Armitage-Chan, E., Banse, H., Khosa, D. K., Noyes, J. A., & Read, E. K. (2023). Preparing veterinarians to practice across the spectrum of care: An integrated educational approach. *Advances in Small Animal Care*, 4(1), 171–183. <https://doi.org/10.1016/j.yasa.2023.04.004>

Spectrum of Care Longitudinal Integrated Clerkship



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SUMMARY

The University of Minnesota's Spectrum of Care Longitudinal Integrated Clerkship is a 6-week elective clinical rotation designed to facilitate fourth-year students' integration of spectrum of care (SOC) practices into various small animal clinical settings through a tailored experiential program with real-time mentoring, feedback, and support. As with clinical rotations in medical schools (1–3), students act as primary clinicians in University of Minnesota–partnered clinics, following a selected patient panel of preventive care, urgent care, geriatric patient care, and common chronic disease treatment, as offered by the specific clinic. Longitudinal Integrated Clerkship is described as follows:

“Clerkship” refers to the practice of medicine by medical students during their final year(s) of study; “longitudinal” applies to a long-term clinical clerkship usually of one full academic year; and “integrated” describes continuous and concurrent community and hospital clinical experiences for each learner. (1)

Given the inaugural nature of this veterinary learning experience and current college requirements for students' final clinical year, the 2024 Spectrum of Care Longitudinal Integrated Clerkship was abbreviated to 6 weeks instead of 1 year. We have preserved the terminology to align with similar experiences described in medical literature.

Standard clinical rotations at the University of Minnesota are 2 weeks long and held in the teaching hospital. Students take part in 22 weeks of required core rotations in medicine, surgery, necropsy, clinical pathology, anesthesiology, public health, and radiology. Students are also required to complete several 2-week, track-specific rotations, elective rotations, and off-campus externships. The Spectrum of Care Longitudinal Integrated Clerkship fulfills one Primary Care rotation, one Community Medicine rotation (Primary Care alternative), and one elective rotation (small animal clinics). With the exception of off-campus externships, students do not have concurrent community experiences as they do during the Spectrum of Care Longitudinal Integrated Clerkship. One-on-one mentoring, case management autonomy, and community engagement are all unique experiences provided in the clerkship.

LEARNING OUTCOMES

The primary learner outcome of the Longitudinal Integrated Clerkship is to educate veterinary medical students in facilitating and delivering a spectrum of quality medical care. The focus is on lowering barriers to accessible care, respecting and celebrating differences in culture, and promoting quality of life in both humans and animals in various settings. The core principles and associated domains of competence include the following:

1. Graduates triage and prioritize care based on varied scenarios and within the resources available to provide individual animal care (clinical reasoning and decision-making).
2. Graduates discuss preventive medicine and urgent care options that are supported for each family (communication).
3. Graduates demonstrate client-centered communication in a culturally relevant, humble, and competent context (cultural and community engagement).
4. Graduates build connections with interest groups to explore inclusive and respectful partnerships (collaboration).
5. Graduates reflect on their own identities and values and how these influence clinical decision-making and client communication (professionalism, professional identity, and structural competency).

6. Graduates seek the resources to identify and create best practices in the emerging field of community medicine while committing to share knowledge and subject-matter expertise throughout their peer groups (scholarship).

LEARNING EXPERIENCE DESCRIPTION

Students interested in SOC apply for the Longitudinal Integrated Clerkship at the end of their second year. Application questions include: 1) describe previous experiences with community medicine, access to care, and SOC, and 2) explain how participating in the Longitudinal Integrated Clerkship will help reach career goals. Faculty and staff review applicants, and a cohort of six to eight students is accepted. The Longitudinal Integrated Clerkship is offered once a year in the spring semester of the cohort's fourth year. The timing of the clerkship ensures that participants have completed at least one Primary Care and one Small Animal Internal Medicine rotation at the University of Minnesota's teaching hospital. Students participate in cohort meetings with Longitudinal Integrated Clerkship faculty and staff before the start of the event to build group cohesion, review expectations, and develop mentoring/coaching agreements.

Clinical Components

- Two weeks at the Animal Humane Society Veterinary Center, a nonprofit primary care clinic with a tiered pricing structure located in an underserved neighborhood. In their first week (Week A), students see fewer cases with longer appointment times, and integrate key skills such as relational medicine, trauma-informed care, and interdisciplinary collaboration with social workers. Approximate Week A caseload: 25 cases per week or six to seven cases per student per week. In their second week (Week B), students build on these skills with more cases and shorter appointment times, balancing both relationship-building elements and effective case management.
- Approximate Week B caseload: 40 cases per week or 10 cases per student per week. One university faculty veterinarian and one university-certified veterinary technician who are trained in the clinic policies and protocols directly oversee and mentor the students during these 2 weeks.
- One week at Access Veterinary Care, a for-profit urgent care clinic that manages a variety of small animal cases and uses a variety of financing mechanisms. During this week, students see a high case volume and manage medical, surgical, and emergency cases. Approximate caseload: 30-48 cases per week or 15-24 cases per student per week. One university faculty veterinarian and one university-certified veterinary technician, each of whom is trained in the clinic policies and protocols, oversee the students during this week. The practice owner, who is not affiliated with the university, participates in rounds discussions, and students have the opportunity to shadow him and staff veterinarians.
- One week at one of Animal Humane Society's shelter locations, performing high-quality high-volume spay/neuter, managing shelter medicine cases, learning about public health, and understanding the role this shelter plays in surrender prevention. Approximate caseload: 30 cases per week or 15 cases per student per week. One university faculty veterinarian is on site to provide support for students and shelter partners, but one shelter veterinarian and two shelter veterinary interns provide direct oversight of students' surgeries and case management.
- One week at a Student Initiative for Reservation Veterinary Services field clinic. This organization is a field hospital-style, student-run organization providing free spay/neuter and wellness services to pets in Native Nations in Minnesota and South Dakota. Longitudinal Integrated Clerkship students' duties include triage, high-volume vaccine appointments, in-depth case management, and teaching junior veterinary students. Approximate caseload: 150-175 cases per week or 18-21 cases per student per week. All three university faculty veterinarians and one university-certified veterinary technician are on site during the clinic, but one primary faculty veterinarian provides direct oversight of students.
- **Note:** All students attend the Student Initiative for Reservation Veterinary Services field clinic at the same time. Students rotate through Animal Humane Society Veterinary Center, Access Veterinary Care, and Animal Humane Society shelter clinics at different times. A maximum of four students attend the Animal Humane Society Veterinary Center at a time. A maximum of two students attend Access Veterinary Care and Animal Humane Society clinics at a time.

Nonclinical Components

- One week dedicated to collaborating with a community organization to understand the interconnected nature of community challenges and propose solutions to structural One Health challenges.
- Daily topic rounds led by faculty veterinarians during the clinical weeks at the Animal Humane Society Veterinary Center and Access Veterinary Care. Topics include veterinary social work, kitten/puppy wellness, end of life/quality of life, and managing expensive emergent conditions such as diabetic ketoacidosis. The purpose of these rounds is to provide didactic-style learning around common situations or conditions expected during the clerkship.
- Daily end-of-day case rounds led by students during the clinical weeks at the Animal Humane Society Veterinary Center, Access Veterinary Care, and Student Initiative for Reservation Veterinary Services. The purpose of these rounds is to encourage peer-led teaching around students' own case management, including the SOC options presented and client communication. These are in-depth, complex cases that require creative problem-solving in resource-limited settings.

- Weekly cohort seminar discussions led by Longitudinal Integrated Clerkship faculty and staff that focus on the six core learning outcomes described above (clinical reasoning and decision-making; communication; collaboration; cultural humility and community engagement; scholarship; professionalism, professional identity, and structural competency). Seminars include pre-session readings, didactic-style lectures, and group discussion. An example of a seminar is described below:
 - Prior to the Communication seminar, students are required to watch a video about how clients make veterinary decisions and read a paper on SOC and redefining the “gold standard.”
 - During the Communication seminar, students engage in faculty-led discussions about the prework and are asked to share communication strategies in delivering SOC, explain different communication styles of clients, and explore shared decision-making strategies.
 - Faculty also deliver a presentation on business models in access to care and SOC. To reinforce the concepts learned in the presentation, students create a communication plan presenting a business model to various audiences.
- One-on-one mentoring in which one faculty member meets with each student individually every other week in semistructured meetings focused on progress towards students’ self-identified clinical skills and client communication goals. Additional one-on-one mentoring involves direct observation of and feedback on medical, surgical, technical, and communication skills.

Assessments

- Instructor feedback provided both in real time and through a college-wide tool that assesses specific American Association of Veterinary Medical College Competency-Based Veterinary Education Entrustable Professional Activities.
- Client feedback through pet owner surveys completed immediately following their appointment.
- Accurate, thorough, and efficient completion of medical records.
- Completion of an SOC case report that includes literature to support the evidence-based care plan offered.
- Completion of a project and presentation following the week spent collaborating with a community organization; the project may include a policy brief, proposal for a grassroots project, or outreach plan to mitigate barriers to care or structural One Health issues.

BENEFITS OF THE LEARNING EXPERIENCE

Existing medical literature describes the following benefits of Longitudinal Integrated Clerkship clinical experiences:

- continuity of clinical supervision
- continuity of care
- student–instructor relationships
- improved trust between patients and physicians (1)

This version of the Spectrum of Care Longitudinal Integrated Clerkship ran February 19 through March 29, 2024. At the time of writing, student evaluations of the clinical experience are not yet available. The instructors are currently building a quantitative and qualitative monitoring and evaluation plan with an external evaluation expert to understand students’ perspectives on such topics as diversity of experience, caseload in comparison to other rotations, relationship-building with clients and faculty, mentoring, surgical opportunities, and community engagement. This plan aims to also follow these students into practice and learn about their SOC preparedness and competency.

CHALLENGES AND SOLUTIONS

Designing the first two Longitudinal Integrated Clerkship learning experiences (2024 and 2025) has required the instructor team to plan schedules, activities, and assessments several years in advance. Without having previous veterinary Longitudinal Integrated Clerkship opportunities to draw insight and inspiration from, it has been challenging to anticipate learners’ needs, expectations of non–university-affiliated partners, and metrics of a successful learning experience. We have consulted with other University of Minnesota medical training organizations who have developed and implemented Longitudinal Integrated Clerkship programs to understand best practices and challenges.

SOC SUBCOMPETENCIES

- SOC Subcompetency 1.3.5. Integrates information about the patient with client circumstances to identify a range of appropriate care options and adjust the care plan.
- SOC Subcompetency 1.4.4. Offers a range of care options that are tailored to the unique circumstances of each patient and client.
- SOC Subcompetency 1.4.5. Facilitates client decision-making regarding care by presenting the costs, risks, benefits, and evidence base of care options.
- SOC Subcompetency 3.1.5. Provides a range of appropriate care options for animal populations that considers animal welfare, lifestyle, economics, societal interests (e.g.,

food animal industry, animal activism) and public and environmental health concerns.

- SOC Subcompetency 7.3.4. Acknowledges and considers the context of previous care decisions made by colleagues and clients.
- SOC Subcompetency 7.3.5. Reflects on one’s own professional identity in relation to providing a spectrum of care.
- SOC Subcompetency 7.4.4. Pursues opportunities to expand skill set to offer a broader range of care options.
- SOC Subcompetency 8.1.4. Provides a range of care and payment options in a manner that fosters financial viability of the practice and a positive working environment.

SPECIES

- Canine/feline

AFFILIATED COURSE

- College of Veterinary Medicine 6991 Spectrum of Care Longitudinal Integrated Clerkship

TIMING

- Clinical Curriculum
- Year 4

DURATION

- 6 weeks plus pre–Longitudinal Integrated Clerkship meetings.

LOCATION

- Classroom
- Clinical
- Field
- Shelter
- Community organizations

ESTIMATED COST

- The expected cost for the SOC Learning Experience described is primarily faculty and staff effort. The costs of those efforts will vary depending on expertise level and time. A new program can expect 20%-30% DVM and 5%-10% veterinary technician effort to account for project management, mentorship, clinical supervision, and other programmatic needs. Below is an example of our program’s effort breakdown. This University of Minnesota SOC Learning Experience is currently funded by an external grant for the first 3 years. Note: accommodation at Student Initiative for Reservation Veterinary Services (SIRVS) is paid for by the community, and students pay their own mileage for all other experiences. We did not include the costs of the evaluation component of this experience.

MATERIALS SHARING

- Syllabus is available in the SOC Implementation Strategies Guide repository on [AAVMC Learn](#).
- Seminar discussion materials are available on a case-by-case basis.

Table 1. Estimated Cost

ITEM	ESTIMATED COST OR FTE OVER 3 YEARS	NOTES
1 DVM faculty	10%	Grant PI; clinical supervisor
1 DVM faculty	5%	Clinical supervisor
1 DVM faculty	5%	Clinical supervisor
1 staff CVT	5%	
1 temp CVT	5%	
SIRVS expenses	\$5,200	Fleet van, mileage for those not driving in van; per diem for personnel and students
Estimated total cost	\$45,000-\$50,000	Includes salary, fringe, and experiential education costs

RECOMMENDED CITATION

Bernstein, L. A., Glover, J., Knox, L., Waldsmith, W., Freedman, D., & Burton, E. (2025). Spectrum of care longitudinal integrated clerkship. In AAVMC Spectrum of Care Initiative Task Force, H. N. Fedesco, & J. E. Brodsky (Eds.), *Enhancing spectrum of care preparation in veterinary education programs: An implementation strategies guide* (pp. 85–89). American Association of Veterinary Medical Colleges. <https://doi.org/10.17605/OSF.IO/AHWQE>

REFERENCES

- Hudson, J. N., Poncelet, A. N., Weston, K. M., Bushnell, J. A., & A Farmer, E. (2017). Longitudinal integrated clerkships. *Medical Teacher*, *39*(1), 7–13. <https://doi.org/10.1080/0142159X.2017.1245855>
- O'Brien, B. C., Poncelet, A. N., Hansen, L., Hirsh, D. A., Ogur, B., Alexander, E. K., Kraput, E., & Hauer, K. E. (2012). Students' workplace learning in two clerkship models: A multi-site observational study. *Medical Education*, *46*(6), 613–624. <https://doi.org/10.1111/j.1365-2923.2012.04271.x>
- Poncelet, A. N., Mazotti, L. A., Blumberg, B., Wamsley, M. A., Grennan, T., & Shore, W. B. (2014). Creating a longitudinal integrated clerkship with mutual benefits for an academic medical center and a community health system. *The Permanente Journal*, *18*(2), 50. <https://doi.org/10.7812/TPP/13-137>

Navigating Client Preference for Medical Management of Open Pyometra in a Canine Patient: A Communication Exercise



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SUMMARY

Historically, standard of care for case management of canine pyometra was ovariohysterectomy. However, medical management can also be successfully applied to canine patients that present with open pyometra, and may be preferred by clients who wish to preserve their dog's reproductive function. Explore how this simulated client encounter challenges students to outline medical management plans for a canine patient at the client's request, even if their default is to recommend surgical correction. Such reflective practice tasks them to consider the lens through which they are operating, as well as any underlying explicit or implicit bias towards breeders. Students learn to question the evidence base that underlies their recommendations as well as how to partner with a client who makes a different decision than we might.

LEARNING OUTCOMES

1. Identify your gut reaction to the client's request that canine patient Milonga be medically managed for open pyometra.
2. Move from reaction to response as you explore the client's request for an alternative approach to treatment.
3. Explore the client's concerns about ovariohysterectomy and elicit the client's perspective to find out why breeding Milonga is so important to them.
4. Offer medical management of open pyometra as a viable alternative to surgical sterilization.

LEARNING EXPERIENCE DESCRIPTION

All simulated client encounters take place at the Health Science Innovation Building (HSIB) in partnership with Interprofessional Clinical and Professional Skills Center (iCaPS) staff. HSIB offers 30 simulated patient–human healthcare examination rooms outfitted with the capacity for real-time audiovisual capture via CAE Learning Space software. Students are randomly assigned to a date/time slot at HSIB to complete each simulated client encounter. All simulated client encounters are scripted by a course coordinator, Ryane Englar; members of the community recruited and hired by iCaPs staff are then trained in partnership between the Professional Skills faculty and the iCaPs team.

"Milonga" is the 12th simulated client encounter out of a total of 30 in which students participate over six consecutive semesters (2 preclinical years). We are transparent with students that the primary goal of the simulation is to engage in a communication exercise. We provide students with supplemental materials containing the knowledge they need to succeed.

Prior to the simulated encounter, instructors prepare prework that students are expected to complete through the university's D2L online learning platform for the affiliated course, for a completion grade, prior to the simulated encounter. They are tasked to outline their baseline knowledge concerning case management plans for canine pyometra as well as their assumptions, perspectives, and prior experiences surrounding best practices. Prework also requires learners to proactively consider reasons why clients may prefer one method of management over the other (e.g., medical versus surgical) and what their gut reactions to their voiced preference may be. In addition, the prework introduces students to the simulated client encounter in the form of a "door chart" outlining the signalment of the patient, the client's name, and the presenting complaint. Students have access to this prework 2 weeks before the encounter. Completion of prework for Milonga contributes 3% towards the learner's final course grade.

Students also engage in a 90-minute required on-site in-class session that explores strategies for management of canine pyometra 2 weeks prior to the encounter. This in-class session introduces the evidence base for medical management of open pyometras and tasks students to engage in role-play with peers,

with assigned veterinarian and client roles. A whole-class debrief then takes place, led by the instructional team to discuss what worked well (WWW) and opportunity areas for growth (OAG) from both the student clinician's and the client's perspective.

On the day of the simulated client encounter, members of the Professional Skills team are on-site at HSIB for the duration of the event to provide support on an as-needed basis. Students have up to 15 minutes to interact with their simulated clients. The simulated client then asks the student for permission to share feedback, limited to one WWW and one OAG. Students have the option to opt out of oral feedback as a safety mechanism. Five minutes have been built into the schedule to allow for oral feedback. Following oral feedback, students leave the consultation rooms. Simulated clients then have 5 minutes to type out written feedback that students can access following their event. Students are also able to access their audiovisual recording.

Immediately following the on-site simulation, students scan a QR code to complete anonymous feedback about their experience that they may wish to share with the teaching team. On average, 5% of students also ask to pull one or more instructional team members aside after the fact to discuss gut reactions and strategic plans for next time.

Following the simulation, students have 2 weeks to complete their postencounter reflection assignment. The postencounter reflection for Milonga contributes 8% towards the learner's final course grade. Postencounter reflection questions task the students to engage in critical thinking and reflection as well as self-awareness. Students are scored numerically on the reflective components of this assignment based upon the following categories: descriptive writing, surface reflection, or deep reflection. At the point in the curriculum that "Milonga" takes place, students have had two semesters to move beyond descriptive writing into reflection. Students do not receive credit for descriptive writing in their postencounter assignment for Milonga.

Students are not graded based upon the simulated client's perception of their performance or how far they get in the simulation, but solely on their ability to reflect upon their performance.

BENEFITS OF THE LEARNING EXPERIENCE

The American Veterinary Medical Association Council on Education now requires that communication be taught in all accredited colleges of veterinary medicine. However, colleges are inconsistent in terms of which content they offer and how they deliver it. For the past 15 years, veterinary educators have experimented with faculty and guest lectures, small-group discussions, internet-based video learning, peer-assisted learning, roleplay, communications-based objective structured clinical examinations, clinical evaluation exercises, and video

review of consultations. While there is no universal approach to communication training, many veterinary educators have found value in experiential learning because it promotes professional growth through opportunities to receive and process feedback and reflect upon one's performance. Receiving feedback inspires self-awareness as learners consider their strengths as well as specific opportunity areas for growth. Furthermore, the use of simulated clients for experiential learning exercises reproducibly illustrates common clinical scenarios. Such simulations train students to navigate real-life client interactions within a safe, supportive space.

CHALLENGES AND SOLUTIONS

We have incorporated this simulation into our curriculum for first-year veterinary students for the past 3 years. On average, at least 10% of students per year, in a cohort that averages 110 students per class year, voice their dislike at having to offer an alternative to the classically embraced standard of care, ovariohysterectomy as a curative treatment for open pyometra. They struggle to elicit the client's perspective and are challenged to consider that medical management can be an appropriate choice. We acknowledge the discontent and use it as a teaching opportunity because students will not always agree with client decisions and choices, yet still are required to partner with them to achieve mutually agreeable patient outcomes.

SOC SUBCOMPETENCIES

- SOC Subcompetency 1.3.5. Integrates information about the patient with client circumstances to identify a range of appropriate care options and to adjust the care plan.
- SOC Subcompetency 1.4.4. Offers a range of care options that are tailored to the unique circumstances of each patient and client.
- SOC Subcompetency 1.4.5. Facilitates client decision-making regarding care by presenting the costs, risks, benefits, and evidence base of care options.
- SOC Subcompetency 7.3.4. Acknowledges and considers the context of previous care decisions made by colleagues and clients.
- SOC Subcompetency 7.3.5. Reflects on one's own professional identity in relation to providing a spectrum of care.
- SOC Subcompetency 7.4.4. Pursues opportunities to expand skill set to offer a broader range of care options.
- SOC Subcompetency 8.1.4. Provides a range of care and payment options in a manner that fosters financial viability of the practice and a positive working environment.

SPECIES

- Canine/feline

AFFILIATED COURSE

- VMED 802C: Professional Skills III

TIMING

- Preclinical Curriculum
- Year 1 Summer Semester (Semester #3 out of six preclinical semesters)

DURATION

- Students have 2 weeks prior to the simulated client encounter to submit their prework.
- Students have 15 minutes on the day of the event to converse in the exam room with the simulated client.
- Students have 5 minutes following their simulated conversation to engage in oral feedback with the simulated client.
- Simulated clients then have an additional 5 minutes following oral feedback to provide written feedback after the student departs the exam room.
- Events reset every 30 minutes.

LOCATION

- Simulated exam room

ESTIMATED COST

- Our simulated client encounter program for the College of Veterinary Medicine costs approximately \$100,000 annually to run 30 simulations (that collectively include both first- and second-year experiences).
- The average cost per simulation is $\$100,000/30 = \$3,333$.
- Funds come from internal sourcing.
- Funds cover the simulation space (which is on campus, but off-site from the College of Veterinary Medicine, at the Health Sciences Innovation Building), all simulated exam rooms, simulated client recruitment and training, CAE Learning Space audiovisual recording software for video review and analysis, and staffing.

MATERIALS SHARING

- Syllabus is available in the SOC Implementation Strategies Guide repository on [AAVMC Learn](#).
- The following materials are available upon request:
 - Door chart (i.e., what learners see before they engage with the simulated client)
 - Pre-encounter assignment
 - Simulated client encounter script
 - Simulated client observation rubric
 - Postencounter reflection
 - Instructor grading rubric for postencounter reflection
 - Prework for in-class session that preps for this event
 - Proposed flow for in-class session that preps for this event

RECOMMENDED CITATION

Englar, R. E., & Brett, T. G. (2025). Navigating client preference for medical management of open pyometra in a canine patient: A communication exercise. In AAVMC Spectrum of Care Initiative Task Force, H. N. Fedesco, & J. E. Brodsky (Eds.), *Enhancing spectrum of care preparation in veterinary education programs: An implementation strategies guide* (pp. 90–93). American Association of Veterinary Medical Colleges. <https://doi.org/10.17605/OSF.IO/AHWQE>

REFERENCES

- Adams, C. L., & Ladner, L. (2004). Implementing a simulated client program: Bridging the gap between theory and practice. *Journal of Veterinary Medical Education*, 31(2), 138–145. <https://doi.org/10.3138/jvme.31.2.138>
- Contri, A., Gloria, A., Carluccio, A., Pantaleo, S., & Robbe, D. (2015). Effectiveness of a modified administration protocol for the medical treatment of canine pyometra. *Veterinary Research Communications*, 39, 1–5. <https://doi.org/10.1007/s11259-014-9619-9>
- Englar, R. E. (2017). A novel approach to simulation-based education for veterinary medical communication training over eight consecutive pre-clinical quarters. *Journal of Veterinary Medical Education*, 44(3), 502–522. <https://doi.org/10.3138/jvme.0716-118R1>
- Englar, R. E., Schettler, K. A., & Ostrom, S. A. (2021). Survey of communication challenges that impact relationships between veterinarians and dog or cat breeders and proposed solutions for retaining breeders as clients. *Journal of the American Veterinary Medical Association*, 258(4), 407–415. <https://doi.org/10.2460/javma.258.4.407>
- Fieni, F., Topie, E., & Gogny, A. (2014). Medical treatment for pyometra in dogs. *Reproduction in Domestic Animals*, 49, 28–32. <https://doi.org/10.1111/rda.12302>
- Hamm, B. L., & Dennis, J. (2023, July 30). Surgical and medical treatment of pyometra. *dvm360*. <https://www.dvm360.com/view/surgical-and-medical-treatment-pyometra>
- Ros, L., Holst, B. S., & Hagman, R. (2014). A retrospective study of bitches with pyometra, medically treated with aglepristone. *Theriogenology*, 82(9), 1281–1286. <https://doi.org/10.1016/j.theriogenology.2014.08.011>
- Shaw, J.R., 2019. Evaluation of communication skills training programs at North American veterinary medical training institutions. *Journal of the American Veterinary Medical Association*, 255(6), 722–733. <https://doi.org/10.2460/javma.255.6.722>
- Verstegen, J., Dhaliwal, G., & Verstegen-Onclin, K. (2008). Mucometra, cystic endometrial hyperplasia, and pyometra in the bitch: Advances in treatment and assessment of future reproductive success. *Theriogenology*, 70(3), 364–374. <https://doi.org/10.1016/j.theriogenology.2008.04.036>

A Summary of “A Unique Spectrum of Care Tool Provides a Self-Regulated Learning Opportunity and Facilitates Client Communication”



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SUMMARY

Some veterinary interns have never heard of spectrum of care (SOC). Interns report that they find this a useful exercise, and some state that they could use this process in other clinical situations. The insights of interns have resulted in learning benefits for the entire oncology service at Schwarzman Animal Medical Center.

LEARNING OUTCOMES

The intern prepares for and leads an actual new oncology consultation with a pet owner whose pet has been diagnosed with cancer by presenting the SOC plan options to the pet owner using the Spectrum of Care Options, Presentation and Explanation (SCOPE) tool. The goal is for the intern to identify the tumor-specific histologic grading scale and clinical staging system, if they exist for that tumor type. The intern then uses that information to identify a spectrum of evidence-based treatment options appropriate to that tumor grade and stage. The SCOPE is a table in which the columns represent a spectrum of evidence-based treatment options for a particular pet and the rows include features of testing and treatment that the intern feels are important to convey to the pet owner. These will vary between pets, tumor type, and intern, but might include treatment schedule, adverse events associated with treatment, need for medications to be administered at home, and cost. See SCOPE examples contained in Hohenhaus and Provost (2024).

LEARNING EXPERIENCE DESCRIPTION

Intern selects a new patient appointment for the exercise.

Prework: Using instructor-provided materials, the intern performs a literature search to identify a spectrum of evidence-based treatment options appropriate for the pet’s tumor stage and grade. Those materials are used to create a SCOPE.

Clinical experience: The SCOPE is used to present treatment options to the pet owner.

Feedback: The instructor gives formative assessment during creation of the SCOPE and summative assessment after the consultation. Two categories are assessed: 1) ability to identify appropriate treatment options and create a SCOPE appropriate to the pet’s cancer, and 2) quality of interaction with the pet owner.

Instructor: Meets with intern one or two times prior to the consultation to answer questions, provide input into the development of the SCOPE, and prepare student for typical pet owner questions. The instructor observes the intern–pet owner interaction and answers questions outside of the intern’s assigned role (discuss SOC options). Instructor provides verbal and written feedback after interaction.

Materials required: Access to information about evidence-based cancer treatment options. Pet owners willing to participate.

Materials supplied to the intern:

- WSAVA Oncology Working Group. (n.d.). Veterinary oncology glossary. WSAVA Global Veterinary Community. <https://wsava.org/wp-content/uploads/2021/11/Glossary-WOW-13.11.2021.pdf>
- Avallone, G., Rasotto, R., Chambers, J. K., Miller, A. D., Behling-Kelly, E., Monti, P., Monti, P., Valenti, P., & Roccabianca, P. (2021). Review of histological grading systems in veterinary medicine. *Veterinary Pathology*, 58(5), 809–828. <https://doi.org/10.1177/0300985821999831>

- Stoewen, D. L., Coe, J. B., MacMartin, C., Stone, E. A., & Dewey, C. E. (2014). Qualitative study of the communication expectations of clients accessing oncology care at a tertiary referral center for dogs with life-limiting cancer. *Journal of the American Veterinary Medical Association*, 245(7), 785–795. <https://doi.org/10.2460/javma.245.7.785>
- SCOPE example contained in Hohenhaus and Provost (2024).
- **Figure 1** contained in Hohenhaus and Provost (2024).

Assessment: Verbal/written feedback following interaction. Standardized written feedback form is being developed. Once the intern year has been completed, a survey of the participating interns will be performed to assess the outcome from the intern's perspective.

CHALLENGES AND SOLUTIONS

Meeting with the intern takes time for both the instructor and the intern. It has not happened yet, but a client could refuse to speak with the intern. Because interns have been well prepared, unsolicited client feedback has been positive.

MORE INFORMATION ABOUT THIS LEARNING EXPERIENCE

Hohenhaus, A. E., & Provost, D. C. (2024). A unique spectrum of care tool provides a self-regulated learning opportunity and facilitates client communication. *Journal of Veterinary Medical Education*, e20230144. <https://doi.org/10.3138/jvme-2023-0144>

SOC SUBCOMPETENCIES

- SOC Subcompetency 1.3.5. Integrates information about the patient with client circumstances to identify a range of appropriate care options and adjust the care plan.
- SOC Subcompetency 1.4.4. Offers a range of care options that are tailored to the unique circumstances of each patient and client.
- SOC Subcompetency 1.4.5. Facilitates client decision-making regarding care by presenting the costs, risks, benefits, and evidence base of care options.
- SOC Subcompetency 3.1.5. Provides a range of appropriate care options for animal populations that considers animal welfare, lifestyle, economics, societal interests (e.g., food animal industry, animal activism), and public and environmental health concerns.

- SOC Subcompetency 7.3.4. Acknowledges and considers the context of previous care decisions made by colleagues and clients.
- SOC Subcompetency 7.3.5. Reflects on one's own professional identity in relation to providing a spectrum of care.
- SOC Subcompetency 7.4.4. Pursues opportunities to expand skill set to offer a broader range of care options.
- SOC Subcompetency 8.1.4. Provides a range of care and payment options in a manner that fosters financial viability of the practice and a positive working environment.

ADDITIONAL INFORMATION ABOUT ALIGNMENT WITH SOC SUBCOMPETENCIES

- 1.3.5, 1.4.4, 1.4.5, 3.1.5: Using the SCOPE tool, the student outlines options in the SOC plan and elicits contextual information about lifestyle, costs, and unique circumstances of the pet owner and pet.
- 7.3.4: Oncology patients are typically referred and have a large amount of referral information. If additional testing is required, the intern will need to navigate that request without speaking negatively about the lack of testing.
- 7.3.5: Most interns at Schwarzman Animal Medical Center pursue internship training as the prerequisite for specialty training. This exercise helps them to experience the professional identity of a specialist.
- 7.4.4: This exercise applies SOC to specialty care. Most interns have not led an initial consultation in oncology, and this expands their knowledge and skills in the oncology field.
- 8.1.4: The Schwarzman Animal Medical Center is located in New York City and its clientele reflects the area's economic, cultural, and social diversity.

SPECIES

- Canine/feline

AFFILIATED COURSE

- Schwarzman Animal Medical Center, Rotating Internship, Oncology Service

TIMING

- Rotating internship

DURATION

- The rotation lasts 4 weeks and the intern can choose to lead a consultation any time during the rotation. Most choose the 4th week.

LOCATION

- Clinic

ESTIMATED COST

- There is no cost to this exercise unless there is a need to purchase access to subscription-based publications on veterinary cancer treatment.

MATERIALS SHARING

- Authors are willing to share materials for the learning experience upon request.

RECOMMENDED CITATION

Hohenhaus, A., & Provost, D. C. (2025). A summary of "A unique spectrum of care tool provides a self-regulated learning opportunity and facilitates client communication." In AAVMC Spectrum of Care Initiative Task Force, H. N. Fedesco, & J. E. Brodsky (Eds.), *Enhancing spectrum of care preparation in veterinary education programs: An implementation strategies guide* (pp. 94–96). American Association of Veterinary Medical Colleges. <https://doi.org/10.17605/OSF.IO/AHWQE>

REFERENCES

- Brown, C. R., Garrett, L. D., Gilles, W. K., Houlihan, K. E., McCobb, E., Pailler, S., Putnam, H., Scarlett, J. L., Treglia, L., Watson, B., & Wietsma, H. T. (2021). Spectrum of care: More than treatment options. *Journal of the American Veterinary Medical Association*, 259(7), 712–717. <https://doi.org/10.2460/javma.259.7.712>
- Coe, J. B., Adams, C. L., & Bonnett, B. N. (2007). A focus group study of veterinarians' and pet owners' perceptions of the monetary aspects of veterinary care. *Journal of the American Veterinary Medical Association*, 231(10), 1510–1518. <https://doi.org/10.2460/javma.231.10.1510>
- Evason, M. D., Stein, M. R., & Stull, J. W. (2022). Impact of a spectrum of care elective course on third-year veterinary students' self-reported knowledge, attitudes, and competencies. *Journal of Veterinary Medical Education*, 50(5), 590–598. <https://doi.org/10.3138/jvme-2022-0010>
- Medland, J. E., Marks, S. L., & Intile, J. L. (2022). Discharge summaries provided to owners of pets newly diagnosed with cancer exceed recommended readability levels. *Journal of the American Veterinary Medical Association*, 260(6), 657–661. <https://doi.org/10.2460/javma.21.09.0410>
- Morello, S. L., Maxwell, E. A., Ness, K., Minsel, T., & Shiu, K. B. (2023). Client perceptions improve with collaborative care when managing dogs with cancer: A Collaborative Care Coalition study. *Journal of the American Veterinary Medical Association*, 261(7), 1037–1044. <https://doi.org/10.2460/javma.23.01.0046>
- Stoewen, D. L., Coe, J. B., MacMartin, C., Stone, E. A., & Dewey, C. E. (2014). Qualitative study of the information expectations of clients accessing oncology care at a tertiary referral center for dogs with life-limiting cancer. *Journal of the American Veterinary Medical Association*, 245(7), 773–783. <https://doi.org/10.2460/javma.245.7.773>
- van Houten-Schat, M. A., Berkhout, J. J., Van Dijk, N., Endedijk, M. D., Jaarsma, A. D. C., & Diemers, A. D. (2018). Self-regulated learning in the clinical context: A systematic review. *Medical Education*, 52(10), 1008–1015. <https://doi.org/10.1111/medu.13615>

Using an On-Demand, Self-Paced Online Course to Facilitate a Spectrum of Care Approach to Practice



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SUMMARY

This course was created by the Open Door Veterinary Collective to help train veterinary professionals in providing compassionate, relationship-centered, evidence-based veterinary care across a spectrum of client and patient circumstances, while maintaining a net positive revenue and supporting job satisfaction of the whole veterinary care team. This course was developed for veterinary practitioners, students, educators, technicians, administrators, and leadership.

LEARNING OUTCOMES

1. The student will understand that access to veterinary care is limited by not only finances but other social determinants of health, which affect both people and animals and can influence practice profitability and staff well-being.
2. The student will deliver relationship-centered veterinary care and share decision-making with clients about diagnostic and treatment options that meet their contextual needs, and therefore improve outcomes for bonded families and the practices that serve them.
3. The student will offer a range of evidence-based diagnostic and treatment options to address the unique circumstances of each bonded family, foster financial viability of the practice, and meet the standard of veterinary care.

LEARNING EXPERIENCE DESCRIPTION

This is an interactive, modular online course that is delivered asynchronously, on-demand and self-paced. It is expected to take approximately 3 hours to complete. The course includes post-chapter quizzes as well as reflective feedback with each lesson.

The content was developed in response to our growing awareness of barriers to veterinary care and the lack of resources available to professional teams to address these challenges and remain financially sustainable. The goal was to create interactive training modules for veterinary professionals that can be continually updated to include the most current information available. Using a combination of evidence-based medical protocols, business practices, and communication skills, this course can help our entire profession break the chain of negative events so more bonded families access veterinary care, more practices get paid, and more veterinary care teams deliver the highest standard of care possible in diverse contexts.

In pursuing these goals, we have faced challenges in connecting with colleges of veterinary medicine to share information about the course. Our pilot program in 2024 included 12 schools of veterinary medicine and yielded very positive responses from both traditional and distributive models. The educators appreciated the high-quality content, evidence-based information, approachability of learning opportunities, and flexibility to integrate the content into their unique programs. The students appreciated the practical content and skills they gained about practicing veterinary medicine sustainably across a spectrum.

The course allows each veterinary program to decide how to incorporate it into preclinical courses or rotations to suit their needs. Some colleges of veterinary medicine are implementing the content as a single module in a specific course, such as Business and Communication, Spectrum of Care, or Access to Care; others are using multiple modules to supplement rotations such as Primary Care or One Health Clinic–focused care.

The RACE-approved course could also be used in Diversity, Equity, and Inclusion programs, veterinary mental wellness training, or house officer or veterinary specialist orientations. By educating the entire team, including veterinary specialists, administrators,

and school leadership, about the principles of spectrum of care (SOC), we can empower our profession to work together to help more bonded families, stay financially sustainable, and improve our sense of community and well-being.

MORE INFORMATION ABOUT THIS LEARNING EXPERIENCE

<https://opendoorschool.thinkific.com/>

SOC SUBCOMPETENCIES

- SOC Subcompetency 1.3.5. Integrates information about the patient with client circumstances to identify a range of appropriate care options and adjust the care plan.
- SOC Subcompetency 1.4.4. Offers a range of care options that are tailored to the unique circumstances of each patient and client.
- SOC Subcompetency 1.4.5. Facilitates client decision-making regarding care by presenting the costs, risks, benefits, and evidence base of care options.
- SOC Subcompetency 7.3.4. Acknowledges and considers the context of previous care decisions made by colleagues and clients.
- SOC Subcompetency 7.3.5. Reflects on one's own professional identity in relation to providing a spectrum of care.
- SOC Subcompetency 8.1.4. Provides a range of care and payment options in a manner that fosters financial viability of the practice and a positive working environment.

SPECIES

- Canine/feline

AFFILIATED COURSE

- Differs depending on school of veterinary medicine where the course is used.

TIMING

- Preclinical and Clinical Curriculum
- Years 1-4
- As previously mentioned, the Open Door Veterinary Collective online course is being used variably at many schools of veterinary medicine based on their individual needs.

DURATION

- It is expected to take 3 hours.

LOCATION

- Online self-paced interactive learning modules.

ESTIMATED COST

- The cost is \$135 for the 3-hour course; the fee for enrollment will be waived for veterinary students based on available funding.

MATERIALS SHARING

- Syllabus is available in the SOC Implementation Strategies Guide repository on [AAVMC Learn](#).

RECOMMENDED CITATION

Jankowski, K., & Spencer, T. (2025). Using an on-demand, self-paced, online course to facilitate a spectrum of care approach to practice. In AAVMC Spectrum of Care Initiative Task Force, H. N. Fedesco, & J. E. Brodsky (Eds.), *Enhancing spectrum of care preparation in veterinary education programs: An implementation strategies guide* (pp. 97–99). American Association of Veterinary Medical Colleges. <https://doi.org/10.17605/OSF.IO/AHWQE>

REFERENCES

- Fingland, R. B., Stone, L. R., Read, E. K., & Moore, R. M. (2021). Preparing veterinary students for excellence in general practice: Building confidence and competence by focusing on spectrum of care. *Journal of the American Veterinary Medical Association*, 259(5), 463–470. <https://doi.org/10.2460/javma.259.5.463>
- Janke, N., Coe, J. B., Sutherland, K. A., Bernardo, T. M., Dewey, C. E., & Stone, E. A. (2021). Evaluating shared decision-making between companion animal veterinarians and their clients using the observer OPTION 5 instrument. *Veterinary Record*, 189(8), e778. <https://doi.org/10.1002/vetr.778>
- Janke, N., Shaw, J. R., & Coe, J. B. (2022). Veterinary technicians contribute to shared decision-making during companion animal veterinary appointments. *Journal of the American Veterinary Medical Association*, 260(15), 1993–2000. <https://doi.org/10.2460/javma.22.08.0380>
- Kipperman, B. S., Kass, P. H., & Rishniw, M. (2017). Factors that influence small animal veterinarians' opinions and actions regarding cost of care and effects of economic limitations on patient care and outcome and professional career satisfaction and burnout. *Journal of the American Veterinary Medical Association*, 250(7), 785–794. <https://doi.org/10.2460/javma.250.7.785>
- Kogan, L., Schoenfeld, R., & Santi, S. (2019). Medical updates and appointment confirmations: Pet owners' perceptions of current practices and preferences. *Frontiers in Veterinary Science*, 6, 80. <https://doi.org/10.3389/fvets.2019.00080>
- Kogan, L. R., & Rishniw, M. (2023). Veterinarians and moral distress. *Journal of the American Veterinary Medical Association*, 261(5), 1–7. <https://doi.org/10.2460/javma.22.12.0598>
- Moses, L., Malowney, M. J., & Wesley Boyd, J. (2018). Ethical conflict and moral distress in veterinary practice: A survey of North American veterinarians. *Journal of Veterinary Internal Medicine*, 32(6), 2115–2122. <https://doi.org/10.1111/jvim.15315>
- Neal, S. M., & Greenberg, M. J. (2022). Putting access to veterinary care on the map: A veterinary care accessibility index. *Frontiers in Veterinary Science*, 9, 857644. <https://doi.org/10.3389/fvets.2022.857644>
- Reinhard, A. R., Hains, K. D., Hains, B. J., & Strand, E. B. (2021). Are they ready? Trials, tribulations, and professional skills vital for new veterinary graduate success. *Frontiers in Veterinary Science*, 8, 785844. <https://doi.org/10.3389/fvets.2021.785844>
- Stull, J. W., Shelby, J. A., Bonnett, B. N., Block, G., Budsberg, S. C., Dean, R. S., Dicks, M. R., Forsgren, B. W., Golab, G. C., Hamil, J. A., Kass, P. H., King, L. J., Lund, E. M., Maddux, M. L., McFarland, J. M., McKenzie, B. A., Moyer, M. R., Olson, P. M., & Wittum, T. E. (2018). Barriers and next steps to providing a spectrum of effective health care to companion animals. *Journal of the American Veterinary Medical Association*, 253(11), 1386–1389. <https://doi.org/10.2460/javma.253.11.1386>

A Selection of Additional Resources on Spectrum of Care Learning Experiences



Evason, M. D., Stein, M. R., & Stull, J. W. (2022). Impact of a spectrum of care elective course on third-year veterinary students' self-reported knowledge, attitudes, and competencies. *Journal of Veterinary Medical Education*, 50(5), 590–598. <https://doi.org/10.3138/jvme-2022-0010>

This article describes an elective (one-credit) “Spectrum of Care in Small Animal General Practice” course for third-year, second-semester students at the Atlantic Veterinary College, University of Prince Edward Island. The syllabus is provided, and additional course design components are available from the authors upon request.

The authors evaluated changes in students' self-reported spectrum of care (SOC)-related knowledge, attitudes, and competencies by surveying students at the beginning and end of the course. Notably, even though students were unfamiliar with the term “spectrum of care” before the course, they were already aware of the need for SOC in practice and SOC training in the DVM curriculum. Following the course, students reported feeling better able to recommend treatment options for clients with financial limitations. Students also reported that they would benefit from more training on the cost of veterinary care in the curriculum.

Fingland, R.B., Stone, L.R., Read, E. K., & Moore, R. M. (2021). Preparing veterinary students for excellence in general practice: Building confidence and competence by focusing on spectrum of care. *Journal of the American Veterinary Medical Association*, 259(5), 463–470. <https://doi.org/10.2460/javma.259.5.463>

This article describes the Preparing for Excellence in Veterinary General Practice program at the Ohio State University College of Veterinary Medicine. The program uses an integrated spiral curriculum to incorporate SOC-related instruction and experiences throughout all 4 years of students' preparation. SOC components of the curriculum include the Veterinary Clinical and Professional Skills Center, the SOC Summer Externship Program, the Veterinary Medicine Outreach Program, the shelter medicine and surgery rotation, the SOC career area of emphasis, and the Frank Stanton Veterinary SOC Clinic.

More information available at <https://vet.osu.edu/education/programs/dvm/preparing-excellence-veterinary-general-practice>

McCobb, E., Rozanski, E. A., Malcolm, E. L., Wolfus, G., & Rush, J. E. (2018). A novel model for teaching primary care in a community practice setting: Tufts at Tech Community Veterinary Clinic. *Journal of Veterinary Medical Education*, 45(1), 99–107. <https://doi.org/10.3138/jvme.1116-174>

This article describes the required Tufts at Tech Community Veterinary Clinic primary care rotation at Cummings School of Veterinary Medicine, Tufts University. The clinic is located at a technical high school in an underserved community that offers a veterinary assisting program. DVM students work with veterinary assisting students to manage cases under the oversight of a supervising veterinarian, including communicating with clients and performing diagnostic and surgical procedures. Follow-up evaluation indicated positive outcomes for clinic caseload and income, veterinary students, veterinary assisting students, local veterinarians, and underserved clients and their pets.

More information available at <https://vet.tufts.edu/tufts-tech>

O’Shaughnessy, S. E., Gould, L., Miles, A. C. M., Sellers, E. R., Squire, L. S. W., & Warman, S. W. (2024). Enhancing primary care learning in a referral hospital setting: Introducing veterinary clinical demonstrators. *Journal of Veterinary Medical Education*, 51(2), 274–282. <https://doi.org/10.3138/jvme-2022-0143>

This article describes the process of creating and implementing a veterinary clinical demonstrator role to support teaching by specialist clinical staff in final-year rotations at the University of Bristol Veterinary School. This clinical demonstrator is responsible for helping students understand the relevance of referral cases for primary care and supporting students’ development of day-one competencies.

The authors evaluated the role’s initial implementation by surveying staff and students. Demonstrators positively affected workplace and student experiences, student welfare, and emphasis on day-one competencies and primary care relevance. Challenges included logistics, staffs’ lack of communication and awareness of the role, and inconsistency in the support provided by demonstrators.

Suggestions for improvement are also discussed.

Warman, S. M., Armitage-Chan, E., Banse, H. E., Khosa, D. K., Noyes, J. A., & Read, E. K. (2023). Preparing veterinarians to practice across the spectrum of care: An integrated educational approach. *Advances in Small Animal Care*, 4(1), 171–183. <https://doi.org/10.1016/j.yasa.2023.04.004>

This article uses a “bricks and mortar” analogy to guide veterinary medical programs in enhancing SOC instruction in their curricula. The authors describe and provide examples of classroom-based and workplace-/clinic-based instruction and assessment for two “bricks,” or competencies, required for SOC practice: communication and clinical reasoning. The authors identify four strategies, or “mortar,” that can help programs implement SOC-related curricular changes: fostering collaboration between specialist and primary care faculty, intentionally leveraging multiple aspects of the curriculum, providing SOC-related professional development for faculty, and considering how students can continue to develop their competence and confidence in SOC practice as they transition into practice.