The final section of this four-part series will provide participants with an opportunity to consolidate cannabis topics into a practical “use it tomorrow” level of confidence. Utilizing a case-centered format, participants will practice product evaluation and have the opportunity to create and receive feedback on product administration and monitoring plans.

Participants will have the opportunity to provide product feedback to sponsoring companies in order to encourage increasing dialogue between clinicians and the cannabis product industry. The goal for this lecture is to ensure that participants feel confident in clinical cannabis topics, are ready to provide harm-reduction education to pet owners, and know how and where to find additional support and resources.

**Case-based applications: epilepsy**

The successful application of cannabis medicine in nervous system disorders requires a clear understanding of basic nervous system physiology as well as cannabinoid pharmacokinetics. The cross-synaptic, retrograde feedback system mediated by the CB1 receptors provides a mechanism for neuro-modulation throughout the nervous system. Nervous system conditions such as epilepsy frequently require the utilization of a complex spectrum product, consistent journaling by the pet parent, and careful monitoring of blood chemistries and concurrently administered drug levels.

**Case-based applications: palliative care**

Palliative care cases within veterinary medicine require careful navigation by the entire veterinary team. The progressive nature of these cases requires the veterinary team to implement a careful and consistent monitoring plan, to provide emotional support to the pet’s human family, and frequently review and update the treatment plan.

The complex cross-system involvement of palliative care cases makes them ideal candidates for cannabis medicine. However, administration protocols must be designed for each individual patient, updated frequently and respect the unique needs of the human family members. The range of products that can be applied in palliative care cases frequently spans the gamut of availability and multiple products may be required to meet the pet parent’s treatment goals.

**Case-based applications: pain control**

The use of cannabis in pain control may be one of the most researched areas of veterinary cannabis medicine to date. However, the wide range of underlying mechanisms, the degree of control needed in each case, as well as the variation of patient response to individual products creates a wide range of clinical efficacy. Products that contain a higher ratio of CBD to THC may be effective in cases where mild pain control is desired, as an adjunct therapy, or for THC-sensitive patients. Conditions that have not responded to traditional pain control regimens and/or are not seeing success from CBD-dominant products frequently require the careful incorporation of higher THC levels or more complex molecular profiles.

**Case-based applications: anxiety-related behaviors**

Anxiety-related disorders can be frustrating for both the pet parents and the veterinary care team. Whether cannabis therapy is utilized as a primary treatment or an adjunct to traditional protocols, the assessment of the pet’s holistic environment is essential. Anxiety and stress-related behaviors often have their foundation in other medical causes (such as pain) as well as environmental stressors (such as the household environment). Anxiety-related cases often respond well to CBD-dominant cannabis products. However, depending on the root cause, a well-balanced CBD:THC product with a full compliment of terpene molecules is often required. These cases require patience, compassion, an

intense level of client education and frequent communication with the pet parent. Pet parent journals are often one of the most important tools in ensuring a successful case outcome.

**Case-based product safety & efficacy evaluation**

The selection of a cannabis product for any case should initially start with an evaluation of that product’s legal status. Practitioners should be confident of the product’s origin, techniques used during manufacturing, and the product’s molecular profile in order to provide pet parents with product safety evaluation and efficacy guidance.

Every cannabis product administered to an animal should be accompanied by a complete Certificate of Analysis (COA) to provide the practitioners with an accurate molecular profile as well as demonstrate freedom from contaminants such as pesticides, heavy metals, mold, bacteria and residual solvents.

**Creating & integrating appropriate monitoring procedures**

Clinic teams and training managers must begin implementing cannabis-specific training to ensure that clients are receiving consistent and accurate information from all members of the clinic team. Open discussions about clinic cannabis policies ensure that all team members have the opportunity to express their personal views, understand the clinic and/or corporate-level policies around cannabis, and ensure that the team is able to appropriately field questions from pet parents and provide scientifically-accurate answers when appropriate.

*Monitoring recommendations*

Veterinary health care teams should emphasize the importance of monitoring to assess either positive or negative trends that occur due to cannabis administration. Veterinarians should use their clinical judgment to protect the health and wellbeing of their patients – similar to the use of any other off-label medication or husbandry decision made by a pet parent.

Practitioners may consider implementing the following monitoring protocol or incorporating cannabis-use monitoring into existing protocols:

Baseline (prior to starting cannabis):

* Examination
* Screening labwork
  1. weeks after reaching target dose
* Examination
* Screening labwork
* Drug level monitoring (as needed)

6 or 12 months (depending on concurrent diagnostic needs)

* Examination
* Screening labwork
* Drug level monitoring (as needed)

Although rare, the most commonly observed side effects from cannabis administration include sensitivity to light, sensitivity to sound, anxiety/restlessness, and gastrointestinal upset. Pet parents should be counseled carefully on the potential side effects from the specific product they have decided to administer, potential interaction with concurrent treatments, and be committed to carefully journaling administration and effects.

**Harm reduction for the clinic tomorrow**

Harm Reduction Education (HRE) may be the most important aspect of cannabis therapy in veterinary medicine today. HRE should be implemented any time the veterinary team becomes aware of a *client-initiated treatment* – and especially when a cannabis product is being utilized. The goal of the veterinary team should be to provide the education that respects the pet parents’ decision and goals while emphasizes patient safety and wellbeing.

*Important interactions*

Be aware of the potential for interactions between cannabis and pharmaceutical drugs.

Be prepared to assess a client’s product and dosing plan and intervene if practitioners are concerned the product could pose a risk to the patient

Monitor pharmaceutical drugs doses and effects closely if an animal is also receiving a cannabis product.

*Cautions and contra-indications*

Avoid the use of cannabis in young, pregnant or lactating animals.

Use caution and implement careful monitoring for cardiac and renal insufficiency patients.

*Quality ingredients*

Instruct pet parents to avoid products that have extra additives, coloring or sweeteners.

Pet parents should be carefully counseled to avoid products with known toxins such as xylitol, chocolate, raisins, etc.

*Set up for success*

Anytime a new medication is administered to an animal, pet parents should make time to carefully observe their pet’s reaction in order to identify any negative effects. Instruct the pet parent to administer cannabis when the animal is normally calm and restful.

*Go slow*

Pet parents should start with a small amount and increase slowly to the desired dose.