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Introduction

Mission Animal Hospital is a multi-veterinarian integrative veterinary practice located on the Central Coast of California. The focus of Mission Animal Hospital is holistic veterinary care that encompasses all aspects of veterinary medicine. From advances surgical procedures, radiographs, ultrasound, dentistry to integrative medicine such as acupuncture, massage, laser therapy, and behavioral consultations.

This workbook is intended to help you as a volunteer keep track of information that you learn while at MAH. Use it as a reference, notes page, and guide for the important skills that you’ll be learning and observing while volunteering!
The Basics

To start, what is a veterinarian (DVM)? How are they different from licensed veterinary technicians (LVT) or technicians and assistants? Who are some of the other people who work in the hospital and help it run smoothly? Every hospital is unique and runs differently, but at MAH there are many different types of employees that all have different jobs.

Veterinarian: completes 4 years of study at an AVMA-accredited school of veterinary medicine, AFTER finishing 4 years of undergraduate study. Only veterinarians can: Prescribe, Diagnose, Prognose, and Perform surgery.

Task: Identify the 4 doctors at MAH and their emphasis.
1) 
2) 
3) 
4) 

Notes:

Licensed Veterinary Technician (LVT): a person who has completed an associate of science degree and has completed national and state examinations.

Task: Ask a LVT at least 3 things they are able to do (under the supervision of the DVM) that an unlicensed technician cannot.
1) 
2) 
3) 

Notes:
Veterinary Assistant: a person who is typically trained on the job to assist the veterinarian and LVT’s with restraint, setting up equipment, and other hospital tasks.

Task: Identify at least 3 things that a veterinary assistant does to assist the DVM on a daily basis.

1) 
2) 
3) 

Notes:

Customer Service Representative: responsible for working with clients, being a liaison between technicians, vets, and pet owners, scheduling, and smooth operations of the clinic!

Task: Talk to one (or more!) CSR at MAH to find out what the most difficult and most rewarding part of their job is.

Notes:

Office manager: in charge of organizing practice operations and procedures as well as managing payroll, hospital budgets, and accounts.

Notes:

Reflection: After looking more into the various roles in an animal hospital, what role interested you the most? Why? How can you use classes or extracurriculars at school to help work toward your goals?
Keeping Things Tidy

One of the most important parts of working at a hospital is making sure that the hospital is clean. Keeping things clean minimizes the spread of disease, decreases the risk of accidents, and makes the experience more pleasant for staff, clients, and the animals.

Common cleaners used at MAH

Chlorhexidine: an antiseptic, antibacterial agent that prevents the growth of bacteria. It should be diluted prior to use and can be used to prep before surgery or clean surfaces such as exam tables and instruments.

- Where is the chlorhexidine located?
- What is the dilution ratio?

Isopropyl alcohol: an antibacterial, antifungal, antiviral solution that kills bacteria by destroying proteins. It can be used to prep before surgery or injections or clean surfaces.

- Where is the isopropyl alcohol located?
- What is the dilution ratio?

Hydrogen peroxide: an antiseptic that is an antibacterial, antifungal, antiviral compound that works by destroying bacterial cell walls. It can be used for cleaning surfaces and also removing blood stains from fabrics and pet hair.

- Where is hydrogen peroxide located?
- What is the dilution ratio?

Chlorhexidine 2% surgical scrub: an antiseptic, antibacterial agent that prevents the growth of bacteria. It should be diluted prior to use and can be used to prep before surgery.

- Where is the surgical scrub located?
- What is the dilution ratio?
Bleach: a solution that has antibacterial properties. It can be used to clean floors and surfaces.
   Where is the bleach located?
   What is the dilution ratio?

KennelSol: a germicidal cleaner, deodorizer, and disinfectant. Is effective against many pathogens common in animal medicine such as Parvovirus and kennel cough.
   Where is the KennelSol located?
   What is the dilution ratio?

Enzymatic Pet Stain Remover: a cleaner and deodorizer used on pet urine, feces, and vomit that breaks down enzymes.
   Where is this located?
   What is the dilution ratio?

Reflection: Why is it important to use the right cleaner/disinfectant?

What are some ways I can keep myself safe while using cleaning equipment?
Room and Station Set Up

Rooms and stations should be set up in a way that is orderly and clean. Before any client and pet goes in a room it should be checked that it’s clean and fully stocked.

Otoscope: a device used to look down into the ear canal by shining a light down an ear cone. There should be a variety of ear cones to accommodate different pet sizes.

Why is it important to check a pet’s ears?

Ophthalmoscope: a device used to look into the eyes

What is a common sign that a pet has an eye issue?

Thermometer: used to take a patient’s temperature, usually rectally.

When is it appropriate to use an ear thermometer?
Stethoscope: used to listen to a patient’s heart and lung sounds.

What is the normal resting heart rate for a dog? A cat?
What is the normal respiratory rate for a dog? Cat?

Sanitizing products such as alcohol wipes, chlorhexidine wipes and baby wipes should be fully stocked.
Treats, calming products, ear swabs and tissues should all be present in the room.

Please write out the steps for cleaning the exam room.
1)
2)
3)
4)

Here is an example of a properly stocked exam room cabinet. Is there an item you cannot identify? Ask a tech!

Reflection: What are some things that MAH does to decrease stress during the pet’s exam? Which technique do you think is most important?
Sometimes dogs that are at the vet act differently than they do at home. A pet that has never been aggressive before may be stressed or in pain and this may cause them to lash out. It’s important to be able to read and understand a pet’s body language in order to handle them properly and keep yourself and the pet safe!

Here are some examples of anxious/fearful dog behavior:

- Cowering
- Yawning/licking lips
- Panting
- Looking away/avoiding
- Ears back
- “Whale eye”
- Tail tucked
- Whining

What can you do to make a dog less nervous? Check with a technician!
Examples of an aggressive dog:

Stiff body
Raised hair on back
Tail may be wagging slowly

Alert eyes
Growling/snarling
Lunging/trying to bite

If a dog is aggressive, do not attempt to touch the dog or handle it alone! Always get help from a more experienced technician or veterinarian. An aggressive dog may need a muzzle or to be sedated in order to be safe.

Reflection: A 50 pound dog is coming into the clinic with a wound on his head from a dog fight. The owner states that the dog is usually friendly but can be anxious in new situations. When you see the dog in the lobby he is panting, has “whale eye”, and is painful from his wound. What would you do from the moment the dog walks in the door to the moment the dog leaves to minimize stress?
Restraining Dogs

When restraining a dog for an exam or procedure, the most important thing to keep in mind is that we want to try to make the experience SAFE and STRESS-FREE. When approaching any dog, take your time to observe the dog’s body language and the environment. If at any time you feel unsafe, get help from a more experienced technician!

When approaching a dog, what should you try in order to gain the dog’s trust?

The four main ways to restrain a dog are:
Standing restraint

Sternal recumbency

Notes:

__________________________
__________________________
__________________________
__________________________
Lateral Recumbency

What are some tools that we can use to restrain pets or stop them from injuring themselves?

Besides physical restraint there is also chemical restraint otherwise known as sedation. Sedation should be used “early and often” when a pet is extremely anxious or aggressive. The less stressful experiences the pet endures while at the vet, the better.

Reflection: What are some ways that you would keep yourself safe while restraining dogs?
Cats have more subtle body language than dogs, and it’s easy to misinterpret a cat’s intentions. With cats it’s critical to keep the environment as quiet as possible and keep in mind that sometimes less is more!

Signs of a relaxed cat:

- Eyes blinking slowly or half closed
- Tail upright or hanging relaxed
- Ears relaxed/upright
- Movements are “loose”
- Purring
- “Open” or stretched out body

Signs of a fearful cat:

- Wide eyes with dilated pupils
- Body “closed”, trying to appear small
- Stress purring
- Tail tucked
- Hiding
Signs of an aggressive cat:

- Growling
- Hissing
- Wide eyes
- Ears flattened
- Swishing tail
- Swatting with paw/trying to bite

Cats are very sensitive and should be handled gently. Unlike most dogs, cats like to find places to hide when they are afraid, so using towels and carriers can be helpful to create a calm environment.

Reflection: What are some of the ways that we can minimize stress for cats while they are in the clinic?

What should you do if you approach a cat that seems scared?
Restraining Cats

In general, many of the restraints used for dogs are also used for cats. The main difference for cats is the use of “scruffing”, which is gently but firmly grasping the loose skin behind a cat’s neck. When done properly this technique keeps the cat more calm and offers you more control.

Sternal recumbency or standing restraint can be used for an exam. This minimizes stress on the cat and allows them to rest comfortably while feeling in control. Always keep one hand on that cat and watch for signs of stress. Other methods include:

Sitting for blood draw (cephalic)

Notes:

_________________________________________________________________
_________________________________________________________________
_________________________________________________________________
_________________________________________________________________

Lateral recumbency

Notes:

_________________________________________________________________
_________________________________________________________________
_________________________________________________________________
_________________________________________________________________
Restraint for Jugular blood draw

In addition to physical restraint, additional tools can be used for cats such as cat bags, gloves, and towels. At MAH towels are the preferred method for calming a cat. If a cat is unable to be held without endangering itself or you, they may be sedated to perform an exam.

Reflection: What would you recommend for keeping a cat calm during an exam? What would be the first method you would try to increase restraint?
History and Physical Exam

An exam is usually the reason why a pet is in the clinic, from something as simple as picking up flea medication to something more serious, the medical history and exam is where everything starts.

Medical History is usually taken by a CSR or vet assistant. They may ask the owner why they’ve brought their pet in and what is the chief complaint. They should also ask about medical history, environmental history, medication, diet, and behavior.

Example: what questions would you ask a client who brings their pet in for itchiness, hair loss, and redness?

During the examination, the doctor will check multiple systems. Match the equipment used to check these systems. There may be multiple ways to check and you can use answers more than once!

___Temperature
___Skin
___Heart and Lungs
___Digestive system
___Genitals
___Muscles
___Nervous system
___Lymph Nodes
___Ears
___Eyes
___Mouth

a) Palpation/hands
b) Stethoscope
c) Ophthalmoscope
d) Thermometer
e) Ultrasound
f) Otoscope
g) X-rays
Vaccines

Dogs and cats should receive regular vaccines throughout their lives to protect them from various diseases. Vaccines can be classified as “core” and “non-core” vaccines. Core vaccines are recommended for all pets throughout their lives because of high mortality rates if they contract the disease. Non-core vaccines are generally for diseases that are non-fatal when contracted and are only given if the pet is considered high risk.

Canine Vaccine Chart

<table>
<thead>
<tr>
<th>Vaccine Name</th>
<th>Core or Non-Core</th>
<th>How often it’s given</th>
<th>Route of administration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rabies</td>
<td>Core</td>
<td>First vaccine at 16 weeks old then every 3 years</td>
<td>Subcutaneously, right hip</td>
</tr>
<tr>
<td>Canine Distemper, Parvovirus, and Adenovirus (DHPP)</td>
<td>Core</td>
<td>At 8, 12, 16 weeks then every 3 years</td>
<td>Subcutaneously, right shoulder</td>
</tr>
<tr>
<td>Canine Leptospirosis</td>
<td>Non-core</td>
<td>First vaccine given, second in 4 weeks, then yearly</td>
<td>Subcutaneously, Left hip</td>
</tr>
<tr>
<td>Bordetella</td>
<td>Non-core</td>
<td>Every 6 months</td>
<td>orally</td>
</tr>
<tr>
<td>Canine Influenza</td>
<td>Non-core</td>
<td>Yearly</td>
<td>Subcutaneously</td>
</tr>
</tbody>
</table>

Define subcutaneously:

Why are the DHPP vaccines given in a series to puppies?
Feline vaccine chart

<table>
<thead>
<tr>
<th>Vaccine Name</th>
<th>Core or Non-Core</th>
<th>How often it’s given</th>
<th>Route of administration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rabies</td>
<td>Core</td>
<td>First vaccine at 16 weeks of age and then yearly</td>
<td>Subcutaneously, Right hip</td>
</tr>
<tr>
<td>Feline Herpes 1, Feline Calicivirus, Feline Panleukopenia (FVRCP)</td>
<td>Core</td>
<td>At 8, 12, 16 weeks then yearly</td>
<td>Subcutaneously, right shoulder</td>
</tr>
<tr>
<td>Feline leukemia (FeLV)</td>
<td>Core</td>
<td>First vaccine given then second booster 4 weeks later. Subsequent vaccines yearly</td>
<td>Subcutaneously, Left hip</td>
</tr>
</tbody>
</table>

Find out why all of the feline vaccines given at MAH are considered one year vaccines?

Why is FeLV not given to some pets?
Vaccine tools

There are several tools and information needed for completing a vaccine appointment.

1) One syringe and two 22-gauge needles.
   a) Why two needles?
2) Vaccine
3) Sharps container

List the steps for administering a vaccine.

Please draw on the dog and the cat outlines where vaccines should be administered.
Blood Draws and Placing Intravenous Catheters

Blood draws are a routine part of veterinary care and most pets will have blood drawn at some point in their lives. At MAH we are able to complete in house blood work such as Complete Blood Count (CBC) and Chemistry Panels, which can show if pets are suffering from illness or disease. In order to draw blood safely you will need to know what veins we draw from and what tools you will need.

For dogs, the first place to try to draw blood is the jugular vein(s). Why do we draw from here first?

1) 
2) 

If those attempts are unsuccessful, we can attempt the other veins, usually cephalic vein or lateral saphenous.

For cats, the first vein to attempt a blood draw is the jugular vein(s), followed by the medial saphenous vein, lateral saphenous, or cephalic.

Why do we try to avoid using the cephalic vein(s) for blood draws if possible?

What are some factors that might make drawing blood more difficult?
What is the rule of thumb if you are attempting to draw blood and cannot “hit” the vein by the 2nd try?

For blood draws you will need a) needle and syringe b) blood tubes.

What is the most common size needle used for blood draws? __________

List the needle gauges from smallest to largest (there are 4 used at MAH).

____________ < _____________ < _____________ < _____________

What is “occluding” the vein (aka: “holding off?”)

How would you hold off a vein for a cephalic blood draw? Describe or draw a picture.

How would you hold off a vein for a medial saphenous blood draw on a cat? Describe or draw a picture.
To prep the skin for venipuncture, it should be wiped down with alcohol. The hair may need to be shaved if it is long or dirty or if an IV catheter is being placed. Once the skin is cleaned, the technician can collect the blood sample. Afterwards, pressure is applied to help clotting.

Tip! When a needle is inserted into the skin, it should always be placed at a 25 degree angle bevel side UP!

Once the blood is outside the body, it needs to be properly stored so it can be tested. Blood is usually put into tubes which have specific purposes. Some tubes have additives that clot the blood, others do not.

After placing blood in the correct tubes, it should be stored in the refrigerator before being sent to the lab.

How long can blood be stored in the refrigerator?
In the table below, please write what each tube is used for.

<table>
<thead>
<tr>
<th>Tube Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 Serum Sep Clot Activator</td>
<td></td>
</tr>
<tr>
<td>K2E K2EDTA</td>
<td></td>
</tr>
<tr>
<td>Sodium Citrate 3.2%</td>
<td></td>
</tr>
<tr>
<td>Li-Heparin LH1.3</td>
<td></td>
</tr>
<tr>
<td>No Additive</td>
<td></td>
</tr>
</tbody>
</table>
Intravenous Catheterization (IVC)

When pets are coming in for surgical procedures or are sick or dehydrated, the vet may want an IVC placed. IVC are usually placed in one of the cephalic veins, but can be placed in other veins as well if needed.

An IVC is made up of multiple parts and comes in multiple sizes. The “catheter” includes a needle, catheter, filter, case and cap. The needle and catheter is placed (like a blood draw) into the vein. The soft catheter is then pushed into the vein and the needle removed.

This extension set plug directly into the end of the catheter. This prevents blood from leaking out of the end of the catheter and gives direct access to the vein.

This “male adaptor” can also be used to plug the end of the catheter, or can be used to plug the end of the extension set.
Additional tools that you will need will be a syringe of “flush”, tape to secure the catheter and extension set, and vet wrap. Immediately after the catheter is placed it is “plugged”, then taped in place, then it is flushed and finally wrapped to prevent the pet from chewing or pulling it out.

Why do we flush the catheter after placing it?

What are the advantages of having an IVC when a pet is hospitalized?

Fluids

Fluids can be given three ways: orally (drinking), subcutaneously (under the skin) or intravenously (into the vein). When a pet is sick they may not want to drink water, so they become hydrated and need fluids.

Please fill out the following chart comparing subcutaneous fluids and IV fluids.

<table>
<thead>
<tr>
<th>Subcutaneous fluids</th>
<th>IV fluids</th>
</tr>
</thead>
<tbody>
<tr>
<td>PROS:</td>
<td>PROS:</td>
</tr>
<tr>
<td>CONS</td>
<td>CONS:</td>
</tr>
</tbody>
</table>
In House Lab Work

At MAH we are able to perform a few essential diagnostic tests in hospital. The advantage is that we can get a better idea of what is going on with a pet within a short amount of time rather than waiting for an outside lab. This is important when pets are very sick when they come in!

Blood Chemistry machine:

This machine is used to measure organ functions. Find out two values that this machine can measure and what abnormal readings mean.

1) 

2) 

PT/PTT Machine

This machine measures the blood’s ability to clot. Describe the difference between the PT/PTT values.
Complete Blood Count (CBC)

The CBC machine measures the amount of red and white blood cells, platelets, hemoglobin, and other values. What would be some signs on the CBC if a patient has anemia?

Centrifuge

This machine does not measure any values but it’s a critical part of lab work. Whole blood is spun down in this machine to separate blood and serum before being analyzed. How do you balance the centrifuge before using it?

Sharps such as needles and scalpel blades should be placed in the sharps containers immediately after use. Other materials like syringes, extension sets, and bandage material that may have been contaminated with blood can be thrown in the trash.
Other Diagnostics

Bloodwork is not the only tool that we can use to solve pet’s issues. Other tests like a urinalysis, fecal tests, or cytology can help discover what is making them unwell.

The urine test sticks can show if a pet’s kidneys are working well or if they have issues with their bladder.

What is a refractometer? What does it measure?

A fecal test can test for parasites. A sample is sent out to the lab and the results are received the next day. What are some of the parasites dogs and cats can have? How can they affect humans?

Define a fine needle aspirate:

How long should the slides be left in each dip?
Radiograph and Ultrasound

What happens if a dog eats a sock? Other than the obvious (he now has a sock in his intestines), he might vomit or refuse to eat. All the symptoms that the dog has could also be from a parasite, bloat, pancreatitis, or many other things. That’s why using tools like x-rays and ultrasound can be helpful to narrow down the cause of the illness.

An ultrasound uses sound waves to create a live image. This can be very useful for seeing the digestive tract, organs, blood vessels, and much more, but is not useful for viewing bones as they are too dense. At MAH it’s commonly used to view the bladder for ultrasound guided cystocentesis.

An x-ray or radiograph uses rapidly moving electrons or radiation to create an image. It is especially useful in viewing the skeletal system.

What is the mAs and what does it control?

What are KVPs?

What safety equipment must be worn while operating an x-ray machine?

Based off of the terms to the left, how would a pet be lying if you needed a:

a) Ventral Dorsal xray
b) Dorsoventral xray
c) Lateral thoracic

FIGURE 1-3
Common directional and positioning terminology. The arrows on this Boston terrier represent the following directional terms: A = cranial, B = caudal, C = ventral, D = dorsal, E = rostral, F = proximal, G = distal, H = palmar, I = plantar.
Dental Procedures

Dental health for pets is one of the most underrated tools for keeps pets healthy! Dental health directly affects organs like the heart, liver, and kidneys, not to mention an aching tooth can decrease a pet’s quality of life.

Pet’s should always be anesthetized for dental cleaning. Explain why.

Here is an example of a dog dental radiographs. Identify and label the incisors, canines, premolars, and molars.

Ask a technician to pull up xrays of a tooth abscess, resorptive lesions, and broken roots! Describe what each looks like on x-ray.
In the chart below, identify and draw some of the common tools used in dental procedures and describe their use.

<table>
<thead>
<tr>
<th>Tool name and function</th>
<th>Drawing</th>
</tr>
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<tbody>
<tr>
<td>Periodontal Dental Probe</td>
<td></td>
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<tr>
<td>Elevators</td>
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<tr>
<td>Electronic scaler/hand held scaler</td>
<td></td>
</tr>
<tr>
<td>Dental Drill</td>
<td></td>
</tr>
<tr>
<td>Polisher</td>
<td></td>
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</tbody>
</table>

Scenario: a client comes in with their 15 year old chihuahua who is suffering from heart disease and severe dental disease. Explain to the client how a dental procedure could help their pet’s quality of life.
Surgical Procedures

Surgery can be as routine as a spay or neuter to as involved as an amputation or mass removal. No matter the reason for the surgery, proper protocols must be followed to make sure the pet stays safe while under anesthesia.

List the steps from intake to surgery for a surgical patient’s intake:
1) 
2) 
3) 
4) 
5) 
6) 
7) 

What is intubation? Why is this important?

When is the riskiest time for a patient: before, during, or after surgery? Why? What can you do to minimize risk?
Fill out the chart below of the induction and anesthesia drugs used at MAH.

<table>
<thead>
<tr>
<th>Drug Name (induction or anesthetic?)</th>
<th>Pros</th>
<th>Cons</th>
<th>Dogs, Cats, or Both?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
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Different surgeries call for different surgical tools. Find a surgical pack and describe the following: 1) what is it used for? 2) name of tools 3) function of tools.

List the steps for preparing a surgical pack.
Euthanasia

Euthanasia is a necessary component of veterinary medicine. When pets are too sick or too old and no longer have quality of life the owners may opt to humanely euthanize their pet.

What is a quality of life exam? Why is this performed prior to euthanasia?

What drug is used to euthanize pets? How does it work in the body?

List the steps taken to euthanize a pet.
1)
2)
3)
4)

What are some of the ways that we can ensure a pet is completely deceased? List at least 3.
Integrative Medicine

MAH is classified as an integrative veterinary clinic, which means that alongside traditional Western medicine like surgery and prescription medications, we also offer integrative treatments like supplements, laser therapy, acupuncture, and massage.

What are two supplements that are sold at MAH? List their benefits and how they work.

1) 

2) 

Some medications work in conjunction with supplements with increased benefits. For example, some cancer patients benefit from mushroom therapy alongside their chemotherapy. Are there any other combinations like that currently used at MAH? List them here.
Laser Therapy

Photobiomodulation Therapy, otherwise known as laser therapy, is a treatment that is used every day at MAH, from postoperative incision treatment to arthritis to skin issues. Laser therapy works by delivering non-ionized light sources to tissues to promote healing and regeneration.

What are the three ways that laser therapy promotes healing?
1) 
2) 
3) 

What are some safety concerns for laser therapy and how do we mitigate them?
1) 
2) 

Case Study: Cooper is a 13 year old labrador mix who is overweight. He is suffering from arthritis in his elbows and stifles, and has some stiffness in his lumbar spine. Due to his breed he suffers from allergies as well, and has lick granulomas (“hot spots”) on both his front paws.
1) Input the laser treatments for Cooper in the machine. List the treatments, their duration, and the laser head used.
2) What are other integrative treatments that could help make Cooper more comfortable?
Massage Therapy

Just like humans, pets can benefit from massage therapy and acupuncture! We might not think of pets as getting stressed, but they can suffer from muscle tension and injuries just like people.

What are some of the ways that massage therapy can benefit pets? List at least 3.
1) 
2) 
3) 

Case Study: Bear is a 4 year old catahoula hound mix who recently had a back injury. He has mostly healed but still walks with some stiffness in his hind legs. He also has been having diarrhea, possibly from his pain medication. Discuss with the massage technician the massage techniques that you can use for Bear and why they are effective.

What is a technique that can be used by any technician to help calm dogs and cats while they are in the clinic?
Acupuncture

Acupuncture therapy originated in traditional Chinese medical treatments and is widely used in humans and animals alike. Acupuncture involves the insertion of small needles into the skin in specific locations to decrease pain and promote healing. It can also be combined with electric currents to stimulate the muscles.

Discover some of the common reasons why pets undergo acupuncture therapy. List them here.

Ask about the different kinds of needles and their uses. Which are more commonly used and why?

On the right is a canine chart of meridian points. What is a meridian?
Finally, a pet's health is not limited to how they are physically, it takes into account their mental health too! Pets who suffer from anxiety or behavioral problems can cause stress on their pet parents, which can interfere with the client-pet relationship. Behavioral consults are a way for pet parents to work with staff on how to improve their pet's behavior and overall quality of life.

What are the four most common behavioral complaints seen at MAH?
1) 
2) 
3) 
4) 

What would you suggest for a 7 year old boxer mix who has separation anxiety? This pet will tear furniture, pace, and bark constantly while the owners are away. Refer to the MAH behavioral handouts for tips and products.

What would you suggest to a client who has a 6 month old kitten who has been spraying outside of the litter box?
Notes:
Volunteer Experience Report

Reflection: Please reflect on the information you have learned during your volunteer session. What was the most interesting thing you learned? What was the most surprising? Is there anything you would like to learn more about? You may answer in paragraph or bullet point format.

Total hours volunteered: ______

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References


Mission Animal Hospital
Volunteer Workbook Answer Guide
This is intended to be used as a guide. Since laws, regulations, and best practices are constantly evolving, the answers in this booklet should be used with discretion and should be used as a starting point for further discussion.
The Basics

1) Collect specimens
2) Perform dental prophylaxis
3) Prepare animals and equipment for surgery

1) Restrain pets for examination
2) Set up equipment
3) Maintain cleanliness

Keeping Things Tidy

1) In spray bottles around the clinic with BLUE tape. Dilution: 1oz:1gallon
2) Spray bottles with RED tape. Dilution: between 60-90%, typically 70%
3) Spray bottles with WHITE tape. No dilution.
4) Scrub stations by dental area. Dilution: 1 oz:1 gal
5) By the washing machines. Dilution: 1 tablespoon per gallon
6) By the washing machines. Dilution: 1 tablespoon per gallon.
7) By the washing machines. No dilution necessary, follow listed instructions on package.
1) Different disinfectants work in different ways, so it's important to use them properly to make sure that it's as effective as possible and not causing harm by being misused.

2) Using protective equipment like gloves, mask, or goggles, using correct dilutions, not mixing chemicals

Room and Station Set Up

1) To check if the eardrum is intact and make sure there is no sign of infection or illness.

2) Eye discharge.

3) When a pet appears healthy and the owner says the pet is doing well and just needs a general check up.


5) a) sweep/mop floor b) clean exam table c) clean couch d) make sure cabinet is fully stocked

6) Relaxing music, treats, ADAPTL/FELIWAY, non-slip grips on tables, large dogs stay on floor, clean room

Reading Dog Body Language

1) Offer treats, approach slowly, talk quietly, avoid staring.

Restraining Dogs

1) Approach slowly, use a calm voice, offer the back of your hand for the dog to sniff, offer treats.

2) Muzzles, e-collar.
Reading Cat Body Language

1) Keep loud noises to a minimum, use calming aids (feliway, towel), put pet in higher kennel.
2) Minimize eye contact and loud noises, be gentle but firm.

Restraining Cats

1) Using calming tools like feliway, try a towel with light restraint.

History and Physical Exam

1) Does your pet have any allergies? Is your pet on any medication? What diet do you feed? How often do you bathe them and with any specific shampoo? How long has this issue been present?
2) Matching answers:
   a) Temperature = thermometer
   b) Skin = palpation/hands
   c) Heart and lungs = stethoscope, x-rays
   d) Digestive = palpation/hands, x-rays, ultrasound
   e) Genitals = palpation
   f) Muscles = palpation
   g) Nervous system = palpation
   h) Lymph nodes = palpation
   i) Ears = otoscope
   j) Eyes = ophthalmoscope
   k) Mouth = palpation
Vaccines

1) Between the skin and the muscle, under the skin.
2) Puppies still have antibodies from their mothers. The vaccines are given as the antibodies from their mom are declining in their system.
3) They do not have “adjuvants”, which make the vaccine last longer but may increase the risk of cancer and other adverse reactions.
4) If they have low risk (indoor only), their exposure risk is low and the benefits do not outweigh the drawbacks (ex: cancer risk)
5) 1) draw up vaccine. 2) replace needle, dispose of used needle. 3) administer vaccine 4) cap and throw away needle 5) record vaccine information in medical chart
6) see chart posted by vaccines.

Blood Draws and Placing Intravenous Catheters

1) There are multiple veins and we don't want to damage the cephalic veins.(in case we need to place an IVC)
2) Because we don't want to damage them in case we need to place an IVC.
3) Dehydration, obesity, fractious pet.
4) Two tries and then have someone else try.
5) 22 gauge.
6) 25<22<20<18
7) Applying pressure over the vein to “block” it, make it easier to visualize and puncture.
8) Hold the pet in sternal recumbency or seated. Place hand at elbow and use thumb to occlude vein while gently “rolling” the vein to the correct position.
9) Hold the pet in lateral recumbency. Apply pressure with the edge of the hand on the interior of the hind leg above the stifle.
10) Whole blood can be stored for up to 24 hours, while serum separated blood can be stored for longer.

11) Blood tube chart:
   a) after centrifugation, there will be a stable barrier between serum and blood clot. This allows easy separation of the serum for testing and preserves the blood clot.
   b) Does not contain a stable barrier. Should be used to store serum.
   c) Contains an additive that prevents clotting. Whole blood should be put in this tube first and gently rolled to ensure mixing.
   d) used for testing blood coagulation.
   e) Contains an additive that prevents blood coagulation.
   f) Contains no additive. Should be used to store urine. Can be used for serum but is not recommended.

Intravenous Catheterization

1) To make sure that it is placed properly in the vein and to prevent clotting.
2) Access to the vein to give drugs or give fluids.

Fluids

1) SubQ
   a) pro: no catheter needed, faster and easier, cheaper, can give a large volume at once
   b) cons: takes a long time to absorb, some pets who are fat have a harder time

2) IV
   a) pros: continuous hydration, quick results and absorption
b) cons: more expensive, can't give a large amount at once, affects blood pressure

In house Lab Work

1) PT: extrinsic clotting values, PTT: intrinsic clotting values.
2) Decreased red blood cell count.
3) Place a tube full of water on the opposite side of the blood tube to ensure it's balanced.

Other Diagnostics

1) Refractometer: a tool used to measure the specific gravity in urine. Urine specific gravity compares the density of urine compared to water.
2) EX: roundworms can cause blindness in humans.
3) Fine Needle Aspirate: using a needle to collect cells.
4) Slides should be left in each dip for 60 seconds.

Radiograph and Ultrasound

1) mAs: milliampere-seconds, controls the quantity of total x-ray energy.
2) KVP: kilovolt peak, controls the quality of the x-rays by controlling grayscale. The higher the kVP the lower the contrast.
3) Safety gown, thyroid shield, gloves, hats and any other necessary equipment.
4) How to position the pet:
   a) On their backs, legs extended
   b) On their abdomen, legs extended
   c) Laterally
Dental Procedures

1) Pets should be anesthetized because dental procedures can be painful and stressful. It can cause damage to gums and teeth and potentially break jaws and cause muscle damage if the pet struggles.
2) Dental cleaning can improve organ function, make eating less painful/easier on the pet, increase quality of life, decrease bad breath.

Surgical Procedures

1) Intake steps:
   a) weight and temp
   b) bloodwork
   c) sedation
   d) place IVC
   e) anesthetize
   f) intubate/set up equipment
   g) prep surgical site
2) The placement of an endotracheal tube. It provides oxygen to the patient while they are anesthetized as they don't breathe on their own.
3) After. Complications can arise if a pet isn’t being monitored. Monitor pet post surgery, wait to remove the endotracheal tube until the pet is awake enough.

<table>
<thead>
<tr>
<th>Drug Name</th>
<th>(induction or anesthetic?)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Propofol</td>
<td>(induction)</td>
</tr>
<tr>
<td>Ketamine</td>
<td></td>
</tr>
</tbody>
</table>
5) Steps for preparing surgical packs
   a) Gather necessary tools and ensure they’re cleaned
   b) Place tools + tray + additional supplies in pack
   c) Place chemical indicator in pack
   d) Wrap pack in surgical towel
   e) Label
   f) Place in autoclave

Euthanasia

1) A quality of life exam informs the client of any possible treatments for a pet’s current issues, if any.
2) Euthasol. It works by cerebral death, respiratory distress and circulatory distress.
3) Steps to euthanize a pet:
   a) QOL exam
   b) Sedation
   c) Euthanasia
   d) Paw print/disposal
4) Ensuring that a pet is deceased
   a) Eye reflex
   b) Listen for a heartbeat
   c) Breathing
Integrative Medicine
See handouts for answers, there are multiple.

Laser Therapy

1) How does laser promote healing
   a) Reduce inflammation
   b) Reduce edema
   c) Increase blood flow

2) Possible side effects:
   a) Damage to eyes - wear goggles
   b) Heat - move continuously

Massage Therapy

1) Benefits of massage
   a) Helps with soft tissue tension, adhesions, soreness
   b) Helps relax the sympathetic nervous system
   c) Increases blood flow

2) Linda Tellington’s T-Touch: ear touch

Acupuncture

1) Meridian: a point of high energy concentration

Behavior Consults

1) Most common issues
   a) Leash pulling
   b) Barking
   c) Leash reactivity
   d) Separation anxiety