

Vet Med Applications

T. Dudley

Student Name: _____

Period: _____

Date: _____

Unit I

Safety & Sanitation

Student Packet

Generalizations:

1. Safety hazards come in many forms when working with animals in a medical setting.
2. Chemical cleaners vary in strength and effectiveness at killing different organisms.
3. OSHA is regulating agency that enforces safety measures and practices in the workplace.

Student Expectations:

1C The student learns the employability characteristics of a successful employee. The student is expected to demonstrate knowledge of personal and occupational health and safety practices in the workplace.

Packet Contents:

Section 1: Notes
Section 2: Vocab
Section 3: Handouts
Section 4: Student Activities
Section 5: Review

Schedule:

Day 1: Study Day
Day 2: Analyzing the MSDS
Day 3: Zoonotic Research
Day 4: Zoonotic Research
Day 5: Animal Restraints
Day 6: Drug Schedules
Day 7: Safety and Sanitation
Day 8: OSHA Module
Day 9: Review
Day 10: Evaluation

Grades and Due Dates:

<u>Assignment</u>	<u>Due</u>	<u>Minor/Major</u>
MSDS	_____	Minor
Safety Act	_____	Minor
Vocab Quiz	_____	Minor
Zoo Research	_____	Major
Evaluation	_____	Major





MSDS MATERIAL SAFETY DATA SHEET

Includes 8 sections:

1. Manufacturer Information
2. Hazard Ingredients/ Identity Information
3. Physical/ Chemical Characteristics
4. Fire and Explosion Hazard Data
5. Reactivity Data
6. Health Hazard Data
7. Precautions for Safe Handling and Use
8. Control Measures





Safety & Sanitation TM 1

PHYSICAL HAZARDS

-  Animal injuries – bites, kicking, scratches
-  Back injuries – improperly lifting heavy objects or animals
-  Falls on wet floors
-  Exposure to x-rays

Safety & Sanitation TM 2

CHEMICAL HAZARDS

-  Drugs
-  Cleaning agents
-  Insecticides
-  Anesthetic gases



Many hazardous chemicals are routinely used in veterinary hospitals.

Safety & Sanitation TM 3

BIOLOGICAL HAZARDS

- ☐ Living tissue and organisms
- ☐ Blood
- ☐ Urine
- ☐ Live vaccines
- ☐ Medical waste that has had contact with living tissue (urine soaked blankets, bandage material, etc.)
- ☐ Needles and scalpels "Sharps"

Safety & Sanitation TM 4

ZOONOTIC HAZARDS

- | | |
|--|---|
| <ul style="list-style-type: none"> <input type="checkbox"/> Viruses <ul style="list-style-type: none"> <input type="checkbox"/> Rabies (Hydrophobia) <input type="checkbox"/> Sleeping Sickness (Encephalitis) <input type="checkbox"/> Bacteria <ul style="list-style-type: none"> <input type="checkbox"/> Cat Scratch Fever <input type="checkbox"/> Leptospirosis <input type="checkbox"/> Salmonellosis <input type="checkbox"/> Brucellosis <input type="checkbox"/> Anthrax <input type="checkbox"/> Tuberculosis | <ul style="list-style-type: none"> <input type="checkbox"/> Parasites <ul style="list-style-type: none"> <input type="checkbox"/> Sarcoptic mange <input type="checkbox"/> Toxoplasmosis <input type="checkbox"/> Visceral Larva Migrants (Toxocariasis) <input type="checkbox"/> Creeping Eruption (Ancylostomiasis) <input type="checkbox"/> Fungus <ul style="list-style-type: none"> <input type="checkbox"/> Ringworm |
|--|---|

Safety & Sanitation TM 5

SAFETY SIGNS & EQUIPMENT



Danger



Radioactive



Biohazard



Wet Floor



Dosimeter



Lead Gloves



Lead Apron



Back Brace

Safety & Sanitation TM 6

DRUG SCHEDULES

- ☐ **Schedule I:** no medical use – high abuse
 - ☐ Heroin, Methaqualone, LSD, Peyote, Psilocybin, Marijuana, Hashish, Hash Oil, amphetamine variants.
- ☐ **Schedule II:** accepted medical use – high abuse
 - ☐ Dilaudid, Demerol, Methadone, Cocaine, PCP, Morphine, and cannabis, amphetamine and barbiturate types.
- ☐ **Schedule III:** accepted medical use – medium abuse
 - ☐ Opium, Vicodin, Tylenol w/codine, and narcotic, amphetamine and barbiturate types.
- ☐ **Schedule IV:** accepted medical use – low abuse
 - ☐ Darvocet, Xanax, Valium, Halcyon, Ambien, Ativan, barbiturate types.
- ☐ **Schedule V:** accepted medical use – very low abuse
 - ☐ Lomotil, Phenergan, liquid suspensions.

Safety & Sanitation TM 7

TYPES OF SANITATION

- ☐ **Cleaning** – physically removing all visible signs of dirt and organic matter such as feces, blood, hair, etc.
- ☐ **Disinfecting** – destroying most microorganisms on nonliving things by physical or chemical means
- ☐ **Sterilizing** – destroying ALL microorganisms and viruses on an object using chemicals and/or heat under pressure
- ☐ **Antiseptics** – solutions that destroy microorganisms or inhibit their growth on living tissue

Safety & Sanitation TM 8

COMMONLY USED CHEMICALS

- ☐ **Alcohols** – ethyl alcohol, isopropyl alcohol, ethanol
- ☐ **Aldehydes** – gluteraldehyde, formaldehyde
- ☐ **Chlorine** – bleach
- ☐ **Iodine and Iodophors** – Betadine, iodine
- ☐ **Quaternary ammonias** – Centrimide, Quatsyl-D

Safety & Sanitation TM 9

METHODS OF SANITATION

- ☐ Physical cleaning -- using a chemical with a mop or sponge
- ☐ Cold sterilization -- soaking items in a disinfectant chemical until they are used
- ☐ Dry heat -- incinerating an object or exposing it to flame
- ☐ Radiation -- using ultraviolet or gamma rays
- ☐ Filtration -- removing particles from the air using a physical barrier
- ☐ Ultrasound -- passing high frequency sound waves through a solution to create a vibration that scrubs an object to remove debris
- ☐ Autoclave -- a sealed chamber in which objects are exposed to heat and steam under pressure

Safety & Sanitation TM 10

Unit 1: Safety and Sanitation Key Terms

1. Antiseptics – solutions that destroy microorganism or inhibit their growth on living tissue
2. Aseptic – being free of infection or contamination by microorganism
3. Biohazard – medical waste that could cause infection; needles, scalpel blades, blood, body parts
4. Carcinogenic – cancer causing
5. -cide, -cidal – suffixes meaning to kill
6. Disinfect – to cleanse of harmful organism
7. Dosimeter – a badge that records exposure to radiation that is worn when taking x-rays
8. EPA – environmental protection agency
9. FDA – food and drug administration
10. Incubation period – the period of time between infection and the appearance of clinical signs
11. Isolation – the process of keeping an animal by itself to prevent the spread of disease;
quarantine
12. MSDS – material safety data sheet
13. OSHA – occupational safety and health administration
14. Parasite – an organism that grows, feeds, and lives on or in another organism while contributing nothing to the survival of the host organism
15. Pathogen – any microorganism that causes disease
16. Quarantine – the process of keeping an animal by itself to prevent the spread of disease;
isolation
17. Sanitation – applying practices that make something more acceptable by cleaning it
18. Sharps – biohazard materials such as needles, scalpel blades and syringes
19. Sterilization – the process of killing and removing all microorganisms
20. Virus – a pathogen consisting of a single nucleic acid surrounded by a protein coat and having the ability to replicate only within a living cell
21. Zoonosis – any disease that can be passed from animal to human

Name _____

Types of Safety Hazards

Directions: Using transparencies 2-5, fill in the following information on safety hazards.

Physical Hazards



Chemical Hazards



Biological Hazards



Zoonotic Hazards



Name _____

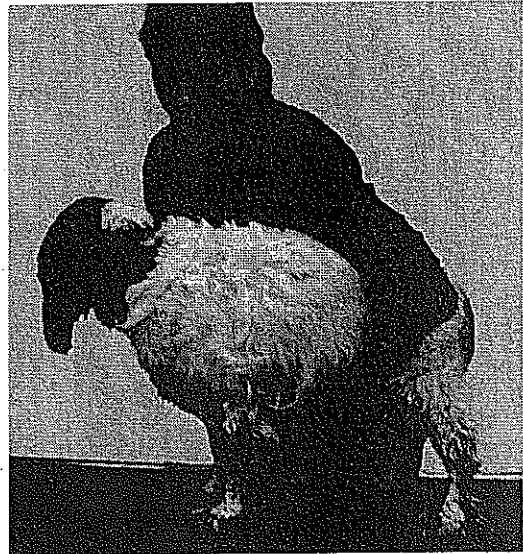
Common Dog Restraints

Restraints for Injections & Examinations

Lateral Recumbency:

Placing a dog on its side varies in difficulty with size and disposition. With the dog standing on a table, grasp the forelegs with one hand. Reach over the back with the other hand to grasp the hind legs. Lean the dog into your chest to support its weight, and slide it gently down your body so that it is resting on its side on the table. **DO NOT DROP THE DOG ONTO THE TABLE.** Small dogs are generally easier to restrain due to size; a large dog may need to be placed in sternal recumbency then rolled onto its side.

1. Once the dog is down, grasp the forelegs in one hand and the hind legs in the other. Place your index finger between the dog's legs.
2. Restrain the neck with the arm that is holding the forelegs by pressing against the base of the dog's skull. This immobilizes the head. Lean your body on the hindquarters to prevent movement.



Sternal Recumbency:

This is the most commonly used restraint for intravenous (IV) injections. The injection site is the cephalic vein that runs down the front of the dog's forelegs.

1. Hold the dog's head with one arm.
2. With the other arm, reach over the dog's back and grasp the foreleg. Apply weight to the dog's back to prevent movement. Apply pressure on the foreleg to raise the cephalic vein.
3. Press on the vein with your thumb, twisting the thumb outward slightly to roll the vein to the top of the foreleg.



Name _____

Common Cat Restraints

Restraint for Injections & Examination

Sternal Recumbency:

Sternal recumbency for the cat is similar to the dog and is mainly used to administer intravenous (IV) injections into the cephalic vein.

1. Grasp the cat's head with one hand, placing thumb and fingers firmly around the jaw. Gently pull the head away from the foreleg. This will prevent the cat from biting and makes it easier to access the foreleg.
2. Use your other hand to grasp the cat's foreleg at the elbow and extend the leg forward. Apply pressure to the cat's back with your upper body to minimize movement.
3. Apply pressure to the cephalic vein with your thumb, making sure to release pressure when the injection is given.



The Stretch:

This is a modified version of lateral recumbency. It is used for procedures, such as intraperitoneal (IP) and intramuscular (IM) injections.

1. Place the cat on its side and use one hand to grasp the scruff. The forearm of this hand will be placed on the table and used to stabilize the cat's back.
2. Hold the hind legs with the other hand, placing your index finger between the legs.
3. Gently stretch the cat out so that its back is resting beside your forearm.



Name _____

Drug Schedules

Directions: Describe what a drug schedule is and fill in the types of drugs listed in each schedule.

A Drug Schedule is...

Schedule I:

Schedule II:

Schedule III:

Schedule IV:

Schedule V:

Name _____

Sanitation

Directions: Using transparencies 7-9, fill in the following information on sanitation.

Types of Sanitation:

Cleaning –

Sterilizing –

Disinfecting –

Antiseptics –

Commonly Used Chemicals:

Alcohols –

Iodine and Iodophors –

Aldehydes –

Quaternary ammonias –

Chlorine –

Methods of Sanitation:

Physical –

Filtration –

Cold sterilization –

Ultrasound –

Dry heat –

Autoclave –

Radiation –

Student Activity 1:

Analyzing The MSDS

Name _____

Purpose:

If an accident occurs with a hazardous chemical it is crucial that all employees know how to read the MSDS and be able to locate life saving information.

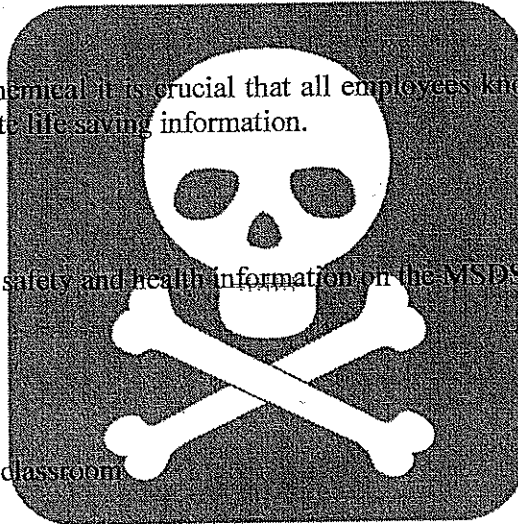
Objectives:

The students will be able locate important safety and health information on the MSDS.

Materials:

Sample MSDS

Several MSDS for chemicals kept in your classroom



Procedure:

Use the sample MSDS to locate the correct information and answer the following questions. Then locate an MSDS for a product used in your classroom and answer the same questions. Questions are located on the next page.

Sample MSDS			Classroom MSDS		
1. What is the name of the product?					
2. What does PEL stand for?					
3. Describe the appearance and odor of this product.					
4. What steps should be taken if the product is spilled?					
5. What are the hazardous chemicals that make up this product?					
6. Describe the first aid procedure to be followed if the product comes in contact with your eyes.					
7. If the product catches on fire, how should it be extinguished?					
8. What is the correct way to store this product?					
9. What types of protective gear should be used when handling this product?					
10. If an emergency occurred with this product how could you get information to help you?					

Sample Material Safety Data Sheet

1. Product Information

Product Name: Acme Super Stain
Product Code(s)- 56-9751, 56-9853, 37-0380, 0-0388, BR2300 size: 120 mL, 500 mL
Chemical Name: Product is a mixture
CAS Number: See Section 2
Formula: See Section 2
Synonyms: None known
Distributor: Acme Supply Company
700 Spencer Road
Corning, NY 14830
Chemical Information: 800-277-1430 (8am-5pm (ET) M-F)
(Transportation Spill Response 24 hours): 800-414-4500

2. Composition/ Information on Ingredients

Principle Hazardous Components: Sodium Phosphate, Dibasic (CAS#7768-79-4) 0.25%,
Potassium Phosphate, Monobasic (CAS# 3378-77-0) 0.63%
TLV and PEL units: None established

3. Hazard Identification

Emergency Overview: Avoid contact with skin and eyes. Do not ingest.
Potential Health Effects:
Eyes: May cause irritation.
Skin: May cause irritation. Ingestion: May cause gastrointestinal discomfort. Inhalation: May cause irritation to respiratory tract.

4. First Aid Measures

Emergency and First Aid Procedures:
Eyes - Flush with water for at least 15 minutes, raising and lowering eyelids occasionally. Get medical attention if irritation persists.
Skin - Thoroughly wash exposed area for at least 15 minutes. Remove contaminated clothing. Launder contaminated clothing before reuse. Get medical attention if irritation persists.
Ingestion - If swallowed, if conscious, give plenty of water.
Immediately call a physician or poison control center. Never give anything by mouth to an unconscious person.
Inhalation - Remove to fresh air. Give oxygen if breathing is difficult;
Give artificial respiration if breathing has stopped. Keep person warm, quiet, and get medical attention.

5. Firefighting Procedures

Flash Point (Method Used): Not applicable
NFPA Rating: None established
Extinguisher Media: Use dry chemical, CO2 or appropriate foam.
Flammable Limits in Air % by Volume: Not applicable
Autoignition Temperature: Not applicable
Special Firefighting Procedures:
Firefighters should wear full protective equipment and NIOSH approved self-contained breathing apparatus.
Unusual Fire and Explosion Hazards: This product will not burn; it is not expected to explode.

6. Spill or Leak Procedures

Steps to be taken in case material is Released or Spilled: Ventilate area of spill. Eliminate all sources of ignition. Remove all non-essential personnel from area. Clean-up personnel should wear proper protective equipment and clothing. Absorb material with suitable absorbent and containerize for disposal.

7. Special Precautions

Precautions to be taken in Handling or Storing: Store tightly closed in cool, dry, well-ventilated area suitable for general chemical storage.

8. Special Protection Information

Respiratory Protection (Specify Type):

A NIOSH/MSHA chemical cartridge respirator should be worn if PEL or TLV is exceeded.

Ventilation: Local Exhaust: Yes

Mechanical (General): Yes

Special: No

Other: No

Protective Gloves: Rubber, neoprene, PVC, or equivalent.

Eye Protection: Splash proof chemical safety goggles should be worn at all times.

Other Protective Clothing or Equipment: Lab coat, eyewash, and safety shower.

9. Physical Data

Molecular Weight: No information available

Melting Point: Approximately 0 C (water)

Boiling Point: Approximately 100 C (water)

Vapor Pressure: Approximately the same as water

Vapor Density (Air=1): 0.1 (water)

Specific Gravity (H₂O=1): Approximately 1

Percent volatile by Volume: Approximately 99%

Evaporation Rate (H₂O=1): Approximately 1 (water)

Solubility in water: Appearance and Odor: Complete, product is an aqueous solution Clear, colorless solution with no odor

10. Reactivity Data

Stability: Stable

Conditions to Avoid: None known Incompatibility (Materials to Avoid): Water reactive agents

Hazardous Decomposition Products: None expected

Hazardous Polymerization: Will not occur

11. Toxicity Data

Toxicity Data: Sodium Phosphate, Dibasic: orl-rat LD₅₀: 17gm/kg

ipr-rat LD₅₀: 1000mg/kg

Potassium Phosphate, Monobasic: No toxic effects data found

Effects of Overexposure:

Acute: See section 3

Chronic: No data found

Conditions Aggravated by Overexposure:

Target Organs: No information available

Primary Route(s) of Entry: Ingestion, skin

12. Ecological Data

EPA Waste Numbers: None

13. Disposal Information

Waste Disposal Methods: Dispose in accordance with all applicable Federal State and Local regulations. Always contact a permitted waste disposer (TSD) to assure compliance.

14. Transport Information

Non-regulated

15. Regulatory Information

EPA TSCA Status: On TSCA Inventory

Hazard Category for SARA Section 311/312 Reporting: Acute

Product or Components	SARA EHS Sec. 302 TPQ	SARA Sec. 313 Chemicals		CERCLA Sec. 103 RQ lbs.	RCR A Sec. 261.33
		Name List	Chemical Category		
Sodium Phosphate	No	No	No	No	No
Potassium Phosphate	No	No	No	No	No

16. Additional Information

The information provided in this Material Safety Data Sheet represents a compilation of data drawn directly from various sources available to us. Acme Supply makes no representation or guarantee as to the suitability of this information to a particular application of the substance covered in the Material Safety Data Sheet. Any employer must carefully assess the applicability of any information contained herein in regards to the particular use to which the employer puts the material.

Glossary

ACGIH American Conference of Governmental Industrial Hygienists

CSA Number...Chemical Services Abstract Number

CERCLA ... Comprehensive Environmental Response, Compensation, and Liability Act

DOT U.S. Department of Transportation

IARC ... International Agency of Research on Cancer

N/A Not Applicable

NTP National Toxicology Program

OSHA ... Occupational Safety and Health Administration

PEL Permissible Exposure Limit

ppm parts per million

RCRA ... Resource Conservation and Recovery Act

SARA ... Superfund Amendments and Reauthorization Act

TLV Threshold Limit Value

TSCA ... Toxic Substances Control Act

Student Activity 2:

Zoonotic Research

Name _____

Purpose:

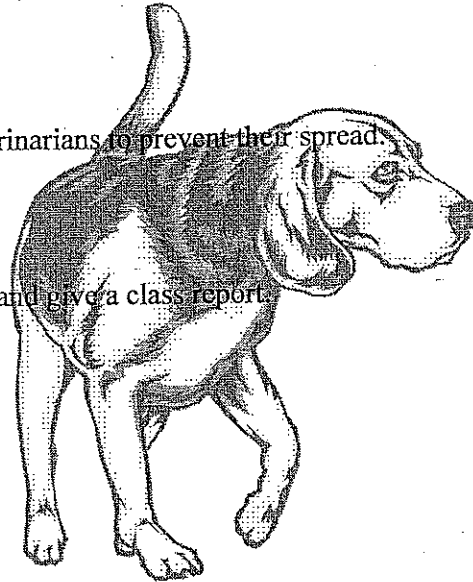
Understanding zoonotic diseases enables veterinarians to prevent their spread.

Objectives:

The students will research a zoonotic disease and give a class report.

Materials:

Internet



Procedure:

Choose a zoonotic disease from Handout-1, use the internet to research it and then answer the following questions. Be prepared to present your report to the class.

1. Disease Category: virus _____ bacteria _____ fungi _____ parasite _____

2. Common name:

3. Scientific name:

4. What species of animal(s) carry the disease?
5. How do the animals get this disease?
6. How is it passed to humans?
7. What are the signs and symptoms for both animals and humans?
8. How will it harm humans if it is not treated?
9. What is the treatment for animals and humans?
10. List specific ways that this disease can be prevented in animals and humans.
11. Where did you find your information? List at least three websites and any other publications used.

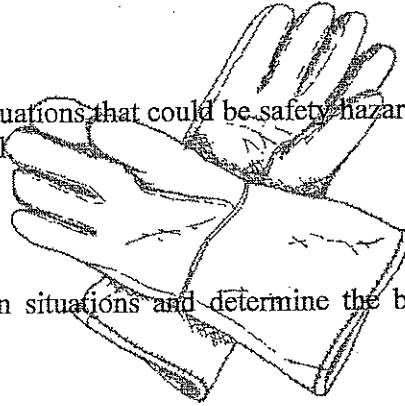
Student Activity 3:

The Safety/Sanitation Situation

Name _____

Purpose:

Every day veterinary staff is faced with situations that could be safety hazards or cause pathogens to spread throughout the hospital.



Objectives:

The students will discuss safety/sanitation situations and determine the best way to handle each situation.

Procedure:

As a group, read and discuss each situation, then determine the best course of action to be taken.

Situations:

1. You are asked to mop the surgery room floor after all the surgeries have been done. When you go to do this, you are unable to find the surgery room mop. You know there is a mop for the kennel area. Should you use this mop? Why or why not?
2. As Carrie is cleaning the surgery room, she notices a pack of sterilized instruments has been opened, but not used. What should Carrie do with the pack?
3. A dog suspected to have Leptospirosis is brought into the hospital. What precautions should be taken to ensure that this dog does not infect other dogs or humans?

4. Jim is cleaning one of the exam rooms and finds several used vaccine syringes. What types of hazard do these represent and how should Jim dispose of them?
5. You are going to assist the vet while she takes x-rays on a parrot. How should you prepare yourself?
6. A new kennel worker starts today and it is your job to talk to him about safety. How would you explain an MSDS?
7. A technician carrying a large bag of dog food slips on a wet floor and hurts his back. How could this injury have been prevented?
8. A cat bites your hand while you're taking it out of its cage. What disease could you get and how could you prevent it?
9. The vet wants you to clean and sterilize a set of surgical instruments. What are your options?
10. Every Friday Jane uses a special disinfectant to clean the exam rooms. She used the last bottle last Friday and the order for a new bottle has not arrived. The only cleaner she can find says "For Use in Outdoor Kennels Only". Should Jane use the cleaner? Why or why not?

Name: _____
Date: _____

Period: _____
Vet Med

Unit 1: Safety and Sanitation Review

Define the following:

1. Cleaning: _____
2. Physical Hazard: _____
3. Filtration: _____
4. Ultrasound: _____
5. Chemical Hazard: _____
6. Biological Hazard: _____
7. Autoclave: _____
8. Cold Sterilization: _____
9. Zoonotic hazard: _____
10. Sterilization: _____

Short Answer

1. What are sharps and how do you dispose of them?

2. What is an MSDS?

3. Restraint basics – explain

4. Be familiar with zoonotic diseases – list the disease and important facts.

5. Be familiar with safety scenarios. Look over the “What would You do”

6. Be able to label safety pictures. (handout)
