A Program for Youth Pork Producers

Lesson Objectives
- Understand each segment’s role in the food supply continuum.
- Understand the concept of a HACCP plan.
- Identify the three types of on-farm pork safety hazards (biological, chemical and physical).

You are just one part of many that make up the food supply continuum. At the completion of this lesson you will understand your role in the food supply continuum. You will also understand what a HACCP (pronounced hass-ip) plan is and the three types of pork safety hazards related to on-farm production.

What is Youth Pork Quality Assurance®?

The Pork Quality Assurance® (PQA®) program was started in 1989 by the National Pork Producers Council in cooperation with the National Pork Board as a voluntary educational program for producers. A youth version of the PQA program was launched in 2003 for individuals ages eight to eighteen.

Since its introduction in 1989, Pork Quality Assurance has become the pork industry’s flagship education program. In June 2007 the Pork Quality Assurance Plus™ (PQA Plus™) program was released to the pork industry. PQA Plus provides producers with information about on-farm Good Production Practices (GPPs) for the promotion of pork safety and pig well-being. Development of the PQA Plus program, which began in 2006, added animal well-being and site assessment components (portions of which were formerly known as SWAP®) to the program.
Why should you complete the Youth Pork Quality Assurance Plus™ program?

The answer is easy. The Youth Pork Quality Assurance Plus™ (Youth PQA Plus™) program comprises two main elements - food safety and animal well-being.

- Food safety refers to the practices that minimize physical, chemical and biological hazards that might be injurious to consumers.
- Animal well-being encompasses producer responsibilities for all aspects of animal care; including proper housing, management, nutrition, disease prevention and treatment, responsible care, humane handling and when necessary, humane and timely euthanasia.

Food safety and animal well-being have become concerns for consumers, both domestic and international.

The Youth PQA Plus™ program provides many benefits to the youth pork producer in relation to food safety and animal well-being. Following the Good Production Practices from the Youth PQA Plus program may help to improve your swine care and management practices. By following good health, nutrition and management procedures you can help your pigs perform efficiently, and provide a safe wholesome product for consumers.

Youth PQA Plus provides a way to:
- Educate producers and help prevent drug residues.
- Help ensure the wholesomeness of pork and pork products.
- Promote consumer confidence in pig well-being.

Educating producers, like you, about withdrawal times, proper injection techniques and avoidance of violative residues from medications and other animal health products has worked! Today’s pork has the lowest residue levels ever.

Youth PQA Plus training is designed to help you and other producers eliminate violative levels of drug residues and ensure the safety and wholesomeness of pork and pork products.
Youth PQA Plus is also a way to demonstrate to consumers that youth producers are properly caring for their pigs.

- Many packers require youth producers they purchase pigs from to have Youth PQA Plus certification.
- County fairs, state fairs and other livestock shows may also require Youth PQA Plus certification.

Stock shows and county and state fairs are always searching for packers that will purchase your show pigs. Packers have expressed concerns about the safety and wholesomeness of the products from show pigs. If you aren’t Youth PQA Plus certified, where are you going to market your pigs? How can you ensure to your packer that your 4-H or FFA project pigs will yield pork products that are safe for the consumer?

Pork Producers’ Projects Enter the Food Chain

Producer Decisions ➔ Food Safety

Quality assurance should be important to all pork producers. Each year pigs from over one million youth pork projects enter the food chain. Therefore you should realize how important it is to produce safe, wholesome food products. The decisions you make may affect the quality of the food you produce and impact the entire pork industry.

Today’s consumers want to buy a product that they can trust to be safe to eat. As consumers, it is their right to demand a product that is safe and wholesome. Therefore, it is up to each person involved in the food supply continuum to give them the product that they want.
**Food Supply Continuum**

In the food supply continuum, everyone is responsible for the safety of the product. Each segment, or role, relies on all other segments to make sure the product remains safe as it cycles through the continuum.

**Producer:** Pork producers, like yourself, start the cycle by raising pigs that are free from violative residue levels and other potential hazards by correctly using animal health products, medicated feeds and providing pigs the proper environment.

**Transportation and Marketing:** Proper transport and care for your pigs until they reach the market is important.

**Harvesting:** At the packing plant, the packer harvests the animals and prepares the carcasses for processing.

**Processing:** During processing the carcasses are usually broken into pieces for retail packaging as fresh or frozen pork or further processed into ready-to-eat products.

**Retail/Distribution:** Pork enters the food supply chain through retail and distribution companies. The retail sector includes grocery stores and other distribution points where meat is sold directly to the consumer.

**Food Service:** Pork is also distributed through the food service industry. This includes any place where food is served, like schools or restaurants.

**Consumer:** Finally the pork product reaches the consumers, who also have responsibility for food safety. Consumers must properly store pork, for example, keeping ham lunchmeat at the proper temperature in the refrigerator to keep it properly chilled and safe. If consumers buy a product that should be cooked, such as a pork loin, they should follow correct cooking procedures for temperature and time.
As the cycle continues, consumers ultimately affect producers by demanding a high quality product.

Each role can affect what consumers think of the pork industry, and each role or segment has a responsibility to maintain high quality pork.

For example, if a pig is harvested and the packer notices bruising, the bruises may have occurred when the animal was on the truck going from farm to market. The bruises may have also occurred on the farm through improper handling or equipment that may have caused injury to the pig. In this example either of two roles in the food supply continuum may have affected a third role. It is your responsibility to make sure your role does not negatively affect any other role. As a producer, you must take steps to ensure that you are taking proper care of your animals. This helps to ensure that you are providing quality meat products.

As a producer you have the responsibility of:

- Providing appropriate conditions for your pigs
  - Your pig should be able to adapt to its environment to maintain good health and physical condition.
  - Maintain and promote the pork industry’s tradition of responsible animal care
    - You can do this through the application of sound animal care practices.

**What is HACCP?**

- **Hazard Analysis and Critical Control Points**
  - A system used in meat packing plants to prevent food safety problems
  - Regulated by the United States Department of Agriculture - Food Safety and Inspection Service (USDA – FSIS)

The USDA has adopted a program designed to prevent food safety problems in meat packing plants. This program is called Hazard Analysis and Critical Control Points or HACCP for short. HACCP is designed to prevent problems before they happen. Government regulations require that all packing plants must use a HACCP plan.
A HACCP plan identifies where and how problems may occur and how to prevent those problems.

Communication between the packer and the pork producer is essential so that the animals supplied to the packer are free from violative drug and chemical residues and physical hazards such as broken needles.

**Hazards**

Hazards can be identified as:

- **Biological Hazards** - The presence of a virus, bacteria, protozoa, mold or parasite that could cause a foodborne illness.
- **Chemical Hazards** - Violative residues in pork from the use of animal health products, such as antibiotics, or other chemicals including pesticides.
- **Physical Hazards** - Any foreign object or matter in a food item that may cause illness or injury to a person consuming the product. An example is a broken needle in a carcass.

If hazards are found in pork, consumers may be afraid to purchase pork and pork products. It is up to you as a pork producer to be responsible with the products you use.

Packers are addressing hazards through in-plant processes, and they ask pork producers to help control hazards on the farm.

As a producer, pork quality starts with you. It is important that producers understand food safety and consumer concerns. Even though you are a pork producer... you are a consumer too! Thinking strictly as a consumer, you would not want to eat a product that you think might make you sick. When making decisions about giving your pig animal health products or medicated feed, put yourself in the place of the consumer. Then, decide what you would do if you knew you had to consume the pork product yourself. Understanding consumer attitudes is the beginning of understanding your role in food safety.
Quality Starts With You
As a producer, pork quality starts with you. The pork industry, including producers, must supply a product that meets or exceeds the quality expectations of the consumer.

Take-Home Message
You are responsible for providing a safe, wholesome product for consumers.

Summary
Your role in the food supply continuum is to help provide safe food by producing pork free from violative residues and other pork safety hazards.

In this lesson you learned about the importance of the Pork Quality Assurance program and your role in the food supply continuum. Remember that you are responsible as a producer, and consumer, to help keep food products safe!

Review Questions
1. You fulfill multiple roles in the food supply continuum. Can you name two or more of them?

2. T/F: HACCP plans are used to prevent food safety problems in meat packing plants.

3. List the three types of potential food safety hazards in meat products.

Answer Key

1. Producer, Transportation, Harvesting, Marketing, Processing, Retail/Distribution, Food Service
2. True
3. Biological, Chemical, Physical
Key Terms

Biological hazard
Chemical hazard
Disease
Drug residue
Good Production Practices (GPPs)
Food supply continuum
Hazard Analysis and Critical Control Points (HACCP)
Medicated feeds
Nutrition
Physical hazard
Swine well-being
Violative drug residues
Wholesomeness
Food Safety
You play an important role in the food supply continuum. As a producer you need to be sure that you are supplying an animal that is free of violative residues and other safety hazards.

Setting Goals
It is important to set goals in life. As a producer and consumer, you may set goals to improve your practices toward providing safe food. List a few goals below.

List a few goals that other individuals in roles in the food supply continuum may have:

Food Supply Continuum Crossword

Down:
1. Raises pigs that are free from violative residues
2. Responsible for proper storage, handling and preparation of food in the home
3. Distributes meat through distribution centers such as grocery stores
4. _______ is when a packer harvests the animals and prepares the carcasses for processing
5. Selling an animal

Across:
6. Distributes meat through serving prepared food
7. Hauling an animal from one location to another
8. Cutting the carcass into meat products
Food Safety
As a consumer you need to be sure that you properly store, handle and prepare food at home.

Hazard Labeling
If the listed items were found in or on pork products, what type of hazard would they be? Label each hazard with the correct category by writing the first letter in the blank.

- Biological
- Physical
- Chemical

_____ Salmonella bacteria
_____ Violative pesticide residue
_____ Broken needle
_____ Piece of glass
_____ E. coli bacteria
_____ Listeria bacteria
_____ Oil or grease residue
_____ Razor blade
_____ Violative drug residue
_____ Piece of plastic

You & Food
Name 2 things you can do to help ensure that the food you eat is safe.
1.
2.

Restaurants & Food
Name 2 things a restaurant can do to help ensure the food you eat is safe.
1.
2.
Food Safety

Every role in the food supply continuum strives to provide safe food products.

### Identifying Roles

List 10 different companies or people that play a role in the food supply continuum. What role do they have in the food supply continuum?

1. __________________________________________
2. __________________________________________
3. __________________________________________
4. __________________________________________
5. __________________________________________
6. __________________________________________
7. __________________________________________
8. __________________________________________
9. __________________________________________
10. _________________________________________

### Individual Role

There are many roles in the food supply continuum. Do you know anyone that has a job that is a part of the food supply continuum?

Now interview the person to see what he or she does to make sure he or she keeps food products safe. List the answers below.

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(Job)________________________
Food Safety
Each role in the food supply continuum can affect the demand for pork products.

Food Supply Demand
Read each story. Then color part of the arrow. Color the top of the arrow if the result of the story is an increase in demand or color in the bottom of the arrow if the result is a decrease in demand.

A restaurant chain does not cook its meat thoroughly for several orders. Several people get sick. Will this potentially increase or decrease the demand for pork?

It is reported in the news that pork is now one of the leanest meats. It was announced that today’s pork is 31 percent leaner than it was just ten years ago. It has 14 percent fewer calories and 10 percent less cholesterol. Will this potentially increase or decrease the demand for pork?

A consumer at the state fair purchases a grilled pork chop for lunch. He takes a large bite and finds a broken needle in the chop. He reports it to the local health officials. Will this increase or decrease the demand for pork?

The state fair is going on. The public loves to walk through the animal buildings. Many of the individuals passing through the pig building comment on how clean and well kept the pigs are. Will this increase or decrease the demand for pork?

Fill in the Blanks
The USDA has adopted a program, called HACCP, designed to prevent food safety problems in ____________

HACCP
What does HACCP stand for?
H __________________________
A __________________________
C __________________________
C __________________________
P __________________________
Food Safety

You must **identify** a potential hazard before you can **prevent** it.

<table>
<thead>
<tr>
<th>Hazards</th>
<th>What is the hazard type? (Biological, Chemical, Physical)</th>
<th>How could you prevent the hazard?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identify three hazards that may be on a pork production operation or farm.</td>
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Lesson 1 • GPP #1
Establish and implement an efficient and effective herd health management plan.

Lesson Objectives

- Describe herd health management procedures that help maintain and improve the health of the herd
- Name and describe appropriate biosecurity procedures, such as cleaning and disinfection of equipment, that help maintain herd health

Keeping your herd healthy is important. It can help your pigs grow to their potential, increase production efficiency and help you provide a high-quality product to consumers. Prevention is the key! It’s easier to keep your animals disease-free rather than try to cure them once they’re sick. After completing this lesson you’ll be able to describe herd health management procedures and name and describe appropriate biosecurity steps that help maintain herd health.

Herd Health Management Plan

Herd health is a key to food safety. Healthy animals grow faster and more efficiently. They also require less treatment, thus reducing the risk of violative drug residues and costs associated with sick animals.

A herd health management plan helps a producer control disease in animals. It can also improve your animals’ health and well-being and increase their efficiency. It usually costs less money to prevent disease than to treat a disease. Prevention includes steps you can take to help your animals avoid getting sick such as vaccinating your pigs. Treatment is curative action taken after a problem occurs such as using an antibiotic to treat a sick pig.

Establishing a herd health plan can be in-depth and detailed or relatively simple. When developing your plan, consult with your veterinarian about your herd, disease problems and review your recordkeeping system.

If you notice that you are having a problem with a certain disease, talk to your veterinarian, find out what is causing the problem and develop a plan to prevent this disease.
Your pig may be exposed to diseases or parasites from other pigs at shows. Your soil may have parasite eggs present and your pig is becoming infected. Your pig’s pen may have previously housed a sick animal and germs are still present.

Developing an effective herd health management program helps you prevent or control potential disease outbreaks. The management program may also reduce the risk of violative residues and costs associated with the treatment of sick animals.

**Veterinarian Herd Health Check**

Regular observations of the herd by your veterinarian help ensure that you will maintain a healthy herd. This also fulfills the requirements of a veterinarian/client/patient relationship, also known as a VCPR.

During a scheduled herd health check, your veterinarian can observe the pigs in the production environment. The veterinarian can also review vaccination and treatment records while evaluating the current health status of the herd. When purchasing an animal, be sure to ask when vaccinations and parasite control, such as deworming, last occurred. You will want to know when your pig needs its next vaccination or needs to be dewormed. By providing vaccinations and parasite control you are helping prevent your animal from getting diseases or parasites that can affect its rate of growth, overall animal performance and well-being. When your veterinarian is conducting a herd check you should take time to discuss any health problems you have noted since the last visit. Many times your veterinarian can provide a “fresh set of eyes” and may observe subtle problems that you or other caretakers may not have noticed.
**Disease Prevention - Biosecurity**

One thing all producers should be concerned with is biosecurity. Biosecurity is the set of preventative measures taken to reduce the risk of disease introduction or transmission.

Biosecurity includes keeping diseases out of a herd, or keeping a disease already in one or more pigs in the herd from intensifying or spreading to other pigs in the herd. Diseases can be easily transmitted from one farm to another. Many pork operations have a number of biosecurity steps in place and many of these can be utilized to help you on your farm.

Disease pathogens can move from one farm to another through:

- **Rodents, wildlife, birds** - Non-farm animals can transmit diseases or disease agents. Example: It is known that more than ten pig diseases can be carried by rats and/or mice.

- **Pets** - Keep cats and dogs out of the pig barn. Example: Your pet may have visited a neighboring farm where there is a group of sick pigs. You do not want your cat or dog to transmit any illness or disease to your pigs.

- **Vehicles and equipment** - Disease pathogens may be present on vehicles or equipment. Example: Borrowing a scale from your neighbor or sharing show equipment.

- **Humans** - Disease can be transmitted by humans too. Example: Visiting multiple farms in one day when purchasing pigs.

- **New animals** - Introducing new animals or animals that have been off-site. Example: Pigs that have contacted other pigs or facilities such as going to a show.

- **Clothing and shoes** - Clothing and footwear can be sources of disease agents. Example: Wearing the same boots without cleaning and disinfecting from one location to the next may bring in disease in manure stuck on the boots.

- **Air** - Some pathogens may be transmitted by wind and air movement. Example: Locating your pigs close to another pig facility that may have a disease outbreak at some point.

Cleaning and disinfecting a facility is a vital part of controlling the exposure of pigs to pathogens in their environment. A biosecurity plan should include instructions on how to properly clean and disinfect a facility and equipment, including equipment such as feed pans and show sticks that are taken to a show. First, remove all organic material such as manure and bedding. It has been estimated that this alone reduces the number of existing pathogens by as much as 90 percent. Next, thoroughly clean and disinfect each room or
pen before introducing new pigs to that area. Be sure to clean and disinfect every area possible so that you do not miss any pathogens. The area should have enough time to become completely dry before you place new pigs in that area. Be sure to discuss which disinfectant to use with your veterinarian before you begin cleaning and disinfecting. Your veterinarian may be able to recommend an effective disinfectant if you are unsure of what to use.

Rodent and pest control should also be included in a biosecurity plan. Rodents and other pests such as birds can compromise biosecurity measures. They can bring new diseases into a herd as well as spread disease from one segment of a herd to another.

To help control rodents, you should take steps to keep them out of your facility by:
1. Denying entrance to facilities and building
2. Removing sources of food that can attract and maintain rodent populations
3. Denying them “cover” or places to live
4. Baiting or trapping to reduce the number of existing rodents

Do not use cats for rodent control as they can spread disease as well.

Reducing the number of mice and rats also reduces the chances of disease!

Some commercial pork operations, like the ones you may visit when purchasing your pigs, may include these steps in their biosecurity plan:
- **Cleaning and disinfecting** buildings and equipment, especially when introducing new animals
- **Asking all on-farm visitors** to wear plastic boots over their footwear
- **Limiting who is permitted on the farm** - They may limit the vehicles and number of people. When doing so, most producers require that you may not be on another farm for 24 hours (or more) prior to visiting their farm. This “down-time” is to prevent the introduction of new diseases or pathogens onto the producer’s farm.
- **Shower-in and shower-out** - He or she may also require you to shower-in and shower-out. This means that you have to shower on-site before entering
and before exiting a facility. You are required to leave all your clothing, and jewelry on the “dirty” side of the shower and wear farm-supplied clothing and footwear on the “clean” side of the shower. This helps ensure that you are not carrying any diseases or pathogens on your hair, clothing or shoes from the outside of the barn into the barn.

As a fellow producer you should respect and observe these requirements. It is even a good idea to take these steps on your own to prevent disease from entering your herd. For example, even if the herds you visit don’t require it, you may want to wear a new set of disposable plastic boots at each location that you visit to prevent bringing diseases home to your herd.

**Take-Home Message**

Pork producers need to take steps on their farm to maintain and improve the health of the herd.

Objectives for youth producers include:
1. Develop a herd health plan with your veterinarian
2. Develop a biosecurity plan for your operation with your veterinarian
3. Implement specific biosecurity measures that you have identified
4. Respect fellow producers’ biosecurity

**Summary**

- A herd health plan can prevent disease in your pigs helping to keep them healthy
- Biosecurity should be a part of your herd health plan

Remember your pigs’ health is your responsibility. Prevention of disease is one of the major things you can do for the health of your animals. You’ve learned how important a herd health management plan is. You have also learned that biosecurity procedures are important to include in your herd health plan. These can be anything from limiting on-farm visitors to pest control.
Review Questions

1. T/F: It usually costs less money to prevent disease than to treat a disease.

2. T/F: You, as a producer, should involve your veterinarian in creating your herd health plan.

3. What are three things that could be included in your herd health management plan?

4. T/F: A herd health plan should include regularly scheduled veterinarian herd health checks.

5. T/F: Biosecurity includes keeping diseases from entering a herd and keeping a disease already in one or more pigs in the herd from intensifying or spreading to other pigs.

6. T/F: Vehicles and equipment can be involved in the spread of pathogens and disease from one farm to another.

7. T/F: If you have six pigs or fewer, you do not need to take biosecurity measures on your farm.

8. What is the first step in cleaning and disinfecting your facilities?

9. T/F: Rodent control is a part of biosecurity.

10. List three biosecurity measures that can be taken on a swine farm.

Answer Key

1. True
2. True
3. True
4. True
5. True
6. False - No matter the number of pigs, you should always take biosecurity measures.
7. True
8. True
9. True
10. True

Biosecurity plan, Rodent/pest control, Cleaning and disinfecting procedures.

Biosecurity plan, Rodent control, Vaccination plan, Biosecurity plan.
Key Terms

Biosecurity

Cleaning and disinfecting

Herd health management plan

Rodent and pest control
A herd health management plan helps keep your animals healthy.

**Herd Health Plan**

What is a herd health plan?

List 3 items to include in your herd health plan.

1. ______________________

2. ______________________

3. ______________________

**Setting Goals**

List three goals that a herd health plan can help you achieve when raising your pigs.

1. ______________________

2. ______________________

3. ______________________

**Keeping Records**

How will keeping records help you when creating or reviewing your herd health plan?

1. ______________________

2. ______________________

3. ______________________
Biosecurity measures should always be taken to prevent disease and the spread of pathogens.

**Biosecurity Word Search**
Find the words in the grid. Words can go horizontally, vertically and diagonally in all eight directions.

Boots   Facility   Pigs
Clean   Limited Visitors Prevention
Disease   Pathogens   Rodents
Disinfectant   Pest Control

**Cleaning & Disinfecting**
Place a number to the left to put the tasks in order from 1-4.

___ Remove organic material
___ Allow pen to become completely dry
___ Introduce new pigs
___ Thoroughly clean and disinfect each room

**Benefits**
Name some of the benefits of having a herd health management plan.
Cleaning and disinfecting your facility before new animals arrive can prevent disease outbreak in your animals.

**Herd Health and Biosecurity**

Check YES if the task should be included in a herd health plan or is a proper biosecurity step, otherwise check NO.

<table>
<thead>
<tr>
<th>Task</th>
<th>YES</th>
<th>NO</th>
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<tr>
<td>Consult your veterinarian about your herd health.</td>
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<tr>
<td>Allow your cat to spend a lot of time with your pig so it is not lonely.</td>
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<td>Consult your veterinarian about current disease problems.</td>
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<td>Clean your animals’ pens as little as possible.</td>
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<td>Review your recordkeeping system with your veterinarian.</td>
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<tr>
<td>Change feeds often so that your animal will gain the most weight possible.</td>
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<td>Discuss current vaccination plan with your veterinarian.</td>
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<td>Schedule regular herd health checks with a veterinarian.</td>
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<td>Move your pig from one pen to another without disinfecting the pen first.</td>
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<td>Take biosecurity measures in your operation.</td>
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<td>Contact your local rodent/pest control personnel for a thorough rodent analysis.</td>
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<td>Take steps to decrease the rodent population on your pig operation.</td>
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<td>Clean and disinfect all show ring supplies.</td>
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<td>Consult with your veterinarian about an effective disinfectant.</td>
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<td>Weigh your pig daily to ensure weight gain.</td>
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**Cleaning & Disinfecting**

Do you clean and disinfect your pig’s pen before you bring it home? __________

How do you currently clean and disinfect your pig’s pen? _________________

________________________________________________________________________

What should you do differently? _____________________________

________________________________________________________________________
Lesson 2 • GPP #2

Use a veterinarian/client/patient relationship (VCPR) as the basis for medication decision-making.

Lesson Objectives

- Identify the requirements of a VCPR
- Understand the Food and Drug Administration's (FDA) requirement that prohibits extra-label use of drugs in medicated feeds
- Explain and understand over-the-counter, prescription, extra-label use and veterinary feed directive drugs

Veterinarian/Client/Patient Relationship

If you have a working relationship with your veterinarian, he or she will be able to advise and guide you in determining which medications are appropriate and when to use them as part of your pig project. This relationship is called a veterinarian/client/patient relationship or VCPR. You are the client and your pig is the patient.

What is needed for a VCPR?

The veterinarian must:

- Have assumed the responsibility for making medical judgments regarding the health of the animal(s) and the need for medical treatment
- Have working knowledge of the animal and/or operation
- Be readily available for follow-up and consultation, and

The owner/caretaker of the animal agrees:

- To follow instructions of the veterinarian

Establishing this relationship helps the veterinarian gain a working knowledge of your animals and your management practices. This relationship is important to the health of your animals and to prevent violative drug residues.

This relationship also means the veterinarian has seen and has knowledge of the animal(s) and has discussed a health plan or any treatments with you.
Treatment decisions should be made by you and your veterinarian, not the feed salesman, equipment dealer or neighbor. If a veterinarian has agreed to evaluate and/or medicate an animal, any instructions for treatment must be followed by the caretaker if the VCPR is to remain in force. Medicating your animal more often, with different dosages or different routes of administration than instructed by your veterinarian, means that you have not maintained your part of the VCPR.

**Benefits of a VCPR**

Your veterinarian will be able to:

- Initiate a preliminary diagnosis much faster
- Assist you with withdrawal times and recordkeeping
- Provide “extra-label” drug use when appropriate
- Readily follow-up

You should always maintain your part of the VCPR. Having a VCPR helps your veterinarian become familiar with your animals and practices and can help the veterinarian make accurate judgments and medication decisions. He or she may be able to initiate a general or a preliminary diagnosis of the medical condition of your animal. Your veterinarian will also be readily available for follow-up calls in case your pig has a reaction to the medication, does not improve or has other needs.

For example, your pig may be extremely sick. You may think you need to give it a little more medication than the medication label instructs you to give to make sure your animal gets better. You might think that extra medication would work, but in fact, it is illegal to do this. Only a veterinarian who has the educational background to make these decisions and a working knowledge of your farm and/or medication habits can change the medication’s label instructions, and only under certain circumstances.

If your veterinarian is involved in herd checks at all stages it will be much easier for your veterinarian to diagnose a health problem. Understanding herd history and knowing the entire problem may lead to a more timely and accurate diagnosis. Involving your veterinarian may also increase the treatment options available.
Medication Use

**Label use** – Using an animal health product exactly as it states on the label.

**Extra-label use** – When a veterinarian changes the medication dosage or any other instruction on the medication label.

Your veterinarian has the ability to change the medication dosage, use or route of administration of a medication. When doing so, your veterinarian will provide you with specific usage instructions and an altered withdrawal time, if needed. When provided extra-label use instructions by a veterinarian, you must maintain the altered instructions provided by your veterinarian and strictly follow them. Extra-label drug use can only be recommended by veterinarians.

Use of a drug may become “extra-label” for several reasons...

Your veterinarian may change:

1. Dosage
2. Frequency of administration
3. Route of administration
4. Duration of treatment
5. Condition treated
6. Species or life stage treated

**Examples**

1. The label says to give 5 cc of the drug, but your veterinarian says give 10 cc. *(Extra-label)*
2. Your veterinarian suggests using a drug approved for cattle, but not for pigs, on your pig. *(Extra-label)*
3. The label says to treat your pig twice a day and you treat it at 8 a.m. and 8 p.m. *(Label)*

**Drug Compounding** – The mixing of two or more drugs to make a different medication.

Interactions between the different components may lead to a new medication that acts in a different manner than either one of the individual components. This makes setting a withdrawal time difficult. The use of compounded drugs may result in adverse reactions or the death of animals. Veterinarians have special training to help them with drug compounding issues. A veterinarian with a VCPR is permitted to compound FDA-approved drugs following rules very much like those for extra-label use. The veterinarian is then responsible for the safety and efficacy of the compounded drug. Compounding by anyone other than a veterinarian with a VCPR, including you, is illegal.

**Medicated feed** – Feed containing an animal health product. Medicated feed must be fed according to the label.
Feed medication is another method a drug can be administered to animals. Feed medication can only be used as directed on the label. It is illegal for you, or your veterinarian, to feed, or direct the feeding of medicated feed in a way other than according to the label.

**Veterinary Feed Directive (VFD):** A category of animal drugs created by the Animal Drug Availability Act of 1996. This category is specific for new/approved antimicrobial drugs used in feed to treat disease. The FDA determines which drugs are VFD drugs. These drugs must be ordered by your veterinarian.

You may not buy Veterinary Feed Directive (VFD) products and store or use them on the farm unless you hold a valid feed mill license, are a distributor of VFD feeds or have a valid VFD issued by your veterinarian.

Remember, medicated feed is a form of medicine. It must be handled, stored and fed according to the label. Extra-label use is not permitted, even under veterinary direction! The FDA requires that all medicated feeds carry the following information on the bag or tag:

**Medicated feed tag**
- Purpose or indication of the medication
- Directions for use
- Names and amounts of all active drug ingredients
- Withdrawal period
- Warning against misuse

The first is the purpose of the medication. The FDA evaluates drugs for effectiveness in growth promotion, disease prevention or disease treatment. Purposes that have been adequately tested and approved will appear on the label.

The next is directions for use. Use medicated feed at proper levels and do not mix inappropriately or use unapproved combinations.

The label should also contain the names and amounts of all active drug ingredients.

Medicated feed labels also contain the withdrawal period. The withdrawal period is the amount of time required for the medication to be metabolized, broken down or otherwise rendered inactive by the animal's body. Meeting withdrawal times prior to harvest helps ensure safe and wholesome meat products. When required, a warning or caution for withdrawal for the particular drug contained in the feed will be on the label.

Finally, there should be a warning against misuse. This will explain any adverse effects from incorrect use such as using improper levels or feeding at the wrong stage of production.
To help ensure your animal’s safety, you should read and understand the entire label before feeding medicated feed.

Do not give any additional drugs to animals on medicated feed without your veterinarian’s approval.

Avoid contamination of medicated and non-medicated products. Contamination may happen in many ways. One of the most common ways contamination occurs is from not properly cleaning equipment, such as mixers and feeders, that have been used for medicated feed.

**Classes of Medications**

There are two main classes of medication or drugs: Over-the-Counter and Prescription.

- **Over-the-Counter (OTC)** – Can be purchased by you at veterinary clinics, feed or farm supply stores and from animal health salespeople.
- **Prescription (Rx)** – Only available on order of a veterinarian

Prescription drugs are those for which the FDA requires professional oversight. These drugs are available only through veterinarians, or pharmacists and distributors and only on the order of a veterinarian. The manufacturer’s label will have the statement “CAUTION: Federal (USA) law restricts this drug to use by or on the order of a licensed veterinarian,” identifying this drug as a prescription product. The veterinarian will supply information about animal identification, dose, route, frequency of administration and any withdrawal time along with his/her name, address and phone number.

**Medication Label**

- Uses
- Dosage
- Administration
- Withdrawal time
- Storage and/or handling

Every drug approved for use in swine has labeled instructions. Over-the-counter and prescription drug labels will have exact printed instructions on dose, administration, withdrawal times and storage and handling.

**Residue Testing**

Situations may occur that might make you question the proper withdrawal time. Animals sometimes lose their ear tags or get out of their pens and eat medicated feed. Sometimes treatment records are lost or destroyed. When you are questioning the residue status of an animal, testing for residue is necessary. The risk to your reputation, as well as that of the pork industry, far exceeds the cost of having the animals tested before marketing.
Countries importing U.S. pork may have different maximum residue levels. With the sharp increase in export demand it is important that we satisfy these important customer requirements.

**Benefits**
- You keep your good reputation
- The cost of testing is lower than the cost of giving the pork industry a bad reputation
- Helps satisfy export market requirements

You should find a testing laboratory and know where to purchase a testing kit prior to having a residue question so you will know what to do to have your animal tested if the need arises. Whenever you question the residue status of an animal you should have the animal tested. It is better to be safe than sorry.

**Take-Home Message**
- Establish a VCPR with a veterinarian
- Always read and follow medication label directions (unless otherwise directed by your veterinarian)
- Always read medicated feed tags and follow directions accordingly

The pork industry, including producers, must supply a product that exceeds the quality expectations of the consumer. One way this is accomplished is by using medications and medicated feeds according to their labels. As a producer you should take steps to establish a VCPR with a veterinarian and follow medication label instructions at all times unless your veterinarian provides instructions for extra-label use.

**Summary**
- Maintain a VCPR
- Use medication properly

Remember your pig’s health is your responsibility. Using medications properly will help keep your animals healthy and help supply safe food products to the consumer. Maintaining a VCPR will help ensure that your animals receive proper medical care and that you are choosing and administering medication properly.
Review Questions

1. T/F: Medical decisions for your pigs should be made by the feed salesman, equipment dealer or neighbor.

2. T/F: One benefit of a VCPR is that your veterinarian will be able to assist you with withdrawal times and recordkeeping.

3. T/F: Scheduling regular herd checks with the same veterinarian is one part of establishing a VCPR.

4. T/F: Extra-label drug use can be recommended by anyone.

5. T/F: A drug may be considered as being used in an extra-label manner if your veterinarian tells you to give your pig medicine more frequently than the label states.

6. T/F: It is okay to increase a drug dose on your own.

7. T/F: Drug compounding may result in a new medication that acts in a different manner than either one of the individual components.

8. T/F: A veterinarian can provide extra-label instructions for medicated feeds.

9. What does the “warning against misuse” on a medicated feed tag explain?

10. T/F: Withdrawal time is the time after last feeding/treatment required for a drug to clear the pig’s system, or to be rendered inactive and residue levels to be reduced to non-violative levels.

11. T/F: If your pig eats all of the medicated feed provided, you do not need to clean the feeder out before using it for another pig.

12. T/F: Over-the-counter medication is safe for any human or animal.

13. T/F: Dose, route of administration and withdrawal time can be found on a medication label.

14. T/F: When you are unsure of a withdrawal time, the animal should be tested to see if there is a violative medication residue left prior to the animal being sold or harvested.

Answer Key

1. False - Such decisions should be made by you and your veterinarian.
2. True
3. True
4. False - Extra-label drug use can only be recommended by veterinarians.
5. True
6. False - A veterinarian must authorize an increased dose.
7. True
8. False - Extra-label use of feed medication is illegal. A veterinarian cannot provide extra-label directions for medicated feed.
9. Any adverse effects of using improper levels or feeding at the wrong state of production.
10. True
11. False - You should always clean equipment after use with medicated feed.
12. True
13. True
14. True
Key Terms

FDA
VCPR
Drug compounding
Extra-label use
Herd check
Label use
Maximum Residue Level (MRL)
Over-the-Counter (OTC)
Prescription drugs
Prescription
Veterinarian
Veterinary Feed Directive (VFD)
Veterinarian/Client/Patient Relationship (VCPR)
Violative drug residues
Withdrawal period
With a VCPR, your veterinarian can help you make medical judgments, assist you with withdrawal times and your recordkeeping system, and can provide “extra-label” drug use under special circumstances.

**VCPR**

What does VCPR stand for?

V __________________________

C __________________________

P __________________________

R __________________________

**Responsibility**

You should always maintain your part of the VCPR. What are your responsibilities in a VCPR?

**Benefits**

List three benefits of having a VCPR.

1. __________________________

2. __________________________

3. __________________________

**Fill in the Blank**

Fill in the blanks with the proper term.

A VCPR is when a ____________ has assumed the responsibility for making medical judgments regarding the health of an ____________ and the need for medical treatment, and the ____________ has agreed to follow the instructions given by the ____________.
A producer cannot legally use a drug in a manner other than what is on the product’s label. If a producer does this without a veterinarian’s involvement, it is ILLEGAL.

**Terms to Know**
Define each of the terms below:

Extra-label Use:

Label Use:

**Drug Compounding**
What is drug compounding?

Does each medication act the same when compounded?

**VCPR**
Fill in the information for your veterinarian.

Name: ________________________________

Address: ________________________________

Phone: ________________________________

How often does your veterinarian look at your animals? ________________________________
If you have a good relationship with your veterinarian, he or she will be able to advise and guide you in determining which medications are appropriate and when to use them as part of your pig project.

**Extra-label and Label Use**

Label each situation as **extra-label** or **label**:

The bottle of medication says to give your pig 10 cc of medication 2 times a day. You decide to give it 10 cc at 8 a.m. and 8 p.m.

A bottle of medication states that it is to be used for beef. You think it will make your pig feel better. Your veterinarian agrees and gives you written permission to use the medication for your sick pig. You give 5 cc of medication as your veterinarian directed.

Your pig is very ill. You call your veterinarian for help. He says that you should give your pig 8 cc of medication when the bottle states that you should give 4 cc.

During a herd check your veterinarian noticed that your sick pig was not getting any better. He recommended giving 8 cc of medication three times a day when the bottle stated to give it two times a day.

**Extra-label**

Put a checkmark beside the phrases that are extra-label use.

- Your veterinarian tells you to give your pig more medicine than the label states.
- Your veterinarian tells you to follow the instructions provided on the label.
- Your veterinarian tells you to give your pig medicine more frequently than the label states.
- Your veterinarian tells you to continue giving the medication past the treatment period stated on the label.
- Your veterinarian prescribes a medication to treat a disease other than stated on the label.
- Your veterinarian prescribes a drug for your pig that is not labeled for use in pigs.
A producer cannot legally use a drug in a manner other than what is written on its label. If a producer does this without a veterinarian’s involvement, it is ILLEGAL.

**Medication Use Word Search**

Find the words in the grid. Words can go horizontally, vertically and diagonally in all eight directions.

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R Q H J Y W G N C V T T Q N M W P
B E X T R A L A B E L R F J L R T
M E D I C A T I O N C P N M O N S
H N P N J N G B K M K M K D E O N
D O R X F A T E X X Z T U I J V O
Z I E G M I Y Z G M R C L K J E I
K T S X Q R Q M L A E C N L V R T
T A C Q Y A C M G R S G T Y M T C
T R R C L N I W M R R O C L L H U
K T I X Z I Q L J M G L D Q P E R
K S P P N R T K L B T K K C T C T
J I T B P E D L T E M M R W G O S
T N I N D T X T E T G R H L F U N
Z I O L L E L J R G M A E B K N I
R M N L N V K Y T H A B L P F T G
M D L E B A L F F O A L N H N E P
X A T Y K D R K X L M Q R M T R N
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**Mixing**

If you mix flour and water, what does this make?

How is this like drug compounding?

**Medicated Feed**

Medicated feed is a form of medicine. Can your veterinarian recommend extra-label use?

**Scenario**

You have been treating your sick pig. You lose your medication records and someone has offered to buy your pig. You think that your pig is past the medication withdrawal time but you are not positive. What should you do?
Lesson 3 • GPP #3
Use antibiotics responsibly.

Lesson Objectives
• Identify the principles and guidelines for the responsible use of antibiotics

Responsible Antibiotic Use
• Antibiotics
• Antimicrobials

You may be wondering what type of medication an antibiotic is. Antibiotics are substances that are produced by microorganisms (such as molds or bacteria) and kill or inhibit the growth of other microorganisms, such as bacteria, that cause infections. Antimicrobials are substances that include antibiotics but also include synthetic agents that are created in a laboratory and work in the same manner as antibiotics. Antibiotics and antimicrobials are both types of medication. The term antibiotic is often used to describe antibiotics and antimicrobials.

Antibiotics specifically attack bacteria without harming cells belonging to the organism that produced them. Antibiotics, such as penicillin, kill bacteria by inhibiting the bacteria from making cell walls that are needed for their survival, other antibiotics interfere with a bacteria’s ability to synthesize DNA or specific proteins.

Improper use of antibiotics may lead to the development of antibiotic resistant bacteria that may not be killed by antibiotics, therefore, it is the responsibility of every pork producer to use antibiotics responsibly. Involving your veterinarian will help ensure that you are making the proper medication decisions.

Responsible antibiotic use helps prevent antibiotic resistance

You and your veterinarian share a responsibility to use antibiotics properly to help prevent resistance. Whether antibiotics are used for disease treatment, disease prevention or to improve nutritional efficiency, you and your veterinarian should carefully consider the issue of antibiotic resistance and the potential impact for particular situations. Resistance is the ability of bacteria to withstand the effects of an antibiotic.

The benefits of responsible antibiotic use are:
• Health and well-being of animals
• Food safety
• Human health
Antibiotics do NOT replace good management or proper animal care!

Producers like yourself, veterinarians and other food chain participants share the concerns regarding the use of antibiotics as tools utilized in the production of our food supply. The responsible use of these products is beneficial both for the health and well-being of the animal and for food safety and human health. It is important that you use antibiotics responsibly to minimize the development of antibiotic resistance, prevent drug residues, preserve their effectiveness and to maintain availability of these products. Antibiotics and other animal health products, while important tools for good animal health management, are only one component of a complete herd health plan. Antibiotics are very important for keeping our animals healthy.

Antibiotics should not be used to replace good management, but rather as a supplement to management and should only be used when appropriate.

Pork producers, like you, use antibiotics for three purposes: treatment of illness, prevention of disease and to improve the nutritional efficiency of their animals.

**Treatment of illness** - When an antibiotic is used in animals to overcome an illness.
Antibiotics used in treating illness are typically delivered through injection, feed or water.

**Prevention of bacterial infection** when:
- Animals have been exposed to a bacterial infection
- Animals are currently exposed to bacterial infection
- There is a history of a disease in an operation

Antibiotics are also used for prevention of disease. This is the use of antibiotics in animals that have been, or are being, exposed to a bacterial infection, or when there is a history of disease in an operation. Antibiotics used for prevention are typically given in feed or water although some injectable antibiotics are used to prevent respiratory disease.

**Improve nutritional efficiency** - In certain cases antibiotics are used to improve animals’ feed conversion.

Nutritional efficiency is another reason for using antibiotics. When an antibiotic is used to improve nutritional efficiency it is usually in an attempt to enhance pigs’ feed conversion and is delivered in their feed.
Principles and Guidelines

The National Pork Board has developed the following principles and guidelines to help you use antibiotics responsibly:

1. Take steps to decrease the need for antibiotics
   You can do this through good management by having a herd health plan and by providing proper shelter, feed and water for your animals. By taking steps to ensure biosecurity, you can also help prevent illness or disease in your animals.

2. Determine the advantages and disadvantages of using antibiotics
   Use antibiotics only when they provide measurable benefits.

3. Always use professional veterinary input
   If your veterinarian is helping you choose your medications, he or she may suggest a medication or treatment that is not an antibiotic. Involving your veterinarian will help you make the right medication and care decisions for the health and safety of your animal(s). Having a veterinary/client/patient relationship will help ensure that your veterinarian is involved in your production practices and decision-making.

4. Only use antibiotics following an appropriate diagnosis
   Another principle to follow is making sure antibiotics are being used for treatment only when there is an appropriate clinical diagnosis. Your veterinarian will be able to help make this decision.

5. Limit antibiotic treatment to sick or at-risk animals
   Limit antibiotic treatment to ill or at-risk animals, treating the fewest animals indicated. You should only treat animals that need medication. If an animal does not need medication, antibiotic use should be avoided.

6. Antibiotics that are important in treating antibiotic resistant infections in human or veterinary medicine should only be used in animals after careful review and reasonable justification
   You and your veterinarian share a responsibility to use antibiotics properly to help prevent antibiotic resistance from occurring.

7. Proper handling, storage and disposal of medication and medicated feed is important
   It is important to properly handle, store and dispose of medication and medicated feed. When using medicated feed or water, feeders and waterers should be adjusted so the medicated feed or water is not wasted and spilled where it might end up in the environment outside the barn. Be responsible when handling and storing medication.
**Prevention is the key**

- Implement a biosecurity plan
- Proper animal care
- Hygiene
- Routine health monitoring
- Vaccination programs

Using preventive strategies, such as implementing a biosecurity program, using appropriate animal husbandry, proper hygiene, routine health monitoring and vaccination programs can help decrease the need for antibiotics. You should consider the advantages and disadvantages of all uses of antibiotics, including animal health, well-being, environmental, food safety, and economic impact. The healthier your animals are, the fewer the antibiotics you may need to use, resulting in spending less money and reducing the chances of the development antibiotic resistance.

For example, if you watch your pigs every day you may notice one of your animals is sick. You decide, early on, to treat the sick pig with antibiotics. If you were not monitoring your animals closely you may not have noticed the sick pig until the entire pen of pigs became sick. By noticing and treating the pig early you may have prevented the need to treat an entire group of animals.

**Take-Home Message**

- Follow the guidelines for responsible antibiotic use
- Consult your veterinarian before using antibiotics
- Implement a herd health plan to help reduce the need for antibiotics
- As a pork producer it is your responsibility to use antibiotics properly

**Summary**

If you follow the responsible antibiotic use principles and guidelines you may help prevent antibiotic resistance.

As a producer, you have taken on the responsibility to properly care for your animals. Proper use of medications will help prevent antibiotic resistance as well as violative residues.
Review Questions

1. T/F: Antibiotics are made by microorganisms.
   - False

2. T/F: Antibiotics can be used in swine to improve nutritional efficiency.
   - True

3. T/F: Antibiotics can be used as a substitute for good management.
   - False

4. T/F: Antibiotics can be administered through food, water or injection.
   - True

5. T/F: Antibiotics are only used for the treatment of illness.
   - False

6. T/F: Taking steps to ensure biosecurity can also help prevent illness or disease in your animals.
   - True

7. T/F: It is okay to treat all animals with antibiotics, even if they are not considered at-risk.
   - False

8. T/F: It is okay to use antibiotics labeled for humans for your pigs without justification.
   - False

9. T/F - It is not a problem if a healthy pig finds and eats medicated feed.
   - False

10. T/F: Implementing biosecurity measures may decrease the need for antibiotics.
    - True

Answer Key

1. True
2. False
3. False
4. True
5. False
6. True
7. False
8. False
9. True
10. True
Key Terms

Antibiotic

Antibiotic resistance

Antimicrobial

Clinical

Medication

Microorganisms
The U.S. pork industry has a proud tradition of producing safe and nutritious pork for consumers all over the world. That tradition includes addressing issues arising from the use of animal health products, including antibiotics.

**Food Supply Continuum**

How are you as a producer affected by antibiotic resistance?

**Pork Producers & Antibiotics**

List three reasons why pork producers may use antibiotics.

1. 
2. 
3. 

**Responsibility**

Check all the correct answers:

- It is important to use antibiotics responsibly to
- Minimize development of antibiotic resistance
- Prevent violative drug residues
- Preserve antibiotic effectiveness
- Maintain antibiotic availability
- Maintain your animals’ health
- Increase your animals’ medication tolerance
While antibiotics are very powerful in the treatment of many bacterial diseases, some bacteria have developed ways to resist antibiotics.

**Principles and Guidelines**
List three of the principles and guidelines for responsible antibiotic use that you currently follow.

1. 
2. 
3. 

List one that you plan to implement in your operation this year.

**Goal**
Write one goal about antibiotic use that you have for your operation.

**Treatment, Prevention, Nutrition**
Determine if each statement is true or false.

_____ Antibiotics are used for treatment of illness.

_____ Antibiotics are used for prevention of disease.

_____ Antibiotics are used for nutritional efficiency.
Antibiotic Word Search
Find the words in the grid. Words can go horizontally, vertically and diagonally in all eight directions.

```
F M C E M D N V J N D W R Y H D
Q T T R B L E X K F Z B N S B E G
T T Z A D P P F G W T N P C P N
W R M F T H Y E K F O G N N Q Z
V U V L X N C F L N I L A L J R Q
Q S H E K J E V O T D T R N W L F
W T E W Z J K M C O S A J F N R C
C W A L Z X J U E I D Y B C C O R
I O L A D F R M S G W S L L N L K
T R T M B T J E L L A T U S E E X
O T H I S H R O N R X N U P H B L
I H J N L G Y G T K J M A K P A X
B Y I A U A N K N V E T M M N L N
I N N R L D Y D T R Q R T V L R Y
T T D T Q P P R O D U C E R R K Z
N D Y L B V E T E R I N A R I A N
A Y T I L I B I S N O P S E R M R
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Minimize Antibiotic Use
List 3 things you can do as a producer to minimize the use of antibiotics in your operation.
1.
2.
3.

Antibiotic Use
List three antibiotics you have given your pigs in the past.
1.
2.
3.
Identify and track all treated animals.

Lesson Objectives
- Identify tools and methods for identification of animals.
- Explain the importance of identifying and tracking all treated animals.

Proper identification is a component of good management. In this lesson, you will learn about methods used to identify pigs, both individually and in groups. You will also learn the importance of tracking medicated animals.

Animal Identification
Good swine management includes proper identification of your pigs. The decision on the method of identification to use should be made even before tracking an animal is necessary.

Swine identification is an important management tool. It can be used to record performance measurements, to track treated pigs, ownership and movement, and disease outbreaks.

There are two methods of animal identification, permanent and temporary.

**Permanent**
- Ear notches
- Tattoos

**Temporary**
- Ear tags
- Paint brands
- Marking crayon/stick marks

**Ear Notches**
One permanent method of identifying individual pigs is through ear notching. Ear notching systems may be site-specific. You should keep records of the specific system you use. One method uses the pig’s right ear to denote the litter number and the left ear to identify the piglet number. The notches, symbolizing specific numbers, are added together for each ear and then read starting with the litter number. For instance, piglet 23-4 was born in the 23rd litter and was the fourth pig identified. The
ear can basically be drawn in half from the tip of the ear down the middle to the base. Imagine another line going from the top of the ear to the bottom of the ear, halfway from the tip and you have divided the ear into quarters (quadrants).

With the exception of the number 1, the notch numbers are in multiples of three (1, 3, 9, 27, 81). With the exception of the number 81 at the very tip of the ear, up to two notches may be placed in each quadrant. By adding the notches together, producers can identify up to 161 distinct litters with this system. Some producers have made modifications so that more litters can be identified.

The lower quarter of the ear closest to the head identifies the number 1. The lower quarter of the ear farthest from the head is the number 3. The top quarter of the ear farthest away from the head is the number 9. The top quarter of the ear closest to the head is the number 27.

Taking a notch out of the tip of the ear denotes the number 81. Obviously only one notch is permitted here. The pig's left ear identifies the pig number and follows the same basic structure, except that the numbers 27 and 81 are not used because litter sizes are generally smaller.

If done consistently, ear notches are permanent forms of individual identification. They seem complicated at first, but are easy to read with practice.

This pig would be identified as 2-12. In the right ear, which is the litter number, the pig has been notched twice in the 1 position. By adding 1 plus 1, we get the litter notch of 2.

In the pig identification ear, the left ear, the pig has been notched in the 3 and 9 position. By adding 3 plus 9, we get the pig identification number of 12.

See how easy it is once you know what each notch position represents?
Tattoos

Tattoos can also be used for swine. The advantage of using tattoos for identification is that they are permanent and not easily altered. Like an electronic identification system, they are hard to read from a distance. This can create a problem when you are searching for a specific pig in a pen.

Ear Tags

Ear tags are also a common form of swine identification. Most ear tags are easily read from a distance. They are great to use for daily management and are inexpensive, however, they can be easily ripped from the ear leaving no identification on the animal and may be cumbersome to apply. Ear tags are often used for show identification on finisher pigs that may be projects like your animals. Some ear tags include electronic identifiers. These types of ear tags are computer-friendly, but may be hard to read from a distance and can be expensive. Your pigs may have ear notches that were placed on your animal at the location where it was born and an ear tag for show record purposes.

Paint Brands & Crayon/Marking Stick Marks

Another form of identification that can be used is a paint brand or crayon/marking stick mark. Each of these methods is visible from a distance and easily applied, however, they can easily be washed off or wiped off, or rubbed onto pen mates. They are not permanent forms of identification, but are useful when immediately moving a treated pig to a sick pen.

Identification of Treated Animals

You may choose to use different forms of identification for tracking medicated pigs. It is important to be able to identify a pig after you have treated it for keeping records and recognizing the animal again. When you treat an animal, you should write down the ear notch, ear tag, identification number or in the case of group identification, the pen number.

Ear notching is also used. This is a permanent method of identification that allows you to easily record and identify the animal treated. A pig is not ear notched just because it is treated, but the ear notches provide a great way to identify swine so that you can find a treated animal again.
Group Tracking

When individual animal identification is not practical, an entire pen can be tracked and retained until the medication withdrawal time is complete. For this to be effective, each pen must be identified uniquely and each pig must be treated in the exact same manner. Each pen must have a name or number that each person who cares for the pigs knows. If every person caring for your animals is aware of each pen’s identification then there should not be any miscommunication about which pen needs treatment or a longer withdrawal time. If you or another caretaker are unsure of the pen identification system in use, the result could be a costly mistake.

When treated animals are grouped in a pen, it is important that the entire group stay together until the withdrawal time is up. Any pig removed from the group should be individually identified and the withdrawal time recorded. You must be sure that each of the animals in the pen meets its withdrawal time prior to harvest.

Identifying Sick Pigs

Sick pigs can often be difficult to spot. When a pig is off by itself with its head and ears down and isn’t eating while the others are, it may be a sign of illness. You should make sure you tell someone and follow your herd health plan for the next steps in caring for the animal. Be sure to identify which pig it is. This can be done by looking at its ear notch, ear tag or other form of identification. Write down the animal’s identification number so that your veterinarian knows which pig you think is ill.

Written Medication Records

Written medication records that include an animal’s identification must be kept on file for at least one year after the pigs have been marketed.

You should keep the records for one year in case there are problems in the food supply as a result of your animal. Always be aware of products used in swine that may end up in the food chain through your animals. This is why it is good to have a form of identification that can stay with your animal from birth to harvest. If your animal has a permanent form of identification, no matter what location your pig is at, it will be identified the same.
When keeping medication records for your pigs you must keep track of the animal identification, medication given, how much was given and when, administration method, who administered the medication, and the withdrawal time (and veterinarian name if extra-label use ordered). This will help you to avoid violative medication residue or the misuse of antibiotics in your animal. Recordkeeping is an important management tool. To maintain customer confidence, producers must be able to document the use of animal health products. Without first identifying animals, there is no way to keep meaningful records.

**National Animal Identification System**

The USDA's National Animal Identification System (NAIS) is an information system that helps producers and animal health officials respond quickly and effectively to animal disease events in the United States. The NAIS is a state/federal/industry cooperative effort to strengthen the animal health infrastructure. The NAIS provides oversight and coordination for the implementation of species specific program standards for identification which have been developed by the pork industry in the form of the Swine ID Plan. Whenever it is possible, efforts should be made to meet the program standards in the Swine ID Plan as part of the NAIS.

**Premises Identification**

Premises identification numbers (PIN) are a key component of the NAIS and Swine ID Plan. A premise identification number (PIN) is made up of seven alphanumeric characters that uniquely identify a physical location on which livestock may be located.

During natural or animal disease disasters Premises Identification Numbers will support:

- Faster traceback capabilities during disease outbreaks
- Faster determination of the extent of an outbreak
- Faster implementation of disease control measures
- Business planning to diminish any effects of a disease outbreak
- Better communications to producers in areas affected by disasters

Premises Identification Numbers will support the development of more comprehensive and effective disease surveillance programs for the swine industry.
For this to work, producers should register their premises or farm through their State to get a Premises Identification Number (PIN). Premises Identification Numbers should be used as part of a producer’s record system to keep track of animal movements. PINs can also be used by producers to purchase official animal identification tags that they can use to uniquely identify individual animals.

**Take-Home Message**

1. Learn how to read ear notches
2. Establish how you will identify your animals
3. Use identification to aid in keeping treatment records

**Summary**

In this lesson you have learned that as a producer you have taken on the responsibility to properly identify your animals so that you can keep accurate records. Animals can be identified in many ways. You should come up with the identification system that works best for you and other caretakers.
**Review Questions**

1. T/F: Animal identification is a management tool that allows you to record the movement of pigs, records which may help in a disease outbreak.

2. List two types of animal identification and give an example of each.

3. T/F: When looking at a pig’s ear notches, the pig’s right ear denotes the pig number and the left ear identifies the litter number.

4. T/F: If ear notching is used for animal identification and adequate records are kept, a pig can be tracked from birth to harvest.

5. T/F: A benefit of using eartags is that they are easy to read from a distance.

6. T/F: Treated animals should be tracked differently than untreated animals.

7. T/F: When treated animals are in a pen or group, it is important that the entire group stay together until their withdrawal time is up.

8. T/F: You do not need to record animals that have been treated for an illness.

9. T/F: Animal identification is considered one management tool.

10. T/F: Animal identification is one item that should be included in records.

**Answer Key**

1. True
2. True
3. False - The right ear is the litter number, the left ear is the piglet number.
4. True
5. True
6. True
7. True
8. False - All animals that have been treated with medication must be recorded.
9. True
10. True
Key Terms

Ear notches
National Animal Identification System (NAIS)
Quadrant
Withdrawal time
Animal identification is an important management tool. Animal identification can be used to track treated animals, track ownership and movement and to track disease outbreaks.

**Animal Identification Word Find**

Find the words in the grid. Words can go horizontally, vertically and diagonally in all eight directions.

```
S X N E P K C I S N N J Y E
J L W M G H J B R O T G R A
D K A G Y Y C L W I V J A R
Q B N M W P J B K T F C R N
K N P A I N T B R A N D O O
P R G Z P N K F T C X X P T
H Q M P D E A K M I R T M C
L Z I M B C R D L F R K E H
R G B L A G D M E I V K T E
S W T T A R N F A T G T N S
V Q W T L M K X T N A V B H
K M R K N V P E V E E E L C
R A H G H K N H R D N N R R
E G C V L W P M F I D N T T
```

**Ear Notches**
**Ear Tag**
**Paint Brand**
**Marker**

**Permanent** Pigs
**Temporary** Sick Pen
**Goal** Treated Animals

**Identification**

Explain what permanent identification is, and what temporary identification is. Provide an example of each.

**Permanent:**

**Temporary:**
Animal identification in the swine industry helps ensure consumer confidence.

**Photo Time**

Photograph (or draw a picture of) three different types of identification. Place them below and identify each one. List one benefit for each type of identification.

__________________________  __________________________  __________________________

__________________________  __________________________  __________________________

__________________________  __________________________  __________________________

**Sick Pigs**

Circle the pig in the pen that you think may be sick.

How would you identify that pig?

__________________________  __________________________  __________________________

How would you recognize the same pig the next day?

__________________________  __________________________  __________________________
Good Management
Animal identification is a good management practice. What role does it play in the swine industry?

How does animal identification impact a treatment record?

Your Management
How do you currently identify and track your animals? Take a picture of the animal identification you use and place below.

Do you think you need to change the way you track your animals? If so, how?

Ear Notching
Draw notches on the pig’s ears to show 12-4. What does the number 12 stand for? What does the number 4 stand for?
Identification Crossword

Across
2. Identification aids in keeping ________.
5. Identification that is computer-friendly.
7. Identification that is permanently written on the animal but is often hard to read.
8. Identification that is easy to read but often wipes off over time.

Down
1. Swine should be able to be tracked from birth to ________.
3. A pen of pigs with the same withdrawal time is called a ________.
4. Identification that is used by many livestock shows.
6. Identification that is permanent and often used on swine.
Lesson 5 • GPP #5

Maintain medication and treatment records.

Lesson Objectives

- Explain the minimum standards of medication and treatment records as defined by the Food and Drug Administration’s (FDA) Compliance Policy Guide (CPG) 7125.37
- Identify the recommended length of time to maintain written medication and treatment records
- Define withdrawal times, how to calculate them and their importance to the pork industry

Maintaining medication and treatment records is a good management practice. Records are simple to keep and will ensure that you are aware of withdrawal times and dates medication was given. In this lesson you will learn the minimum standards of medication and treatment records as defined by the Food and Drug Administration, the length of time recommended that you should keep written medication records, what withdrawal times are and how to calculate them.

Reasons for Records

There are many reasons for keeping records of all medications given to food-producing animals. Keeping and maintaining records is a basic expectation of the FDA. The primary reason is to make sure medication withdrawal times are complete before harvesting.

Medication records provide documentation that medication was used properly such as route, dose, etc. If there is violative medication residue detected in an animal at the time of harvesting and it is traced back to you as a producer, you will be expected to provide complete records.

Medication and Treatment Records

Medication and treatment records can also be used as a management tool especially in a large pig operation. Reviewing records can provide insight into what is happening in your herd. For example, you may determine that you are treating several animals for the same symptoms, and then take steps to prevent other animals from getting the same illness. Treatment records may help you and your veterinarian answer management questions such as: Are more animals being treated this year than last? Do your animals need treatment at all? Similar questions can be important when formulating disease control strategies and caring for your animals.
The Food and Drug Administration has recommendations for treatment records (CPG 7125.37). The FDA suggests that producers maintain medication and treatment records that include:

1. Date treated
2. Animal identification or Pen identification
3. Product used for treatment
4. Amount given
5. Route of administration
6. Who gave the drug (yourself, a parent, etc.)
7. Withdrawal time

<table>
<thead>
<tr>
<th>Date</th>
<th>Animal ID</th>
<th>Product name</th>
<th>Amount given</th>
<th>Route</th>
<th>Given by</th>
<th>Withdrawal time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sept. 22</td>
<td>145</td>
<td>Penicillin</td>
<td>10 cc</td>
<td>IM</td>
<td>Chuck</td>
<td>10 days</td>
</tr>
</tbody>
</table>

You can always keep track of more information than what is required by the FDA. There is more information that may be appropriate for you to keep, such as:

1. **Approximate weight of animal at the time of treatment** – When reviewing records this may help determine if the appropriate dose was given.
2. **Physical signs which prompted the treatment** – This may help determine if the animal, or other animals are showing these symptoms often.
3. **Calculated date the withdrawal will be complete** – This will help ensure that your animal will not have any violative medication residues at the time of show or harvest.
4. **Veterinarian’s name who directed extra-label drug use (when appropriate)** – This is a good reference to have if for some reason there would be a problem with the medication given or a withdrawal time.
5. **Result of treatment** – This will help you reference past treatment results to determine what medications show the best results with your animal.

Medication records are a great way to help keep each individual animal’s health records as well as keep track of the overall health of your herd. **The FDA recommends that producers keep medication and treatment records for at least one year.** This is to help ensure that you are keeping proper records and that there are records for each treated animal that is harvested.

**Withdrawal Time**

It is extremely important to keep good records on medication administration to help meet proper withdrawal times. Failure to observe pre-harvest withdrawal times following the treatment of food animals is one of the major causes of violative residues in the U.S.
Withdrawal time is the amount of time required for the medication to be metabolized, broken down, excreted or otherwise deactivated by the animal’s body. Medication withdrawal times are established by the FDA to ensure human food safety and have been determined and set through research.

Observing withdrawal times helps prevent violative drug residues. If the drug has a withdrawal time, it will be found on the label, package insert or feed tag. When drugs are used in an extra-label manner, the veterinarian must assign an adequate withdrawal time to prevent the presence of any violative residues at the time of harvest.

**Medication Label (sample warning)**

**Warning:** The use of this drug must be discontinued for 30 days before treated animals are slaughtered for food.

When calculating withdrawal times you must remember that each withdrawal day is a full 24-hours starting with the last time your pig was treated or had access to medicated feed/water.

For example, if your pig was last treated at 9:00 a.m. on Friday with a drug having a 5-day withdrawal period, the withdrawal time would be completed at 9:00 a.m. on the following Wednesday.

In the case of medicated feed or water, the withdrawal starts at the time the pig is removed from the medicated feed or water, not the last time you filled the feed bin with medicated feed or you put medication in the water supply. The withdrawal time begins when all the medicated feed is removed from the feeder or the water supply has been cleaned and flushed.

If you are ever unsure when calculating a withdrawal time, be sure to consult with your veterinarian.

**Take-Home Message**

- Maintain medication and treatment records
- Calculate and observe accurate medication withdrawal times
Summary
In this lesson you have learned to follow good animal care practices such as completing medication and treatment records. Keeping medication and treatment records will help you track your pigs’ health and recognize potential problems in your herd. Keeping treatment records will also help you to calculate accurate medication withdrawal times. You must be sure that all medication withdrawal times are met prior to your pig being harvested.

Review Questions
1. T/F: The primary reason for keeping medication records is to ensure that medication withdrawal times are met.

2. List three items of information that the FDA requires on medication and treatment records.

3. T/F: The FDA suggests that producers keep medication records for a minimum of one year.

4. T/F: It is important to identify treated animals to ensure withdrawal times can be tracked to individual animals.

5. T/F: The FDA Compliance Policy Guide (CPG 7125.37) outlines the producer’s responsibility when using animal health products.

Answer Key

1. True
2. Date treated, Animal/Pen ID, Product used for treatment, Amount given, Route of administration, Who gave the drug, Withdrawal time
3. True
4. True
5. True
**Key Terms**

Administering medication

Compliance Policy Guide (CPG) 7125.37

Dosage

Food and Drug Administration (FDA)

Medication and treatment records

Metabolize

Withdrawal time
Medication records help provide documentation that a medication was used properly. Packers are also having an increasing interest in on-farm recordkeeping. If you have records in place, it implies that this good production practice is being followed. Reviewing treatment records can help provide insight to what is happening in your entire herd.

**Medication and Treatment Records**

Medication and treatment records can help you answer management questions about your herd. List 3 questions that treatment records can help you answer. Example: Are more animals being treated this year than last year?

1. 

2. 

3. 

**FDA Requirements**

List 7 items that Federal Drug Administration (FDA) expects producers to include in treatment records.

1. 

2. 

3. 

4. 

5. 

6. 

7.
More Information
List 2 additional items that you could include in your treatment records.
1. 
2. 

Timing and Goal
The FDA suggests producers to keep medication records for a minimum of __________ year(s).

List one goal in relation to treatment records that you have for your operation.

Withdrawal Time
Withdrawal time is the amount of time required for medication to be broken down, deactivated or excreted by an animal’s body. The withdrawal time is dependent on how fast the animal clears the drug from its body and how much medication was given. Observing withdrawal times helps eliminate __________.

Take a picture of a medication label and paste it in the box. Circle the withdrawal time.
## Lesson 5

### Calculating Withdrawal Times

Your pig was last treated at 9 a.m. on Friday the 4th with a drug that has a five-day withdrawal time. Shade in the calendar date when the withdrawal time would be complete.

<table>
<thead>
<tr>
<th>S</th>
<th>M</th>
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<th>W</th>
<th>R</th>
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</tr>
</tbody>
</table>

### Medication and Treatment Record

Your pig has been sick for 3 days. You decide to have your veterinarian look at your pig. He gives it an antibiotic, but gives it an extra-label dosage. He gives it 0 cc of medication instead of the 8 cc of medication the label calls for. The medication is given on Monday the 7th. The medication label says that the normal withdrawal time is 4 days. Your veterinarian says to use a withdrawal time of 7 days. What date is the withdrawal time up? Fill in the information treatment record below.

What other information would you keep track of?

<table>
<thead>
<tr>
<th>Medication and Treatment Record</th>
<th>What other information would you keep track of?</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Medication and Treatment Record</strong></td>
<td>What other information would you keep track of?</td>
</tr>
<tr>
<td><strong>If this is an Extra-label of Rx drug, list the veterinarian’s name, address, and phone number who prescribed or directed the treatment.</strong></td>
<td><strong>What other information would you keep track of?</strong></td>
</tr>
<tr>
<td><strong>Treatment Date/Time</strong></td>
<td><strong>What other information would you keep track of?</strong></td>
</tr>
<tr>
<td><strong>Animal ID</strong></td>
<td><strong>What other information would you keep track of?</strong></td>
</tr>
<tr>
<td><strong>Product</strong></td>
<td><strong>What other information would you keep track of?</strong></td>
</tr>
<tr>
<td><strong>Amount</strong></td>
<td><strong>What other information would you keep track of?</strong></td>
</tr>
<tr>
<td><strong>Route</strong></td>
<td><strong>What other information would you keep track of?</strong></td>
</tr>
<tr>
<td><strong>Person who gave treatment</strong></td>
<td><strong>What other information would you keep track of?</strong></td>
</tr>
<tr>
<td><strong>Instructed Withdrawal Time</strong></td>
<td><strong>What other information would you keep track of?</strong></td>
</tr>
<tr>
<td><strong>Withdrawal Time Completed</strong></td>
<td><strong>What other information would you keep track of?</strong></td>
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<tr>
<td><strong>Withdrawal Completed</strong></td>
<td><strong>What other information would you keep track of?</strong></td>
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<tr>
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<tr>
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<td><strong>What other information would you keep track of?</strong></td>
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<td><strong>What other information would you keep track of?</strong></td>
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<tr>
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<tr>
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<td><strong>What other information would you keep track of?</strong></td>
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<td><strong>What other information would you keep track of?</strong></td>
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<tr>
<td><strong>Instructed Withdrawal Time</strong></td>
<td><strong>What other information would you keep track of?</strong></td>
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<td><strong>Withdrawal Time Completed</strong></td>
<td><strong>What other information would you keep track of?</strong></td>
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<tr>
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<td><strong>What other information would you keep track of?</strong></td>
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<tr>
<td><strong>Instructed Withdrawal Time</strong></td>
<td><strong>What other information would you keep track of?</strong></td>
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<td><strong>Withdrawal Time Completed</strong></td>
<td><strong>What other information would you keep track of?</strong></td>
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<td><strong>Withdrawal Completed</strong></td>
<td><strong>What other information would you keep track of?</strong></td>
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<tr>
<td><strong>Instructed Withdrawal Time</strong></td>
<td><strong>What other information would you keep track of?</strong></td>
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<td><strong>Withdrawal Time Completed</strong></td>
<td><strong>What other information would you keep track of?</strong></td>
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<td><strong>Withdrawal Completed</strong></td>
<td><strong>What other information would you keep track of?</strong></td>
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<tr>
<td><strong>Instructed Withdrawal Time</strong></td>
<td><strong>What other information would you keep track of?</strong></td>
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<tr>
<td><strong>Withdrawal Time Completed</strong></td>
<td><strong>What other information would you keep track of?</strong></td>
</tr>
<tr>
<td><strong>Withdrawal Completed</strong></td>
<td><strong>What other information would you keep track of?</strong></td>
</tr>
</tbody>
</table>

*Your pig has been sick for 3 days. You decide to have your veterinarian look at your pig. He gives it an antibiotic, but gives it an extra-label dosage. He gives it 0 cc of medication instead of the 8 cc of medication the label calls for. The medication is given on Monday the 7th. The medication label says that the normal withdrawal time is 4 days. Your veterinarian says to use a withdrawal time of 7 days. What date is the withdrawal time up? Fill in the information treatment record below.*

*What other information would you keep track of?*
Lesson 6 • GPP #6

Properly store, label and account for all drug products and medicated feeds.

Lesson Objectives

- Explain and understand medication labels
- Understand the importance of correctly storing and handling medications
- Explain drug inventory records and medication and treatment records

To protect a medication from damage, contamination or loss of efficacy you must store and handle medication according to label instructions. Efficacy is the effectiveness of a drug or medication. In this lesson you will learn what information is on a medication label, the importance of properly storing and handling medications and how drug inventory and drug usage records are related.

Medication Labels

All medications must have their use and storage directions printed on the label. If a label says to store the medicine in a refrigerator, then you must keep it in a refrigerator. If it says “Use Entire Bottle” this means you must use the entire bottle once it’s opened or properly dispose of it... it cannot be stored and used later. If you use a medicine like this and you only use one dose, you will have to throw away the rest of the bottle because it will rapidly lose its effectiveness (efficacy). Discarded medication must be properly disposed of.

Reading the medication label is extremely important. If you read the label carefully, you can find all of the information about the storage and approved use of the medication.

To make sure that medication affects your pig in a positive way, you must administer the proper medication and the proper dose. To do this, you must know how to read feed tags and medication labels. Labels contain critical information including the expiration date, lot number, dosage, warnings and cautions, route of administration, storage instructions and active ingredients.

Medication Label (sample storage instructions)

Store between 2° and 8° C (36° and 46°F). Keep dry and away from light.
- The **trade name** is the commercial name given by the manufacturer.
- The **active ingredient(s)** are the chemical name(s) of what makes up the active portion of the medication.
- An **indication** for a drug refers to the use of that drug for treating a particular disease or set of signs/symptoms.
- The **withdrawal time** is the amount of time that must pass after the medication is administered before harvest.
- **Cautions and warnings** on a medication label are items to pay particular attention to when using the medication.
- **Storage instructions** may include exposure to sunlight, temperature and shelf-life.
- **Quantity of contents** is the amount of medication in the container.
- Medication labels always contain the manufacturer’s name. The **manufacturer** is the company that made the product.
- Labels may also have the **distributor’s name** on it. This is the name of the company that distributed the medication.
- The **expiration date** is the date the medication should be discarded.
- The **lot number** is a reference number that the manufacturer uses to determine the batch in which the product was made.
- The **dosage** is also stated on the medication label.

Some medications also have a medication insert. The medication insert will contain the same information as the label along with some additional information.

### Omnibiotic
(Hydrocillin in Aqueous Suspension)

**Directions for use:** See Package Insert

For use in Beef Cattle, Lactating and Non-Lactating Dairy Cattle, Swine and Sheep.

Read entire brochure carefully before using this product.

**For intramuscular use only.**

**Active Ingredients:** Omnibiotic is an effective antimicrobial preparation containing hydrocillin hydrochloride. Each ml of this suspension contains 200,000 units of hydrocillin hydrochloride in an aqueous base.

**Indications:** Cattle - bronchitis, foot rot, leptospirosis, mastitis, metritis, pneumonia, wound infections. Swine - erysipelas, pneumonia. Sheep - foot rot, pneumonia, mastitis; and other infections in these species caused by or associated with hydrocillin-susceptible organisms.

**Recommended daily dosage:** The usual dose is 2 ml per 100 lb. of body weight given once daily. Maximum dose is 15 ml/day.

<table>
<thead>
<tr>
<th>Body Weight</th>
<th>Dosage</th>
</tr>
</thead>
<tbody>
<tr>
<td>100 lb.</td>
<td>2 ml</td>
</tr>
<tr>
<td>300 lb.</td>
<td>6 ml</td>
</tr>
<tr>
<td>500 lb.</td>
<td>10 ml</td>
</tr>
<tr>
<td>750 lb. +</td>
<td>15 ml</td>
</tr>
</tbody>
</table>

Continue treatment for 1 or 2 days after symptoms disappear.

**Caution:** 1. Omnibiotic should be injected deep within the fleshy muscle of the neck. Do not inject this material in the hip or rump, subcutaneously, into a blood vessel, or near a major nerve because it may cause tissue damage. 2. If improvement does not occur within 48 hours, the diagnosis should be reconsidered and appropriate treatment initiated. 3. Treated animal should be closely observed for at least 30 minutes. Should a reaction occur, discontinue treatment and immediately administer epinephrine and antihistamines. 4. Omnibiotic must be stored between 2° and 8°C (36-46°F). Warm to room temperature and shake well before using. Keep refrigerated when not in use.

**Warning:** Milk that has been taken from animals during treatment and for 48 hours (4 milkings) after the last treatment must not be used for food. The use of this drug must be discontinued for 30 days before treated animals are slaughtered for food.

**How supplied:** Omnibiotic is available in vials of 100 ml.
Medicated feed tags also contain this information as well as a listing of the non-active ingredients and a nutrient analysis such as percentages of fat and protein. Always store medicated feeds and feed additives in an area where they will not be contaminated by things such as pesticides, fuel or other agricultural chemicals.

**Medication Dosage**

The dose or dosage is the amount of medication to be given at one time. This information is found on the medication label. An example of dosage is:

A pig has diarrhea and the label says to give 2 cc/100 lb of body weight once daily for two days. The pig weighs 250 lb. The pig’s daily dose is 5 cc. The amount of medication used to treat the animal over two days is 10 cc.

Be sure to record the medication name, dosage and additional required information in your treatment records.

Always double check your dosage calculations prior to feeding or administering the medication.

**Medication Storage**

It is important to store medications under the proper conditions. Many medications lose potency if they are exposed to moisture, direct

---

**Example:**

- **Dosage:** 2 cc per 100 lb
- **How often:** 1 time per day
- **Time:** 2 days
- **Pig’s weight:** 250 lb

2 cc/100 lb x 250 lb = 5 cc daily
light and warm and/or freezing temperatures. All medication should be stored in a clean place to avoid contamination and many medications require storage in a cool, dark, dry space. Storage instructions can be found on the medication label.

You should not store any medication that is past its expiration date. It may no longer be effective or have the same impact. You should properly dispose of all expired medication. Ask your veterinarian for advice on proper disposal in your area.

Some medications are packaged so that when they are opened and/or mixed they must be used the same day (treatment on the next day requires opening a new package). If this is the case, the expiration date is no longer relevant. The expiration date then becomes the date the medication was opened. For example, a medication could have an expiration date of August 20XX but if it is opened on June 18 of this year to treat a sick animal, the medication should not be used after June 18.

**Inventory Records**

Drug inventory records are an additional record that producers, like you, should keep.

Drug inventory records help you to keep track of how much medication is “in stock” or has been purchased for use on the farm. Records can also be used to track how much medication has been used over a period of time.

In commercial operations inventory and usage records can be used to identify trends by comparing the purchases and treatments during a period. The records can also be compared and used for accountability. You can compare treatment and usage records to inventory records for your operation, and if purchases far exceed the amount of medication indicated on treatment records, you should determine if not all treatments are being recorded or if medications are being wasted.

**Take-Home Message**

- Read medication labels prior to medication use
- Store medication according to the label instructions
- Keep medication inventory records

**Summary**

In this lesson you have learned the FDA’s medication label requirements. You have
also learned to read the medication label prior to giving the medication, to make sure the medication is not expired and that it is properly stored before and after use. It is not only important to read the medication label but also to record all medication purchased and used. Remember that the amount of medication purchased and medication used should be equal (after any discarded medication is accounted for).

**Review Questions**

1. List three items found on a medication label.

2. T/F: The dosage is the amount of medication to be given over a week’s time.

3. T/F: Medication is safe to use after its expiration date.

4. T/F: Inventory records should show how much medication is in stock.

**Answer Key**

1. Trade name, Active ingredient(s), Indication(s), Withdrawal time, Precautions/cautions and warnings, Storage instructions, Quantity of contents, Distributor’s name, Expiration date, Lot number, Dosage.

2. False - The dosage is the amount of medication to be given at one time.

3. False - After the expiration date, the medicine may no longer be effective or have the same impact.

4. True - The dosage is the amount of medication to be given over a week’s time.
Key Terms

Active ingredient
Cautions and warnings
Distributor’s name
Dosage
Efficacy
Expiration date
Indication
Lot number
Medication inventory record
Quantity of contents
Storage instructions
Trade name
Warnings
Withdrawal time
To help keep medication use safe you must store and handle medication properly.

**Reading a Feed Tag**

Get a feed tag off an empty bag of feed and attach it in the space below. Answer the following questions about the feed:

- What kind of feed is it?
- Is the feed medicated?
- What size pig should it be fed to?
- What form is it in (pellets, ground, etc.)?
- What ingredients are in the feed?
- Is there a withdrawal time?
- What are the storage instructions?
- How is a feed tag like a medication label?
Reading a Medication Label

Get a medication label off of an empty bottle and attach it in the space below. Answer the following questions about the medication:

What is the medication name?

How is the medication administered (orally, topically, or by injection)?

If it is an injection, what type of injection?

Where on the pig should the injection be given?

How much should you give a 100 lb pig?

Is there a withdrawal time?

What are the storage instructions?
# Inventory and Usage Records

What is a drug inventory record?

What is a drug usage record?

How are the two related?

## Matching

Draw a line between each term and its definition.

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commercial Name</td>
<td>The amount of medication that should be given at one time</td>
</tr>
<tr>
<td>Active Ingredients</td>
<td>Reference number that the manufacturer uses to determine the batch in which the product was made</td>
</tr>
<tr>
<td>Withdrawal Time</td>
<td>Date the medication should be discarded</td>
</tr>
<tr>
<td>Cautions and Warnings</td>
<td>Items to be cautious of when using the medication</td>
</tr>
<tr>
<td>Storage Instructions</td>
<td>Method of keeping the medication when it is not in use</td>
</tr>
<tr>
<td>Quantity of Contents</td>
<td>Name given to the medication by the manufacturer</td>
</tr>
<tr>
<td>Distributor’s Name</td>
<td>Amount of medication in the container</td>
</tr>
<tr>
<td>Expiration Date</td>
<td>Chemical names of the active components that make up the medication</td>
</tr>
<tr>
<td>Lot Number</td>
<td>Name of the company that distributed the medication</td>
</tr>
<tr>
<td>Dosage</td>
<td>Amount of time that must pass after the medication is administered before harvest</td>
</tr>
</tbody>
</table>
Read the medication label below. Write each term next to the matching content on the label.

1. Commercial Name
2. Active Ingredients
3. Withdrawal Time
4. Cautions and Warnings
5. Storage Instructions
6. Quantity of Contents
7. Dosage

**Omnibiotic**
(Hydrocillin in Aqueous Suspension)

Directions for use: See Package Insert

For use in Beef Cattle, Lactating and Non-Lactating Dairy Cattle, Swine and Sheep.

Read entire brochure carefully before using this product. **For intramuscular use only.**

**Active Ingredients:** Omnibiotic is an effective antimicrobial preparation containing hydrocillin hydrochloride. Each ml of this suspension contains 200,000 units of hydrocillin hydrochloride in an aqueous base.

**Indications:** Cattle - bronchitis, foot rot, leptospirosis, mastitis, metritis, pneumonia, wound infections. Swine - erysipelas, pneumonia. Sheep - foot rot, pneumonia, mastitis; and other infections in these species caused by or associated with hydrocillin-susceptible organisms.

**Recommended daily dosage:** The usual dose is 2 ml per 100 lb. of body weight given once daily. Maximum dose is 15 ml/ day.

<table>
<thead>
<tr>
<th>Body Weight</th>
<th>Dosage</th>
</tr>
</thead>
<tbody>
<tr>
<td>100 lb.</td>
<td>2 ml</td>
</tr>
<tr>
<td>300 lb.</td>
<td>6 ml</td>
</tr>
<tr>
<td>500 lb.</td>
<td>10 ml</td>
</tr>
<tr>
<td>750 lb. +</td>
<td>15 ml</td>
</tr>
</tbody>
</table>

Continue treatment for 1 or 2 days after symptoms disappear.

**Caution:** 1. Omnibiotic should be injected deep within the fleshy muscle of the neck. Do not inject this material in the hip or rump, subcutaneously, into a blood vessel, or near a major nerve because it may cause tissue damage. 2. If improvement does not occur within 48 hours, the diagnosis should be reconsidered and appropriate treatment initiated. 3. Treated animal should be closely observed for at least 30 minutes. Should a reaction occur, discontinue treatment and immediately administer epinephrine and antihistamines. 4. Omnibiotic must be stored between 2° and 8°C (36-46°F). Warm to room temperature and shake well before using. Keep refrigerated when not in use.

**Warning:** Milk that has been taken from animals during treatment and for 48 hours (4 milkings) after the last treatment must not be used for food. The use of this drug must be discontinued for 30 days before treated animals are slaughtered for food.

**How supplied:** Omnibiotic is available in vials of 100 ml.

**TAKE TIME** **OBSERVE LABEL DIRECTIONS**
Medication Dosage
Discuss determining the proper medication dose for the four scenarios below.

1. It is May 12 and your pig has diarrhea. The medication label says to give 2 cc/100 lbs of body weight twice daily for 3 days. Your pig weighs 325 lbs. The expiration date on the bottle is May 20. How much medication should you give your pig?

2. On December 5 your pig’s ears are down, and it is breathing very hard. Your veterinarian recommended a medication. The medication label says to give 2 cc/100 lbs once a day. Your pig weighs 150 lbs. The expiration date on the medication is December 4. How much medication should you give your pig?

3. On July 8 it is really hot and sunny outside. Your pig has scraped its leg. You decide to give your pig medication to prevent infection. You drive with your father to the barn to give your pig the medication. Your father had used this medication yesterday and left the bottle of medication on the dash of the truck. The medication label says to give 4 cc/200 lbs. every six hours. Your pig weighs 250 lbs. The medication label says that this medication should be kept at 40°F and in a dark place. How much medication should you give your pig?

4. It is September 18 and your pig is not eating. Your veterinarian says it needs medication and tells you what medication to use. The medication label says to give 1 cc/50 lbs once a day. Your pig weighs 260 lbs. The medication label states that the expiration date is October 10. How much medication should you give your pig?

Medication Storage
A medication label states that it should be stored at 36°F in a dark place. Where should you keep it?

Inventory Record
List 3 medications that you have in stock on your farm.
1. 
2. 
3. 

Recordkeeping
How can you use drug inventory and usage records to review your herd’s health?
Lesson 7 • GPP #7

Educate all animal caretakers on proper administration techniques, needle-use procedures, observance of withdrawal times and methods to avoid marketing adulterated products for human food.

Lesson Objectives

• Name and describe three common ways to administer medications in pork production
• Understand how to prevent broken needles

Everyone involved in treating your pig must know and use proper techniques for administration of medications. In this lesson you will learn the three most common ways to administer medications in pork production. You will also learn measures and methods to prevent broken needles.

Educate Animal Caretakers

Medication labels contain information you need to properly use a product. Every person who may be involved in treating animals should know and use proper administration techniques. You, as a producer, should have an education plan so that everyone involved in animal care learns the responsibilities that go with giving medications to an animal that may enter the food supply chain.

Having a swine project involves cooperation from everyone, including friends and family, that may be helping you. Be sure to teach caretakers how to administer medication properly, including injections; how to identify the animals that have been treated; which pigs belong in which pens and what daily chores need to be done. This will help avoid confusion and help ensure that your pigs get the best possible treatment.

Anyone who cares for your animals should be concerned about your pigs’ health as well as with the prevention of hazards in meat products. This means that caretakers should know where information can be found on procedures, withdrawal times, how to calculate when a withdrawal time is complete, when the animal is safe to market and how to properly use and evaluate needles.
The plan to market animals without violative residues should include all animal caretakers following label instructions, identifying treated animals and keeping treatment records so that everyone can quickly determine if a withdrawal time is complete prior to marketing an animal. Caretakers are also responsible for following your veterinarian’s directions on the care of animals. They should each be made aware of any new or special instructions provided by your veterinarian.

The key to educating your animals’ caretakers is regular communication on animal health and anything “new” on the farm.

**Medication Administration**

Caretakers should be familiar with proper administration techniques.

Typical routes of medication delivery include:
- Injection
- Oral administration
- Topical administration

**Injections** are typically used when treating individual animals.

An additional reason injections are used is because injections may be the only practical way to medicate a pig that is too sick to drink or eat. They also may be the only way to treat an animal with medications that do not absorb well through the stomach of an animal. To give a pig an injection you should first identify the pig and then restrain its movement. By using injection as a way to medicate an animal, there is a risk that broken needles and/or injection site reactions may occur. An injection, using a needle, should NEVER be given to your pig in the loin or ham.

Oral medications are those given through the mouth. Medications given orally can be mixed in your animals’ feed or water or some oral medications can be placed directly in your animals’ mouth.

If you are medicating a large group of animals it is often easier and less stressful if the medication is mixed with the animals’ food and/or water. There is also no risk of broken needles. However, not all medications are available in an oral form.

Medicated feed is often chosen when treating an animal, or a group of animals, for an extended time. You should be sure that your animals receive the medicated feed right away. This means you will have to clean any non-medicated feed out of the feeder prior to filling it with medicated feed. When pigs get sick, one of the first signs...
is often a decreased appetite and reduced feed intake. This means medicated feed may not work effectively if the pigs are already off-feed.

When using medicated feeds it is important that everyone caring for your animals follow the feed tag instructions. Remember extra-label use of medicated feed is ILLEGAL. Unlike other medications, no one, not even your veterinarian, can legally prescribe extra-label use of medicated feed.

Medicated water is also a method of oral administration. This method helps the medication reach your animals quickly. Veterinarians can suggest extra-label use of water medications, expanding your treatment options. However, some water medications have a bad smell or taste resulting in pigs refusing to drink the water.

A third method of giving medication is topically. Topical administration means that you apply the medication on the skin of your pig. Some examples of topical medication are sprays, dusts, pour-ons and dips. Most topical medications are used to control insects and parasites. Check each topical product to be sure it is for use on swine. For example, over-the-counter sun screen is not approved for use on pigs.

**Injection Methods**

Now that you know three ways that pigs are given medication, let’s explore injection techniques a little more. Improper injection techniques cost the pork industry a substantial amount of money each year due to trim loss and physical hazard risks. Injection site reactions, broken needles and lack of product efficacy are consequences of improper injection techniques.

There are five ways to give injectable medications to pigs:

1. **Intramuscular** - in the muscle (IM)
2. **Subcutaneous** - under the skin (SQ)
3. **Intranasal** - in the nasal passages (IN)
4. **Intraperitoneal** - in the abdominal cavity (IP)
5. **Intravenous** - in the vein (IV)

For any type of injection, ensure that the injection site is clean and dry. Use the proper needle length and gauge to ensure the medication is deposited correctly.
Intramuscular

Intramuscular injections should be given in the neck just behind and below the ear, but in front of the shoulder. You should never use a needle to inject your pig in the ham or loin. Intramuscular injections can leave scarring or abscesses. You do not want to have muscle scarring or a blemish in a valuable cut of meat.

Subcutaneous

When giving subcutaneous injections to small pigs, use the loose flaps of skin in the elbow or flank. For larger pigs, give the injection behind the ear at the same location as intramuscular shots. Be sure to slide the needle under the skin away from the site of the skin puncture before depositing the product.

Other Injection Types

Intranasal injections should be given by withdrawing the product from the bottle with a needle and syringe. Once the medication is in the syringe, remove the needle and use the recommended application tip for administering the product. Be sure to keep the pig’s head tilted upward during and immediately after administration to help the medication reach the nasal passages.

Intraperitoneal and intravenous injections should only be used when instructed to and guided by a veterinarian. If these injections are not done properly, it may result in serious injury, or even cause death to the pig.

Needle Injection Guide

It is important for you to use the proper gauge and length of needle when administering medication. If you are unsure what gauge and length to use, contact your veterinarian for guidance. Some recommended needle gauges and lengths are shown here.

### Intramuscular Injection

<table>
<thead>
<tr>
<th>Gauge</th>
<th>Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baby Pigs</td>
<td>18 or 20 5/8” or ½”</td>
</tr>
<tr>
<td>Nursery</td>
<td>16 or 18 3/4” or 5/8”</td>
</tr>
<tr>
<td>Finisher</td>
<td>16 1”</td>
</tr>
<tr>
<td>Breeding Stock</td>
<td>14 or 16 1” or 1½”</td>
</tr>
</tbody>
</table>

### Subcutaneous Injection

<table>
<thead>
<tr>
<th>Gauge</th>
<th>Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nursery</td>
<td>16 or 18 ½”</td>
</tr>
<tr>
<td>Finisher</td>
<td>16 ¾”</td>
</tr>
<tr>
<td>Breeding Stock</td>
<td>14 or 16 1”</td>
</tr>
</tbody>
</table>
**Needles**

When giving injections it is important to use a straight needle that has never been bent. A needle is more likely to break if it has been bent during an injection, straightened and used again. You do not want to leave any portion of a needle in your animal.

Here are some things to remember when using needles to administer animal health products:

1. If you purchase disposable needles, you don’t have to worry about sanitizing them or re-using them.
2. Change needles frequently or regularly or if the needle is dropped or damaged. After use, dispose of needles and syringes properly, and clean and store any reusable items.
3. Always use clean, sharp needles. If you use reusable needles, make sure that you clean them properly.
4. Always check for burrs on a needle. A “burr” is when the metal on the needle is chipped or raised off the surface of the needle and is not smooth. This can happen if a needle is dropped or used too much. The chipped metal causes more irritation when inserted and also increases the chance of infection. If a burred needle is used, the pig may experience unnecessary discomfort and injection pain.

Be sure that all your animal caretakers are aware of what to look for when deciding if a needle is “okay” to use or not. All caretakers should be aware that they must identify any pigs that are at risk of carrying broken needles. If a pig is at risk, record all the information regarding the event, and contact your packer to discuss any animals that are possibly harboring a broken needle or needle fragment.

It is important that everyone that cares for your animals has guidelines on giving injections and needle use. These guidelines should be a part of your Standard Operating Procedures (SOPs) which are written procedures designed to ensure everyone performs specific tasks similarly. The guidelines you provide should show how to properly restrain an animal, where to give an injection and proper injection techniques. You should also provide guidelines on proper needle selection, how to maintain a sharp, clean needle and how to change bent needles. You should also include how to retrieve dropped needles and the number of appropriate needles for a specific task. It is important to keep an inventory of your needles. This will help you recognize when a needle is lost or dropped.
Needle Disposal

Used needles, syringes and knife blades are called “sharps” and must be disposed of properly to prevent injury to fellow workers, children, waste handlers and livestock. While regulations on the disposal of “sharps” vary from state to state, proper disposal typically involves placing sharps in a rigid, puncture-resistant container immediately after use. Commercially-available containers can be purchased from many farm supply stores, drug stores or veterinarians. Some states allow sharps to be placed into properly labeled containers such as empty detergent bottles made of heavy plastic with screw-on caps. Glass containers are not acceptable for sharps disposal because they are more likely to break during the disposal process.

Sharps containers must be clearly labeled as a biohazard waste container, not for recycling. When the container is full, the cap or lid should be securely tightened and sealed with heavy tape.

The container should prevent the penetration of needles both on the farm and throughout transportation to the final disposal location.

Take-Home Message

- Three methods of giving medication are: by injection, orally and topically
- Never straighten and re-use a bent needle
- Keep a needle inventory record

Summary

While it is important for you to know proper medication administration techniques you should also make sure that everyone involved with your swine project knows them. In this lesson you learned that it is important for all animal caretakers to have the same expectations and follow the same operating procedures.

You also learned three different ways medication is administered: by injection, orally and topically.

You learned five different injection types: intramuscular, subcutaneous, intranasal, intraperitoneal and intravenous.

You also learned how to recognize damaged needles and dispose of sharps.
Review Questions

1. T/F: Only the owner of the animals needs to know and use proper techniques for administering medication.

2. T/F: Caretakers should know how to calculate when a withdrawal time is complete and when an animal is safe to market.

3. What are two drug administration techniques?

4. T/F: Injection may be the only practical way to medicate a pig that is too sick to drink or eat.

5. T/F: Medicated feed, an oral medication, can be used in an extra-label manner.

6. T/F: Intramuscular injections should be given in the neck just behind and below the ear, but in front of the shoulder.

7. Where should subcutaneous medications for small pigs be injected?

8. List three types of injections.

9. T/F: A needle with a burr should never be used.

10. T/F: Glass containers are okay for storing used needles.

Answer Key

1. False - Every person who may be involved in treating animals should know and use the proper techniques for administering the product.

2. True

3. Intramuscular or in the muscle (IM), Subcutaneous or under the skin (SQ), Intranasal or in the nasal passages (IN), Intraperitoneal or in the abdominal cavity (IP), Intravenous or in the vein (IV)

4. True

5. False - It’s illegal.

6. True

7. Loose flaps of skin in the flank or elbow.

8. True

9. False - Glass containers are not acceptable for sharps disposal because they are more likely to break in the disposal process.

10. False - Every person who may be involved in treating animals should know and use the proper techniques for administering the product.
Key Terms

Administering medication
Burr
Injection
Intramuscular (IM)
Intranasal (IN)
Intraperitoneal (IP)
Intravenous (IV)
Medicated feeds
Oral medication
Subcutaneous (SQ)
Topical medication
Every person involved in treating animals should know and use proper techniques for administering medications.

**Education Plan**
List three items that should be in your education plan for caretakers.

1.

2.

3.

Now write how you will communicate these items. It can include how you are going to communicate concerns and new policies and review procedures.

**Caretakers**
List the people that are involved in helping care for your pigs. Be sure to include their contact information if they do not live on your farm.

<table>
<thead>
<tr>
<th>Name</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

**Communication Plan**
It is important to communicate daily with the individuals caring for your animals. This can be done in written form or in some other way. Write your communication plan below. It should include how to recognize that a pig has been treated or that there is another problem being observed.

One way to help keep your animals’ care organized is to have a set of tasks for each caretaker. Write one person’s name below and the tasks that he or she is responsible for. Make sure that you include the timeframe when these tasks should be done (i.e., daily, weekly, etc.). An example is provided in the first line.

<table>
<thead>
<tr>
<th>Name</th>
<th>Tasks</th>
</tr>
</thead>
</table>
| Mary | 1. Feed each pig one scoop of feed each evening around 5 p.m.  
2. Observe each animal for health concerns at feeding time. |
Youth Manual

Lesson 7

Check Box Education
Place a check beside each of the items that you want your animals’ caretakers to be trained on.

- Reading a medication label
- Administration techniques
- Injection types and techniques
- Withdrawal times
- Feeding procedures
- Daily observation procedures
- Recordkeeping
- Medication care and storage
- New procedures
- Animal identification
- ______________________
- ______________________
- ______________________

Injections
List three ways to administer medication and indicate on the drawings where the medication should be administered.

Giving Medication
List three types of ways to give medication and an example of each.

1.

2.

3.
Anyone caring for your animals should be concerned about your animals’ health as well as food safety.

**Crossword**

ACROSS
3. Needles should not have ___.
5. Administering medication on the skin.
6. ___ are a way to give medication if an animal is no longer eating.
8. In the vein or ___.
9. Intraperitoneal or in the ___ cavity.
11. ___ medication is usually fed to an animal or placed in its water.

DOWN
1. Needles should not be used if they have been ___.
2. Under the skin or ___.
4. ___ should be aware that they must identify a hog that is at risk of carrying a broken needle.
6. In the nasal passages or ___.
7. Intramuscular or in the ___.
10. Selecting the proper ___ length and gauge for injections is important.

**Sharps**

What are sharps?

What is the proper way to dispose of sharps?
Lesson Objectives

- Explain the components of current Good Manufacturing Practices
- Explain how these components help prevent feed contamination and ensure accurate manufacturing

Medicated Feed & Current Good Manufacturing Practices (cGMPs)

A set of guidelines for processing medicated feed, referred to as current Good Manufacturing Practices (cGMPs), is designed to prevent feed contamination and to provide reasonable assurance that the medicated feed is manufactured accurately. The cGMPs must be followed to help ensure safe, wholesome meat products for human consumption.

The current Good Manufacturing Practices provide standards for:
- Buildings and grounds
- Equipment
- Work space and storage areas
- Product quality assurance
- Labeling
- Recordkeeping

Each standard is set to assure that medicated feed products are suitable for feeding livestock intended for human consumption.

Current Good Manufacturing Practices

Buildings and grounds: Buildings and grounds should be kept neat and clean. Good housekeeping helps prevent accidents or mistakes that could contaminate feed. You should ensure that there is enough space for all equipment, and processing and storage of feed.

Equipment: Equipment should be kept clean and safe. Leftover feed inside or on equipment can contaminate the next batch of feed. Prevent build-up of feed ingredients in or on equipment. If you are using scoops, measuring containers and/or buckets to combine medication with feed, clean them between each use.
Workspace and storage: Keep work and storage areas organized. If you have a storage room, keep medicated feeds separate from other feeds. Separation reduces the chances of feeding a medicated feed accidentally. In addition, keep other animal health products, such as medication, in a separate area.

Product Quality Assurance: Establish quality assurance procedures and check points. Periodically analyze feed to ensure that it is properly mixed and has the proper levels of nutrients and medication. Installing and following procedures is also an effective way to maintain accuracy and consistency. For example, you should establish equipment cleanout procedures so that it is done properly and thoroughly each and every time.

Labeling: Use a labeling system to clearly identify different feeds, drugs, pesticides, or other products. Proper labeling will help ensure that products don’t get confused with each other. Never store pesticides with feeds. Ensure that the correct label is permanently attached to all medicated feeds you receive and store.

Recordkeeping: Good records should be kept detailing the mixing of feed or water with any medications. Additionally, record new feed or other items that come into your barn or storage area. One way to keep record is to keep a clipboard in the feed storage area where you can write down required information. This makes the records available to anyone involved in feed handling. Keep your records for at least one year after the feed is used.

Feed Manufacturing: It is important that your animals receive quality feed. Manufactured feed should:

1. Be nutritious
2. Contain the appropriate medication level
3. Have a lower than acceptable level of contaminants or be contaminant-free

When you mix or purchase feed you should ensure that the person or company handling your feed follows current Good Manufacturing Practices. Ask your feed supplier about cGMPs prior to purchasing feed.

Mixing Medicated Feed

When manufacturing or mixing medicated feed, it is critical that the feed contains the proper concentration of medication. If the concentration is too low it may not have the desired effect on an
animal. If the concentration is too high it may cause negative health effects or violative residues that last beyond the labeled withdrawal time.

Remember that extra-label use of medicated feeds is ILLEGAL so it is important that your feeds are mixed properly and accurately.

**Feeding Practices**

When feeding animals you should not only ensure that you are providing the proper medication level but you should also make sure that you are using a feed that is correct for that type of animal. For example, you should never feed swine feed, medicated or not, to cattle or other animals. Always follow the label instructions. This will help ensure that the animal receiving the feed is getting the proper feed type and amount of medication.

**Take-Home Message**

- Maintain clean
  - Facilities
  - Equipment
  - Storage and work areas
- Read product labels
- Keep records
- Stay organized

**Summary**

You should be able to identify and follow current Good Manufacturing Practices for handling and mixing medicated feeds on the farm.
Review Questions

1. A set of guidelines for processing medicated feed, are referred to as _____________.

2. T/F: Feed mixing equipment needs to be cleaned a minimum of once a year to be considered safe.

3. T/F: One good manufacturing practice is to keep good records of when feed is mixed with any medication.

4. T/F: Feed that meets nutritional specifications is one goal when manufacturing quality feed.

5. T/F: When manufacturing or mixing medicated feed, it is critical that you make sure the feed contains the proper drug concentration.

Key Terms

Current Good Manufacturing Practices (cGMPs)
Concentration
Medicated feeds
Recordkeeping

Answer Key

1. True
2. False
3. True
4. True
5. False
Current Good Manufacturing Practices are designed to prevent food from being contaminated with animal drugs and to provide reasonable assurance that medicated feed is manufactured accurately.

**Word Find**

Find the words in the grid. Words can go horizontally, vertically and diagonally in all eight directions.

- Clean
- Concentration
- Contamination
- Equipment
- Facilities
- Feed
- Good
- Ingredients
- Labeling

- Manufacturing Practices
- Medication Level
- Nutrition
- Organized
- Processes
- Quality
- Recordkeeping
- Storage
- Workspace
The cGMPs should be followed to ensure safe, wholesome meat products for human consumption.

**Feed Supplier**
Ask your feed supplier if they use current Good Manufacturing Practices. Write their response below.

**Feed Manufacturing Goals**
Complete the sentence: The goal of feed manufacturing is to produce feed that ___
1.
2.
3.

**cGMPs**
List three current Good Manufacturing Practices and tell how they can be done on your farm.
1.
2.
3.

**Mixing Medicated Feeds**
When mixing medicated feeds you can get one of three results. The medication level in the feed can be just right, too high, or too low.

Name one possible result of a medication level being too high?

Name one possible result of a medication level being too low?

**Goals**
List one cGMP that you hope to implement on your farm next year.
Lesson 9 • GPP #9

Develop, implement and document an animal caretaker training program.

Lesson Objectives

- Understand the importance of developing and implementing an animal caretaker training program
- Identify the importance of documenting an animal caretaker training program

All animal caretakers whether family members, friends or farm employees should be trained on tasks that they are asked to do when caring for your animals. In this lesson you will learn the importance of developing, implementing and documenting an animal caretaker training program.

Caretaker Training

Animal caretaker training can be as simple as you showing each individual what to do and writing this down in a notebook. However, it can be much more extensive. Producers may use training manuals, CDs, DVDs, videos and/or intensive on-the-job training. Training is essential for worker safety as well as for assurance that animals are being handled and cared for properly. You want to ensure that animals are being cared for in a manner that will not decrease the quality of the final pork product or compromise animal well-being.

Training helps to increase productivity and efficiency among caretakers. Caretakers who are trained have a greater understanding of project goals and are often more willing to help meet those goals.

As technology changes, it is important to realize these changes and teach caretakers about them. There is an increasing number of new products, equipment and techniques for caretakers to learn and understand. Technology in the pork industry is changing, just like it is in the rest of the world. Whenever you implement something new on your farm, you should teach your pigs’ caretakers about it. For example, if you purchase a different brand of feed that you intend to mix medication with, it is important for you to train anyone who may feed your pig on how to properly mix and feed the new products.
Recording Training

Everyone involved with your swine project, including family and friends, should be trained and the training must be recorded. Regardless of the type of training you provide for your animal caretakers, it is important to write it down and keep record of it.

Written documentation should include the topics, techniques and procedures covered in the training as well as the date, trainer and training attendees. Make sure that after training, each animal caretaker can perform the specified task or skill prior to letting him or her perform it without supervision.

Take-Home Message

- Train your animals’ caretakers
- Document training

Summary

In this lesson you have learned that, as a producer, providing training that relates to caretaker tasks involving animal care is important. Your animals’ caretakers need to know new procedures and techniques being used to care for your pig. One goal you may have is to provide your animals’ caretakers with at least one training session per year on a new technique in the industry.

Review Questions

1. What are two ways you can train caretakers?

2. List one benefit of training.

3. T/F: Animal caretaker training does not have to be documented.

Answer Key

1. Manuals, CDs/DVDs, Video, On-the-job Training
2. Productivity, Efficiency, Appreciation for project goals, Knowledge of changing technology
3. False – It is important to keep track of training through documentation to ensure each caretaker knows what he or she is doing.
Key Terms

Recordkeeping
Training
Training is essential for worker safety as well as for the assurance that your pigs are being cared for and handled properly.

**Training Resources**
Name one location where you can find training materials for your animals’ caretakers.

**Benefits**
List three benefits of training caretakers.
1. 
2. 
3. 

**Technology & Pork**
Discuss with a friend how technology impacts the pork industry. Write the key points you discussed below.

Discuss with a friend how technology impacts your farm or pigs. Write the key points you discussed below.

**Tasks & Training**
List all caretakers in your operation, the tasks they are responsible for and one thing they can be trained on related to their tasks.

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You should ensure that your animals are being cared for in a manner that will not decrease the quality of the final pork product.

Training Records
List three items that you should record after training. Provide an example of each.

1. 
2. 
3. 

Training & You
Think of some training topics that you may use as a producer. Where can you find this training?

Training Word Search
Find the words in the grid. Words can go horizontally, vertically and diagonally in all eight directions.

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Animal Caretaker Training Date Develop Document Employee Implement Procedures Program Task Techniques Topics Training

Complete It
Make sure that after training, each animal caretaker can perform the task or skill being trained on prior to letting him or her perform it without ________________.

Remember, your animals’ caretakers are the people that make sure your animals are ____________.
Lesson 10 • GPP #10
Provide proper swine care to improve swine well-being.

Lesson Objectives
- Explain the importance of recordkeeping
- Understand the role of observation and interaction when providing proper swine care
- Explain the role of proper ventilation, space and facility maintenance
- Understand why intentional acts of neglect or abuse are unacceptable

Recordkeeping
Caring for your animals responsibly includes keeping records. There are several records that are important for you to keep on your farm.

Recordkeeping includes documentation of a Veterinarian/Client/Patient Relationship (VCPR), medication and treatment records, and caretaker training records.

A VCPR allows the caretaker and veterinarian to work together to help ensure the health and well-being of the pigs on that operation.

Medication and treatment records help provide the treatment history of each individual pig as well as provide a picture of herd health. The FDA suggests that food animal producers keep medication records for 12 months after the animal is marketed.

One of the most important factors in animal well-being is the skill of the people caring for the animals. The people caring for your animals are the people that ensure your pigs’ well-being. Three common areas in which producers train swine caretakers are: euthanasia, animal handling and husbandry. You should always record training that each of your animals’ caretakers has received.

Another record to keep is a record of your Youth PQA Plus certification. You may have to be Youth PQA Plus certified to sell or show your animal.
Another record to keep is a written euthanasia plan. Every operation will at some time have sick or injured pigs that do not respond to care and treatment, therefore it is important to have a written action plan ready if animals with conditions of concern are found.

Your plan can be as simple as calling your veterinarian when euthanasia is needed. Your veterinarian can help you make euthanasia and treatment decisions.

**Emergency Support**

In case of an emergency, quick communication is important. A written action plan can provide directions on what to do in case of an emergency. The plan may consist of a list of phone numbers of people to contact if an emergency occurs. You may include a phone number for the fire department, your veterinarian, the facility owner and equipment suppliers.

Many commercial operations have an emergency detection system that will warn them of power failures, temperature changes or other emergencies.

You should consider how you can detect an emergency in your operation, especially if your pigs are kept at another location. Action should be taken immediately when an emergency occurs. If your house is located near the facility where your animals are and you can visually see when the power is off or if a fire occurs this would count as a detection plan.

If your buildings use a mechanical ventilation system, you should also have a manual or automatic system in place in the event that ventilation is interrupted due to a power outage or other situation. These may be curtain drops, a backup generator or another device, plan or system.

**Daily Observation**

Daily observation and animal care are key factors to addressing animal health and well-being and facility or management issues. Daily observation can also help to assess the effectiveness of health and nutrition programs, the suitability of facilities and the quality of caretakers. One way to document that someone has observed the animals every day is by keeping a log or record. An example of this might be recording the daily temperature or amount of feed given on a calendar posted inside the door.
Daily observation helps ensure that sick animals do not go unnoticed and that your animals’ caretakers are doing their job.

**Animal Evaluation**

The production performance of a pig can often be an indicator of the well-being of the pig. When the well-being of a pig is compromised, the production performance of that pig may also be compromised. Some production performance measures to track include average daily gain, feed efficiency and **mortality rates**.

**Average daily gain** is the average amount of weight a pig gains each day over a period of time. If this is an extremely low number it may mean that your animal is not getting proper nutrition or an adequate amount of feed. This could be due to the type of feed, the caretaker or other factors.

**Feed efficiency** can be calculated most simply as pounds of weight gained per pound of feed consumed. Feed efficiency is usually the primary driver of profitability for meat producing animals. If your animal eats a large quantity of feed and does not gain a lot of weight it may have an illness that prevents it from gaining weight or it may be eating feed that is not providing sufficient nutrition.

Careful observation can provide clues as to how well animals are being managed. Look at their skin and their extremities. Do they have wounds that indicate fighting? Do they walk with equal weight on all four legs? Watch how they react to people being around. Are they inquisitive? Are they fearful? These initial observations can serve as a personal benchmark.

Observe your pigs while they are standing or walking on a flat surface. A lame pig is one that cannot bear full weight on all four legs, including shifting its weight from leg to leg because of pain.

If your pigs have excessive skin lesions, abscesses or wounds it is important to evaluate how, where and why they got them. Consulting with your veterinarian may be helpful to identify a cause and facilitate a treatment.

If skin abscesses or wounds are present, count how often they occur and note their location to give some important clues about their sources and about ways to prevent them. **Abscesses** are fluid-filled pockets in or under the skin that may cause the skin to be raised. They can be observed after a deep bruise, a penetrating injury or an injection. Pay attention to how many pigs have abscesses and if one location is more common than others are. **Wounds** are defined as a break that completely penetrates the skin, for example, bites or other lesions that penetrate through the skin. Observe
wounds and note their location, for example, on the shoulder, vulva or other parts of
the body.

When conducting animal evaluations you should observe all animals for disease
symptoms. These may include, but are not limited to, respiratory or gastrointestinal
ailments.

A recommended time for animal evaluation is while your pigs are eating. This
will allow you to observe the physical state and behavior of the pigs with limited
distraction.

Another item to consider when evaluating animals is their body condition score (BCS).
Body condition scores are useful to assess the adequacy of the nutrition program and
to help visually identify animals that may require additional attention. Body condition
scores are usually used to assess sows. Animals should be fed according to their
body condition. While a body condition score of 1 is a potential indicator of a pig's
well-being, showing it needs immediate attention, an obese pig (BCS 5) also has
increased health risks. Investigate low- or high-BCS animals further and increase (low
BCS) or decrease (high BCS) the daily caloric intake of these animals as necessary.

When you evaluate your animals you can learn a lot about their health and feed
intake, as well as about the air temperature and quality and facilities around them.
Observe your animals daily and take time to identify and react to a potential problem.

**Swine Behavior**

Swine behavior can also give you an indication of the care your animal is receiving.
If your animal is repeatedly exposed to unpleasant handling or abuse it may show
signs of fear in the presence of humans. Pigs that have repeated exposure to pleasant
handling are typically relaxed around people and will generally be easier to move, and
as a result, have better meat quality.
**Body Space**

It is important for your pig to be comfortable. Your pig must have the proper amount of space to continue to grow and perform.

For pig space to be considered adequate, the pig must be able to:

- Easily lie down on its side without having to lie on another pig and easily stand back up from a laying position
- Lie down without the head having to rest on a raised feeder
- Additionally, a sow housed in a stall must be able to lie down fully on its side (full lateral recumbency) without the head having to rest on a raised feeder and the rear quarters coming in contact with the back of the stall at the same time.

**Timely Euthanasia**

Every operation will at some time have injured or disadvantaged pigs that will require euthanasia. Therefore, it is important to have a written action plan in such an event. The *On-Farm Euthanasia of Swine* brochure provides information to help you choose an appropriate method, considering the following:

- **Human safety:** The method must not put you or others at unnecessary risk
- **Pig well-being:** The method should minimize any pain or distress on the pig
- **Practicality/technical skill requirements:** The method should be easily learned and repeatable with the same expected outcome (*proper supervision by an adult or veterinarian of all methods of euthanasia is required*)
- **Cost:** The method should be economical for you to use to ensure it is used when needed
- **Aesthetics:** The method should not be objectionable to the person administering the procedure
- **Limitations:** Some methods are only suitable for certain sizes of pigs or certain locations

Euthanasia is defined as humane death occurring with minimal pain or distress. Pigs that are not responding to care or unlikely to recover must be euthanized humanely. Timely euthanasia, as well as using the appropriate methods and equipment, is critical to the well-being of these pigs. The definition of “timely” is as follows – animals showing no improvement or prospect for improvement after two days of intensive care should be humanely euthanized, unless special circumstances exist. In addition, severely injured or non-ambulatory pigs with the inability to recover are euthanized immediately. Any animal that is immobilized
with a body condition score of 1 should be euthanized immediately. Personnel trained in euthanasia should always be available to respond if called – including nights, weekends and holidays.

Any equipment that you use for euthanasia of pigs in your operation must be kept in proper repair and must be functional. A maintenance record can help to demonstrate that the condition of the equipment is being addressed.

Facilities

The maintenance of your facility can impact the well-being of your pigs. A facility includes pens, feeders, waterers, flooring, chutes and alleyways.

Your pigs’ pen should be well maintained. It should not have any nails, metal or other items that could injure your pigs protruding out from the walls, gates or flooring of the pen. For example, sharp objects like nails could affect the number of wounds that might be found on your pigs.

Feeders and waterers that are properly maintained will allow your animals to freely access feed and water. There are a wide variety of feeders available today. Whatever type you use on your farm, the number of feeding spaces and their size should allow your pigs to consume their daily ration without unnecessary fighting or competition. Water should be available to your pigs at least twice a day in an amount that fully satisfies your pigs and eliminates unnecessary fighting or competition. Specific information about water requirements can be found in the Swine Care Handbook.

Animal Movement

Proper handling and movement of pigs is also an element of proper animal care. The handling and movement of swine involves many unfamiliar, stressful experiences for pigs. You should handle and move your pigs in a manner that causes the least possible amount of stress. Handlers should be quiet and calm during animal movement. You should take steps daily to get your pigs accustomed to human contact. This will help make movement and loading easier on your pigs and you. Remember that pigs do not understand why they are being moved.

Eliminate visual distractions, such as people and other pigs, from the path of animal movement. Removing distractions will help your pigs to move more freely. Additionally, and depending upon their size, you should only move six or fewer pigs at a time. This will help allow you to have more control and provide your pig more room to move.
Each person handling your pigs should be trained in proper handling techniques prior to any animal movement. Handlers should use the most effective tools for movement. One of the most effective tools is a sorting board or panel. Sorting boards block the pig’s path and vision while protecting the person holding the sorting board. Use of electric prods is very stressful for pigs and should be avoided. Pigs should never be prodded in sensitive areas such as the eyes, nose, anus, testicles, etc.

**Transportation**

Proper animal handling is also important during transportation. Transportation can be stressful for a pig. Move pigs only when it is not too hot or cold.

If you do have to transport your pigs when it is hot, ensure that your pigs are shaded. Place wet straw or wood shavings in the bottom of the trailer. This will help keep your pigs cool during transport. If you keep the trailer moving it will help increase air flow and aid in keeping your pigs cool.

If you have to transport your pigs when it is cold outside, make sure that your pigs have enough straw or bedding and plug any holes in the trailer to help stop drafts.

No matter what the temperature, it is always good to give your pigs water immediately after transport, and during, if possible.

Use proper equipment for loading and transporting your pigs. You should always load your pigs in a calm, careful manner to help prevent stressing your animals. Electric prods, buzzers and slappers should be avoided. You should treat your animals humanely at all times.

**Ventilation**

You should be aware of building factors that can affect your pigs’ health. Air temperature and air quality can impact the well-being of your pigs. These factors can be controlled through proper ventilation management.

You should be able to assess the thermal environment of your pigs. If the air temperature is too cold for your pigs, they will huddle together, shiver and pile onto each other to keep warm. If the air temperature is too hot, pigs will try to avoid body contact with other pigs and often have increased breathing or respiration rates. Recognizing these behaviors can help you make appropriate temperature and ventilation adjustments. During daily observation, animal caretakers should record the building temperature.
Facility air quality can be controlled using proper ventilation. Ventilation equipment should always be maintained in good working order. Poor quality air contains gases and dust that can affect the respiratory health of your pigs and may possibly lead to disease or even the death of your animals.

Watery and mattery eyes, bloodshot eyes and difficulty breathing are all indicators that pigs are being exposed to poor quality air. Ammonia is a common air contaminant that can directly impact the well-being of your pigs. There are tools available to measure air contaminants in your facility.

**Willful Acts of Abuse**

Currently there are no national laws or regulations on improper handling or abuse of swine. However, there are some local and state governments that do have laws addressing animal cruelty. Willful acts of abuse are unacceptable on any farm or operation. Willful abuse and neglect are defined as acts outside of normally accepted production practices that intentionally cause pain and suffering including, but not limited to:

1. Intentionally applying prods to sensitive parts of the animal like eyes, ears, nose or rectum
2. Malicious hitting or beating of an animal
3. Purposeful failure to provide minimal food, water or care that results in significant harm or death to animals

If you ever observe a willful act of abuse, you should immediately intervene or get an adult to stop the situation. You should then report the act to the appropriate people such as the owner or law enforcement.
Take-Home Message

- Keep necessary records
- Evaluate your facilities and animals
- Identify potential hazards to your animals’ health and well-being

Summary

In summary, to keep track of and improve your animals’ health it is important to keep records. These records will help indicate when something has changed with your animal. You should also observe your pig on a daily basis. This will help you recognize a health problem when it is showing its first signs and has a better treatment success rate. You can learn a lot from observing your pigs. You can learn about their environment, feed intake and health just through daily observation. You have also learned that willful acts of abuse are unacceptable and if they occur they should be stopped immediately. Action should be taken to ensure that your animals are healthy and cared-for properly.

Review Questions

1. T/F: Medication records should be kept a minimum of 12 months after marketing an animal.

2. What are three components of your project that should be recorded?

3. T/F: A written emergency action plan should include contact information for individuals that may be of help in an emergency such as the fire department and veterinarian.

4. T/F: One way to show that someone has observed the animals every day is by keeping a log or record.

5. T/F: Feed efficiency is the amount of feed consumed per day.

6. T/F: Daily observation of animals can help determine the condition of a facility.

7. A pig with a body condition score of 5 is considered _____.

8. T/F: Pigs that have repeated exposure to pleasant handling are typically more relaxed around people and will generally be easier to move.

9. T/F: It is okay if a pig has to lie on another pig.
10. T/F: The maintenance of your pig’s pen can impact the well-being of your pig.

11. List three things that should be considered when developing a written euthanasia plan.

12. T/F: If your pigs’ pen is too small it can cause your pigs to be crowded and possibly become stressed.

13. T/F: Aggressive handling does not have an effect on meat quality.

14. T/F: Poor ventilation can result in high ammonia levels.

15. T/F: Air quality and temperature can affect animal health in a positive or negative manner.

16. T/F: If a willful act of abuse is observed it should be stopped immediately.

Answer Key

1. True
2. True
3. True
4. True
5. True
6. True
7. False - Pounds gained per pound of feed consumed.
8. True
9. False - For body space to be considered adequate, pigs must be able to lie down on its side with out having to lie on another pig.
10. True
11. False - Meat quality may be negatively affected in pigs that have been handled aggressively.
12. True
13. False - Pounds gained per pound of feed consumed.
14. True
15. True
16. True

VCPR, Medication and treatment records, Caretaker training.
Key terms

Abscess
Average Daily Gain (ADG)
Body Condition Score (BCS)
Daily observation record
Emergency action plan
Emergency detection system
Euthanasia
Feed efficiency
Malicious
Recordkeeping
Skin lesions
Swine well-being
Veterinarian/Client/Patient Relationship (VCPR)
Wounds
**Daily Observation**

Observe your pigs every day. One daily observation item to record is the temperature in the building each day.

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**Scenarios**

What would you do to improve each situation?

Pigs don’t have sweat glands to help keep them cool. The temperature is very hot in your barn. What is a sign that your pigs are too hot?

How would you help your pigs cool off?

Young pigs need to be kept warm. A new litter was just born. What are some signs that your pigs are cold?

What would you do to keep the pigs warm?

Pigs need plenty of water each day. How can you make sure that your pigs are getting enough water?
Emergency Backup Plan

It is a good idea to have an emergency action plan for your farm. This can be as simple as a list of contacts to call in case of an emergency. Fill out the contacts below.

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Recordkeeping Word Find

Find these words that are related to records you should keep. The words are across, backwards, up and down, and diagonal.

F W F R W L T F D M N E N H T C
C Z T M B X X L H N U M H F Y T
R N F N L J M Q O T N E L R R P
N Y G N T K R I H O N R B X O G
Q E W N M X T A I Z G G H M T H
T G G N H A N T K K D E K X N W
M R W A C A A T R V N N T R E K
N K A I S V R Q P M L C V C V M
M J D I R U M K C L K Y F P N L
D E A E N H M Y V M F Y Y M I H
M T S H T I T T R E A T M E N T
G B X G W J N F P F F G F Q P R B
O K M D Y M K G T K L Y R J H T
K R L W Q V N R G M N W P D L F
N O I T A C I F I T R E C A Q P
B M P D M M H V F C K D H H Z N

Emergency
Inventory
Medication
Observation
Training
Treatment
Usage
VCPR
No matter who is caring for your animals, they need to be observed at least once daily.

**VCPR**
Fill out the following veterinarian information.

| Name: |  |
| Address: |  |
| Phone: |  |
| Hours he/she is available: |  |
| Who to call during “off” hours: |  |

**Emergency Detection**
Check off the categories you have emergency detection for.

- ☐ Power failure
- ☐ Drastic temperature changes
- ☐ Fire
- ☐ Other ________________________
- ☐ Other ________________________

**Euthanasia**
Do you have a euthanasia plan?

What would you do if you thought one of your pigs needed to be euthanized?

**What Observations Tell You**
Daily observation is an important assessment that can tell you a lot about your animals’ health, care and surroundings.

List five things that you can look for during your daily observations:

| Observation: |  |
| 1 |  |
| 2 |  |
| 3 |  |
| 4 |  |
| 5 |  |
Body Condition Scoring
Score each of the pigs below from one to five.

Movement
Check each item that helps make moving your pigs less stressful.

- Move six or less pigs at a time.
- Take steps daily to get your pigs accustomed to human contact.
- Move your pigs as fast as you can. The less time it takes the less stressed they will get.
- Make loud noises to get your pigs to move faster.
- Be as quiet as possible when moving your pigs.
- Move your pigs in a calm manner.
- Move obstacles out of your pigs’ view during movement.
- Use a sorting board to help you move your pigs.
- Use people to assist you that have been trained in animal handling.

Ventilation
Explain why ventilation needs to be controlled in a swine facility. How can it affect your animals’ health?
Acronyms

AMDUCA = Animal Medicinal Drug Use Clarification Act (1994)

cc = Cubic centimeters

cGMPs = current Good Manufacturing Practices

CPG = Compliance Policy Guide

EPA = Environmental Protection Agency

FDA = Food and Drug Administration

FSIS = Food Safety and Inspection Service

GPP = Good Production Practice

HACCP = Hazard Analysis and Critical Control Points

PQA Plus™ = Pork Quality Assurance Plus™

USDA = United States Department of Agriculture

VCPR = Veterinarian/Client/Patient Relationship

VFD = Veterinary Feed Directive
**Key Terms**

**Abscess:** A fluid filled pocket in or under a pig’s skin that may cause the skin to be raised.

**Active ingredients:** The chemical name(s) of what makes up the medication.

**Administration techniques:** The delivery of medication, typical methods include by injection, topical application, or orally through water, feed or directly into the mouth.

**Adulterated products:** A meat product or swine animal harvested or sold for harvesting, which has a violative medication residue or represents another safety hazard.

**Animal husbandry:** The aspect of agriculture concerned with the care and breeding of domestic animals, including the control and management of animals’ health and surroundings.

**Antibiotic:** A chemical substance produced by a microorganism which has the capacity to inhibit the growth of, or kill, other microorganisms.

**Antibiotic resistance:** The ability of a microorganism to withstand the effects of antibiotics.

**Antimicrobial:** An agent that kills bacteria or suppresses their multiplication and growth. This includes antibiotics and synthetic agents.

**Average Daily Gain (ADG):** This is the average amount of weight your pig gains each day.

Example: Your pig weighed 200 lbs. on July 1. Five days later your pig weighed 210 lbs. The Average Daily Gain is 2 lbs. (210 lbs. – 200 lbs. = 10 lbs, 10 lbs. / 5 days = 2 lbs/day). NOTE: ADG is specific to your pig’s genetics and the type of feed you are using. You are likely to know these figures from experience or from the advice of your veterinarian.

**Biological hazard:** These include microbiological or zoonotic agents, such as bacteria including *Salmonella* and parasites, such as *Trichinae*.

**Biosecurity:** Biosecurity is the set of preventative measures taken to reduce the risk of disease introduction or transmission. Biosecurity includes keeping diseases from entering a herd, or keeping a disease already in one or more pigs in the herd from intensifying or spreading to other pigs.

Example: Keep your dog out of the pig barn. Your dog may have visited a neighboring farm where there may be a group of sick pigs. You do not want your dog to transmit an illness or disease to your herd of animals.

**Body Condition Score (BCS):** An important management practice used by producers as a tool to help evaluate a pig’s health, and assess nutritional status. This practice helps evaluate the amount of body reserves, particularly fat and muscle, an animal possesses. A body score of one may mean a pig lacks sufficient nutrition or is thin for another reason. The backbone is very prominent and can be felt with little pressure. A body condition score of five is when a pig is very fat, showing no visible bone structure or definition in the muscles.

**Burr:** When the metal on a needle is chipped or raised off the surface and is not smooth. A burr can cause pain to the pig and damage the muscle during injection.
Youth Manual
Lesson 10

cc: Cubic centimeter. Liquid medication given by injection is usually measured in cubic centimeters when drawn into a syringe. One cc is approximately one milliliter (ml).

Cautions and warnings: Items to pay particular attention to when using the medication. If the medication is not properly used and cautions and warnings are not followed, it could cause harm to an animal. Cautions and warnings are located on EVERY medication label.

Cleaning and disinfecting: The process of killing infectious agents, microorganisms that can cause infectious diseases; the process may involve disinfecting agents or physical processes. It is a vital part of controlling the exposure of pigs to pathogens in their environment. A biosecurity plan should include instructions on how to properly clean and disinfect a facility and equipment, including feed pans, show sticks and other items that are taken to a show.

Clinical: Involving or based on direct observation of the patient.

Current Good Manufacturing Practices (cGMPs): A set of guidelines for processing feed designed to prevent feed contamination and provide reasonable assurance that the feed is manufactured accurately.

Chemical hazard: This refers to any violative residues left from antibiotics, or other animal health products, pesticides or medicated feeds.

Compliance Policy Guide (CPG) 7125.37: Provides regulatory guidance for the development of cases resulting from the use of animal drugs contrary to label directions (“extra-label use”) by non-veterinarians in food-producing animals. It also provides guidance on measures that can be taken by non-veterinarians to ensure proper drug use and avoidance of illegal residues.

Concentration: The amount of a specific substance in a unit amount of another substance.

Daily observation record: Documentation that you have cared for your animal on a daily basis. This record could be as simple as recording the building temperature and the caretaker’s initials on a calendar each day.

Disease: An impairment of the normal state of the living animal that interrupts or modifies the performance of its vital functions in response to environmental factors (such as poor nutrition or climate), inherent defects of the organism (such as genetic abnormalities), specific infective agents (such as bacteria or viruses) or a combination of these.

Distributor’s name: The name of the company that distributed a medication.

Dosage: The amount of medication to be given at one time. This information is found on a medication’s label.

Example: A pig has a specific illness and the label says to give 2 cc/100 lb of body weight once daily for 2 days. The pig weighs 250 lb. The pig’s daily dose is 5 cc. The total amount of medication used to treat the animal over two days is 10 cc.

Drug compounding: Mixing two or more medications to create a different medication (that may respond to different symptoms or in a different way than the original medications). Compounding can only be done by your veterinarian and only when you have a VCPR.
Drug residue: The amount of drug in an animal's tissues at any given time. A pig will have a medication residue for a certain period of time after a medication has been administered.

Ear notching: An identification method used on swine. It is the act of notching a pig's ears in a way that allows a producer to identify the litter and pig number. The pig's right ear denotes the litter number and the left ear identifies the pig number. The notches, symbolizing specific numbers, are added together for each ear and then read starting with the litter number.

Efficacy: Power or capacity to produce a desired effect; effectiveness.

Emergency action plan: A plan that can provide directions on what to do in case of an emergency. The plan may consist of a list of phone numbers of people to contact if an emergency occurs. You may include a phone number for the fire department, your veterinarian, the facility owner and/or producer and equipment suppliers.

Emergency detection system: A system that will warn of power failures, temperature changes or other emergencies. If your house is located near the facility where your animals are and you can visually see when the power is off or if a fire or other emergency occurs this would count as a detection system.

Environmental Protection Agency (EPA): The government agency that sets tolerance levels for pesticides used in pork production.

Euthanasia: A humane death occurring with minimal pain or distress.

Expiration date: The date a medication should be discarded (loss of efficacy).

Extra-label use: Use of an animal drug in a manner that is not in accordance with the approved drug labeling. This type of use is done legally under the direction of a veterinarian with a VCPR. Extra-label use is not allowed with medicated feeds.

Feed additive: A substance added to swine rations to improve feed efficiency or to prevent or treat disease.

Feed efficiency: Pounds gained per pound of food consumed.

Food and Drug Administration (FDA): Agency of the U.S. Department of Health and Human Services. The FDA is responsible for regulation of medicated animal feeds and most animal health products.

Food Safety and Inspection Service (FSIS): A branch of the U.S. Department of Agriculture that is responsible for inspecting pigs and sanitation levels at packing plants.

Food supply continuum: A series of steps and relationships that take part in producing, marketing and consuming meat products. The relationship between the food produced and the food consumed.

Example: Anyone involved in the production, transportation, marketing, harvesting, processing, distributing or retail, the food service sector and consumption of pork products. Each role can affect what consumers think of the pork industry. Each segment has the responsibility of maintaining high quality pork.

Good Production Practices (GPPs): A set of guidelines for the safe, healthy, efficient and humane production of pork.
Hazard Analysis and Critical Control Points (HACCP): A system that identifies specific hazards and preventive measures for their control to minimize the risk of producing defective products and services. It is designed to prevent problems before they happen. All packing plants use a HACCP plan. The pork producer’s responsibility under the HACCP program is to supply the packer with animals that are free from violative drug and chemical residues, and physical hazards such as broken needles.

Herd check: Regular observations of the herd by your veterinarian to help ensure that you maintain a healthy herd. It also fulfills the requirements of a veterinarian/client/patient relationship, also known as a VCPR. In a scheduled herd health check, your veterinarian can observe the pigs in the production environment. The veterinarian can also review medication and treatment records while evaluating the current health status of the herd. It gives your veterinarian a chance to observe subtle problems that you or other caretakers may not have noticed.

Herd health management plan: A plan that includes management practices, such as a regularly scheduled herd check, that helps maintain your animals’ health through nutrition, care, and prevention and/or control of disease. It improves/maintains your animals’ health and welfare. Developing an effective herd health management program helps you prevent or control disease. Items in a herd health plan may include: regularly scheduled herd checks by your veterinarian, a vaccination plan, parasite control, a biosecurity plan, rodent/pest control, and cleaning and disinfecting procedures.

Indication: Refers to the use of that drug for treating a particular disease or set of signs/symptoms.

Injection: A method of administering a substance such as a drug into the skin, subcutaneous tissue, muscle, blood vessels, or body cavities, usually by means of a needle. Injections are typically used when treating individual animals. Injections may be the only practical way to medicate a pig that is too sick to drink or eat. It also may be the only way to treat an animal with medications that do not absorb well through the gut of an animal. Some examples of injection techniques are intramuscular, intranasal, intraperitoneal, intravenous and subcutaneous.

Intramuscular (IM): Injection into the muscle tissue.

Intrasnal (IN): Administration into the nasal passages.

Intraperitoneal (IP): Injection into the abdominal cavity. This type of injection should only be used upon veterinary instruction and guidance as serious injury to the pig, or even death, can occur.

Intravenous (IV): Injection into the vein. This type of injection should only be used upon veterinary instruction and guidance as serious injury to the pig, or even death, can occur.

Label use: Use of a drug exactly as specified on the label.

lb: Pound.

Lot number: A reference number that the manufacturer uses to determine the batch in which the product was made.

Malicious: Deliberately harmful.
**Maximum Residual Level (MRL):** Maximum amount of drug that may be allowed in the animal’s tissues at time of harvest that has been demonstrated to be of no risk to public health and has been approved by the Food and Drug Administration. This also is known as a tissue tolerance level. MRLs for countries outside the United States may vary.

**Medicated feeds:** Animal feed that contains medication. Medicated feed must be used according to the label at ALL times. Extra-label use is illegal.

**Medication inventory record:** Documentation of medication purchased but not yet used.

**Medication usage record:** Documentation of medication used.

**Medication:** Something that treats, prevents or alleviates the symptoms of a disease. Medication should only be used when deemed necessary and all alternatives have been considered.

**Metabolize:** The action of cells breaking down medication or other substances in the body.

**Microorganisms:** An organism that is microscopic (too small to be visible to the human eye).

**Mortality rate:** Number of pigs that die over a period of time.

**National Animal Identification System (NAIS):** NAIS is a modern, streamlined information system that helps producers and animal health officials respond quickly and effectively to animal disease events in the United States, through the use of animal identification standards. The NAIS program is a voluntary State-Federal-Industry partnership designed to protect your premises and your livelihood, reduce hardships caused by an animal disease outbreak in your community and protect your access to markets.

**Nutrition:** The taking in and use of food and other nourishing material by the body. A source of nourishment for animals. The process of taking in food and water, breaking it down and using its nutrients for energy.

**Oral medication:** Oral medications are those given through the mouth. Medications given orally are mixed in the animal’s feed or water or some oral medications can be placed directly in the animal’s mouth.

**Over-the-Counter (OTC):** Animal health products that can be purchased lawfully without a Veterinary Feed Directive or prescription.

**Physical hazard:** Any foreign object or matter in a food item that may cause illness or injury to a person consuming the product. In pork production a broken needle in a carcass is an example of a physical hazard.

**Prescription drugs (Rx):** A medication that is regulated by legislation to require a veterinarian’s prescription before it can be obtained. The term is used to distinguish it from over-the-counter drugs which can be obtained without a prescription.

**Potency:** Refers to the concentration of one substance to another. Example: The amount/ratio of medication added and mixed with a feed (example: 10 grams medication per ton of feed). It is the capacity to produce strong physiological or chemical effects.
PQA Plus™: Pork Quality Assurance Plus™

PQA Plus certified: The producer has completed the Pork Quality Assurance Plus program and fulfilled all PQA Plus certification requirements.

Prescription: A medication that has been prescribed from a veterinarian to a specific animal for a specific reason.

Quadrant: A quarter of something, the division into quarters. In ear notching, up to two notches may be placed in each quadrant.

Quantity of contents: The amount of medication in a container.

Recordkeeping: Documenting an event or occurrence. (Example: writing down or entering in a computer) Recordkeeping is common when documenting information related to an animal’s health and/or medication as well as caretaker training. A common record to keep for swine is a medication and treatment record.

Residue level: The amount of drug in an animal’s tissue at any given time. A pig will have a medication residue for a period of time after medication has been given.

Residue testing: Conducting a test that detects, identifies and measures the presence of chemical substances, such as medication, in an animal’s tissue at a given time. A pig will have a medication residue for a period of time after medication has been given.

Rodent and pest control: The act of controlling the number of rodents and other pests in a given area. Steps commonly used are deny entrance to facilities and building, remove sources of food that can attract and maintain rodent populations, deny rodents “cover” or places to live and bait or trap to reduce the number of existing rodents and other pests.

Skin lesions: A tear, cut or abrasion penetrating the skin of a pig.

Storage instructions: Instructions found on a medication label on how to properly care for a medication when it is not being used. Storage instructions may include exposure to sunlight, temperature and shelf life.

Subcutaneous (SQ): Injection given under the skin.

Swine care and management practices: Steps (practices) a producer takes/adopts to care for an animal and ensure proper animal care and well-being.

Swine well-being: The status of pigs as they interact with their surroundings. Successfully doing so helps the pig to maintain good health and physical condition.

Trade name: The commercial name given to a medication by the manufacturer.

Training: Teaching of tasks that relate to specific useful skills. Everyone involved with your swine project, including family and friends, should be trained and the training must be recorded. Regardless of the type of training you provide to your animal caretakers, it is important to write it down and keep track of it.

Treatment records: Documentation that includes animal identification, the specific medication given to that animal, the amount of medication given, the date when the medication was given, who gave it, by what route of administration, and what the withdrawal time is.
**Treat:** To provide care by procedures or applications that are intended to relieve illness or injury.

**Topical medication:** Medication applied to the skin of your pig. Some examples of types of topical medication are sprays, dusts, pour-ons and dips. Topical medications are typically used to control insects and parasites.

**Veterinarian:** A person that is specifically educated and skilled in identifying and treating animal diseases and the care of animals.

**Veterinary Feed Directive (VFD):** A category of animal drugs created by the Animal Drug Availability Act of 1996. This category is specific for new/approved antimicrobial drugs used in the feed to treat disease. The FDA determines which drug is a VFD drug. These drugs must be ordered by your veterinarian.

**Veterinarian/Client/Patient Relationship (VCPR):** A relationship that exists between a client and a veterinarian where the veterinarian has assumed the responsibility for making medical judgments regarding the health of the animals, has sufficient knowledge of the animals and is readily available for follow-up consultations. (See GPP #2 for full definition.)

**Violative drug residues:** Drug levels remaining in animal tissues after harvest that exceed the levels allowed by the FDA. For some drugs an established tolerance level has been set by the Federal Drug Administration. Violative residue levels may result from not following the proper medication withdrawal time or from improper use of a medication.

**Warnings:** (see cautions and warnings)

**Wholesomeness:** The quality of being beneficial and generally good for you or an animal.

**Withdrawal period:** (See withdrawal time).

**Withdrawal time:** Length of time between the last day animals were given an animal health product and the first day that they may be harvested without the occurrence of a violative drug residue.

**Wounds:** A break that completely penetrates the skin, for example, bites or injuries.