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Pork Quality Assurance® Plus (PQA Plus®):
Building a Stronger Industry

We Care℠: Making Our Industry Stronger
Regardless of the business, trust and transparency are essential to maintaining customer appeal. This has never been more challenging or necessary for the pork industry, as the general public and pork customers want to know how their food is produced.

The We Care℠ initiative addresses these concerns and communicates that the industry is responsible and aware of what customers and pigs need. The We Care initiative encourages constant improvement in the pork industry’s production practices and promotes a strong record of responsible farming to those outside the industry.

At the heart of this commitment is a strong code of ethics, which asks each and every producer to make the following commitments:

- Produce safe food.
- Protect and promote animal well-being.
- Ensure practices to protect public health.
- Safeguard natural resources in all of our practices.
- Provide a work environment that is safe and consistent with our other ethical principles.
- Contribute to a better quality of life in our communities.

While the We Care initiative promotes a set of principles which provide guidance to pork producers, the Pork Quality Assurance® Plus (PQA Plus®) program encourages producers to use scientific-based best practices, or Good Production Practices (GPPs), which are based on the overarching principles of the We Care initiative. The program has four key elements:

**Food safety** refers to the practices that eliminate physical, chemical or biological hazards to ensure consumers can have confidence in the safety of our product.

**Animal well-being** encompasses producer responsibilities for all aspects of animal well-being, including proper housing, management, nutrition, disease prevention and treatment, responsible care, humane handling and, when necessary, humane and timely euthanasia.

**Environmental protection** concerns practices pork producers can take to safeguard our natural resources, such as effective management of groundwater, surface water, air quality, manure disposal, land and soil quality and land use.

**Worker safety** describes a producer’s responsibility to provide a safe work environment for all employees.

PQA Plus: Success Through Continuous Improvement
Pork producers and others throughout the pork supply chain have consistently demonstrated an industry-wide commitment to improvement. That commitment has helped generations of consumers to develop confidence in our industry. PQA Plus delivers the latest in scientific research and improved production practices to producers and production employees, providing them with the tools and information which will feed their drive for continuous improvement. Through this comprehensive program, producers will have the most complete information available on the topics of food safety, animal care, environmental protection and worker safety.
PQA Plus has three distinct components:

1. Individual producer PQA Plus certification, which is earned through participation in an education program presented by a certified PQA Plus advisor.

2. PQA Plus site status, which is earned after an on-farm site assessment and producer receipt of the PQA Plus certification.

3. PQA Plus survey, which will take an industry-wide view of PQA Plus implementation and identify opportunities for improvement of the program's information and delivery.

**10 Good Production Practices of PQA Plus: Keys to Industry Success**

The PQA Plus program uses 10 Good Production Practices (GPPs). When implemented, GPPs will help ensure pork is free from chemical and physical hazards; that the pigs are raised in a caring, humane manner; that our natural resources are protected by pork producers; and that employees on pig farms have a safe place to work. These 10 practices are based on:

- Hazard Analysis and Critical Control Point principles (HACCP). HACCP principles are the standard for controlling hazards in foods produced and processed in the United States and many foreign countries.


- Science-based animal care and well-being guidelines.

**Producer Role in Food Safety**

Farm production is the first of many steps in the food-supply continuum. Therefore, producers play a vital role in ensuring food safety. Value may be reduced or lost if the product becomes contaminated during any stage of the food-supply continuum so each participant in the process has to assume the responsibility for safeguarding against hazards. This means the sensible approach to food safety, one that uses Good Production Practices, is designed to prevent, rather than to detect, problems.

**Producer Role in Animal Well-being**

Pork producers have a responsibility to provide appropriate conditions so that the pigs in their care maintain good health and physical condition. Producers also represent the pork industry and have a duty to maintain and promote the tradition of responsible animal care through the application of scientifically sound animal care practices. Now more than ever before, the actions of individual producers can help or harm the industry as a whole.

**Producer Role in Environmental Protection**

Protecting our environment comes naturally to pork producers; their livelihood is connected to the land, so they feel an inherent responsibility to protect it. Pork producers must take proactive actions to safeguard our natural resources through responsible environmental management on their farm. This includes effective management of groundwater, surface water, air quality, animal and manure disposal, land and soil quality and land use. Each producer plays an important role in safeguarding the land for future generations.
Producer Role in Worker Safety
Responsible pork producers understand that the health and safety of their employees is vital to their community and long-term business development. Part of that responsibility includes providing appropriate conditions so that their employees have safe and clean working conditions. This involves working with employees to reduce accidents and injuries, complying with Occupational Safety and Health Administration (OSHA) guidelines and managing legal responsibilities to provide a safe workplace.

HUMANE, ETHICAL PRACTICES.
BENEFITING YOUR BUSINESS. BENEFITING YOUR INDUSTRY.

Benefiting Your Business
PQA Plus not only helps to ensure the safety of the food supply, animals, environment and farm workers, it’s a sound business decision; implementation of GPPs can positively impact farm production. Furthermore, expert review of the farm and its practices can lead to greater efficiency and less waste, lowering production costs.

Benefiting Your Industry
There is increasing customer and consumer interest in the way food animals are raised. All pork producers recognize that they share a duty to demonstrate responsible practices in the areas of food safety, animal care, environmental protection and worker safety. Participation in the PQA Plus program is critical to building trust and maintaining the integrity of the pork industry. Therefore, each producer has an obligation to implement good production practices and is strongly encouraged to participate in the PQA Plus program.

With proper implementation of the GPPs, PQA Plus can benefit producers in many ways and encourage a positive perception of the entire U.S. pork industry. As you join the thousands of pork producers and employees who have adopted and consistently adhere to the practices of the PQA Plus program, you will be doing the right thing for both your business and your industry.
Use an Appropriate Veterinarian/Client/Patient Relationship (VCPR) as the Basis for Medication Decision-Making.
Use an Appropriate Veterinarian/Client/Patient Relationship (VCPR) as the Basis for Medication Decision-Making.

What does having a VCPR mean for you?

The herd medical decisions should be in the control of the veterinarian and the caretaker. 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 valid. Medicating the animal more often, with a different dose or different route of administration than instructed by the veterinarian is illegal. This means that the caretaker has not maintained his/her part of the VCPR and is responsible for those actions.

If a veterinarian accepts the responsibility for the administration of a drug under a VCPR, then he/she also is responsible for providing continued care if needed, even if it is arranged with another veterinarian. The veterinarian must be readily available for consultation and reevaluation of treatment results.

To have sufficient knowledge of the animals to initiate a general or a preliminary diagnosis requires that the veterinarian has recently seen and is personally acquainted with the keeping and care of the animal(s) by virtue of examination of the animal(s), recent diagnostic information for the herd and/or by medically appropriate and timely visits to the premises where the animal(s) are kept.

The veterinarian on record should be actively involved in making the medical decisions for the operation.

If the veterinarian is consulted for only a portion of the health program, it is impossible for the veterinarian to know the true scope of the disease challenges and the response to treatments given. Understanding the entire breadth of issues can lead to more timely and accurate diagnosis and facilitate the proper use of Food and Drug Administration (FDA) approved drugs. Involving the primary veterinarian also can increase the treatment options available.

The availability and number of drugs for use in food animal medicine has historically been limited. With the implementation of the Federal Animal Medicinal Drug Use Clarification Act (AMDUCA) in 1994, provisions were established by which FDA-approved drugs could be legally used in food-producing animals in a way other than expressly directed on the label. AMDUCA extends the privilege of extra-label use of drugs only to veterinarians and only when “the health of an animal is threatened or when suffering and death may result from failure to treat the animal.”

Extra-label use, as defined by the FDA, means actual use or intended use of a drug in an animal in a manner that is not in accordance with the approved labeling. Only a veterinarian with a VCPR for your herd can direct extra-label drug usage.

Veterinarians were given the privilege of extra-label drug use because of their training in physiology, pharmacology, access to scientific literature and the ability to draw conclusions from their information resources. As a rule, there is no standard source for withdrawal time information for extra-label drug use; AMDUCA requires that the veterinarian directing extra-
label drug use establish an extended withdrawal time so that no violative residue occurs. This involves the veterinarian reviewing the literature and consulting other information resources prior to use as well as providing the producer a written plan for withdrawal prior to the marketing of treated animal(s).

The details of the treatment of any food-producing animal must be recorded. Because extra-label treatment regimens have not undergone the extensive trials necessary to have a label approved for a specific use, the risk of adverse reactions or violative residues is increased compared to on-label use. Therefore, extra-label drug use is accompanied by a greater responsibility for documentation. The producer should have records showing the instructions from the veterinarian directing the extra-label drug use and withdrawal prior to marketing as well as the treatment records that result from the application of these instructions. Treatment records serve as important documentation of when, how and with what drug the producer treated his/her animals. An appropriate treatment record template can be found in the Appendix. It is recommended that treatment records be maintained for at least 12 months after the last date of treatment.

**DISTRIBUTION AND USE OF APPROVED ANIMAL DRUGS**

**Over-the-Counter (OTC)**
Over-the-counter (OTC) medications can be purchased by anyone from places such as farm supply stores, animal health salespersons, catalogs and veterinary clinics. The margin of safety for the animal (especially if an accidental overdose occurs), the difficulty in correctly diagnosing the disease and the safety of the person administering the medications are all factors the FDA considers when determining if the drug can be marketed as an OTC product. Even though VCPRs are not required if using OTC medications in a manner approved on the label, a VCPR should be the basis for all medication decisions. The producer must use OTC drugs only as specified on the manufacturer's label unless directed for an extra-label use by a veterinarian. For example, using penicillin purchased OTC at a higher dose than written on the manufacturer's label requires a veterinarian's direction.

**Prescription (Rx)**
Prescription drugs are those for which the FDA requires professional oversight for labeled usages because of their danger to either humans or animals. These drugs are available only through veterinarians, pharmacists and distributors 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 the animal(s) to be treated (identity), dose, route, frequency of administration and the withdrawal time along with his/her contact name, address and phone number.

**Veterinary Feed Directive (VFD)**
A veterinary feed directive (VFD) drug is an antimicrobial intended for use in, or on, animal feed. Feeds containing a VFD product can only be used with veterinary oversight by a licensed veterinarian issuing a VFD.

Once the veterinarian has the basis for making a diagnosis, he/she can issue a VFD order. The veterinarian provides the original VFD to the client for use to obtain feed from a distributor, or provides it directly to the distributor, while providing the client with a copy of the VFD.
Use an Appropriate VCPR as the Basis for Medication Decision-Making.

This document allows the producer to buy medicated feed containing the VFD drug. The veterinarian, producer and distributor of the VFD feed all are required to keep the VFD order according to FDA regulations. Any extra-label use of medication in feeds, including VFD feeds, is illegal by regulation 21 CFR 530.11.

Using a commonly available OTC antibiotic preparation, Procaine Penicillin G (300,000 IU per ml) as an example, let’s look at some common situations where a veterinarian must be involved before using it in any way other than what is on the manufacturer’s label:

1. Increasing Dosage
   The label dosage for Procaine Penicillin G is 3000 International Units (IU) per pound of body weight. This means the label dose for a 200-pound hog is 2 ml daily when using the usual penicillin product (300,000 IU/ml). If you use this penicillin in your hogs, are you following the label directions, or has your veterinarian directed you to use a different dosage for this application? If you are not following label directions, this administration is an illegal action.

2. Changing the Frequency or the Route of Administration
   Penicillin G Procaine is labeled for only intramuscular use in swine. Giving it by another route, such as subcutaneously, requires a VCPR and extra-label use and withdrawal instructions from the veterinarian.

   *Note: Research shows that giving more than 10 ml of penicillin in any one injection site may result in an even further extended withdrawal time, even though the total dosage of penicillin was given as directed.

3. Changing the Duration of Treatment
   The label directions for Procaine Penicillin G are to treat swine for two days after the symptoms are gone but no more than seven days. Do your treatment protocols match the labeled or extra-label directions for each product to be used? If not, it would only be legal if a veterinarian directed it be used this way.

4. Treating a Disease or Condition not on the Label
   The only labeled use of Procaine Penicillin G in swine is for treatment of Erysipelas infections. Using it to treat anything other than Erysipelas is illegal.

5. Changing the Species or Life Stage to be Treated
   If the Procaine Penicillin G is approved for piglets only, using it at a later life stage, for example in grow-finish hogs, is an illegal use unless directed by a veterinarian, because it is using the drug in a different life stage than what is indicated on the label.

When an OTC product is used in an extra-label manner, the requirements are:

- A VCPR exists.
- Adequate instructions have been given by the veterinarian and are followed by the caretaker.
- A withdrawal time has been assigned by the veterinarian so the extra-label drug use does not result in a violative residue.
- Identity of the treated animal is maintained.
- The treatment is recorded, and the records are maintained by the producer for at least one year after the animal was treated. The veterinarian must keep these records for two years.
Under AMDUCA, the FDA has the authority to prohibit the use of certain drugs in food-producing animals. There are also some drugs that are not labeled for use in swine and are specifically forbidden by the FDA from being used in an extra-label manner in pork production. As of April 2012, these compounds are found in the table shown:

### The FDA forbids these drugs to be used in an extra-label manner in pork production:

<table>
<thead>
<tr>
<th>Class or Active Ingredient</th>
<th>A Drug in the Class</th>
<th>Trade Name Example</th>
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<tbody>
<tr>
<td>Chloramphenicol</td>
<td>Chloramycetin</td>
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<tr>
<td>Clenbuterol</td>
<td>Ventipulmin</td>
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<tr>
<td>Diethylstilbestrol</td>
<td>(DES)</td>
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<tr>
<td>Furazolidone</td>
<td>Furoxone</td>
<td></td>
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<tr>
<td>Nitrofurazone</td>
<td>Furacin</td>
<td></td>
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<tr>
<td>Nitroimidazoles</td>
<td>Dimetridazole</td>
<td>Emtryl</td>
</tr>
<tr>
<td>Fluoroquinolones</td>
<td>Enrofloxacin</td>
<td>Baytril 100</td>
</tr>
<tr>
<td>Glycopeptides</td>
<td>Vancomycin</td>
<td>Vancocin</td>
</tr>
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</table>

*Cephalosporins

*Note on FDA’s order of prohibition for Cephalosporins: What this means for pork producers is that, effective April 2012, your veterinarian can prescribe cephalosporins for use in an extra-label manner only for the treatment of disease conditions that are not included on the label. Labeled dose, frequency, duration and route of administration as described on the label must be followed. Cephalosporin products intended for humans or companion animal use cannot be used in swine.

### Compounding of Animal Drugs

Drug compounding is the mixing of two or more FDA-approved drugs to make a different medication for the needs of a particular patient. The mixing of two injectable drugs together in a bottle or syringe is compounding. Because the interactions of the different components may lead to the formation of new compounds or cause destruction and/or precipitation of active or inactive ingredients, setting a withdrawal time is extremely difficult. The use of compounded drugs may result in adverse reactions or deaths of animals. Under AMDUCA, a veterinarian with a VCPR may be permitted to compound FDA-approved drugs following rules very much like those for extra-label drug use. The veterinarian is then responsible for the safety, efficacy and withdrawal time of the compounded drug. Compounding by producers or distributors of animal health products is prohibited.

### Residue Testing

Residue avoidance starts with the identification and documentation of all treated animals including the date(s) of treatment, the product administered, dosage given and withdrawal time. See GPP #6 for additional information. However, animals sometimes lose ear tags, get out of their pens and have accidental access to medicated feeds, or sometimes treatment records are lost or destroyed. When questions arise about the residue status of an animal or a group, testing of live animals is necessary. The risk to your reputation as well as that of the industry far exceeds the cost of having the animals tested before marketing. Because finding a kit or laboratory for this service may be difficult, producers should have a plan of what to do before a residue test is actually needed. Contact information should be recorded in the herd’s emergency response plan. When there is any doubt about the residue status of your animals, test them rather than guessing.
The use of an appropriate VCPR as the basis for medication decision-making is essential to good production practices.

- A VCPR means that a veterinarian has assumed responsibility for making medical judgments regarding the health of the animal(s) and the need for medical treatment, and the client (the owner of the animal(s) or other caretaker) has agreed to follow the instructions of the veterinarian.

- Such a relationship can exist only when the veterinarian has sufficient knowledge of the animal(s) to make a preliminary diagnosis and is personally acquainted with the keeping and care of the animal(s) by virtue of examination of the animal(s) and/or by medically appropriate and timely visits to the premises where the animal(s) are kept.

- Under a veterinarian's direction, FDA approved drugs can legally be used in food-producing animals in a way other than expressly directed on the label, but only when a VCPR exists.

- A VCPR details the veterinary oversight of approved animal drugs used in an operation.

- Approved animal drugs are classified by category; either over-the-counter (OTC), prescription (Rx) or veterinary feed directive (VFD).

- VFD records must be kept according to FDA regulations.

- Any extra-label use of medication in feeds, including VFD medications, by a producer or veterinarian is illegal.

Additional information can be found at: [http://www.fda.gov/AnimalVeterinary/default.htm](http://www.fda.gov/AnimalVeterinary/default.htm)
Establish and Implement an Efficient and Effective Health Management Plan.

GOOD PRODUCTION PRACTICE #2
Herd health is a key to food safety. Healthier animals grow more quickly and efficiently. Healthier animals generally require less therapy, thereby reducing the risk of residues and costs associated with treatment of sick animals. The development and implementation of a health management plan can have beneficial impact on your herd’s health through measures such as vaccination plans, biosecurity protocols and emergency preparedness.

A. Development of and Maintenance of a Vet/Client/Patient Relationship (VCPR)

Regular observations of the herd by your veterinarian are not only beneficial in maintaining a healthy herd, they also fulfill the requirements of a VCPR (VCPRs are explained in GPP # 1). Your veterinarian can observe the pigs in their current environment and review production, vaccination/treatment records and other veterinary information in evaluating the health status of the herd. In addition, any health problems you have noted since the last visit can be discussed and addressed. Many times the veterinarian can provide a “fresh set of eyes” and may observe subtle problems that have gone unnoticed by caretakers seeing them every day.

B. Herd Health Plan

A herd health plan is designed to address potential and current health challenges and to help prevent diseases from entering into your herd. In consultation with your veterinarian, formulate vaccination and parasite control programs tailored to your herd, considering factors such as the disease profile of the herd, type of production and facilities. Forms for outlining routine preventive measures are located in the Appendix. The plan can include the different vaccinations for each phase of the operation and treatment guidelines for common disease challenges observed on-farm. An example of a vaccination guideline for adult sows could include the use of a pre-farrowing vaccine to control E. coli scours in baby pigs or the use of a pre-breeding vaccination to control against the reproductive effects of Parvovirus, Erysipelas and Leptospirosis.

Another component of a herd health plan can include the development of a periodic health check of your herd. This plan can be developed with your veterinarian, in order to periodically survey the health status of the farm. The herd plan can be tailored to the herd and target diseases of interest. The herd health check can be accomplished through various methods to include necropsy of deceased pigs and submission of tissue, blood or oral fluid samples to a veterinary diagnostic laboratory. For example, many farms will periodically collect blood or oral fluid samples from various age groups of pigs in order to better understand their Porcine Reproductive and Respiratory Syndrome virus (PRRS) status.
Knowing the disease status of a herd can help your veterinarian create a specific health plan to help minimize the impact of a disease. Understanding the level of challenges can help producers decide on the best strategy for managing their herd health. Some options for disease control can include elimination of a disease or to try to control/manage a disease. Other options for disease control can include the development of a treatment plan for targeted disease challenges. Deworming may also be recommended depending upon your herd’s status.

C. Biosecurity

Biosecurity is a combination of management practices designed to prevent the introduction and transmission of diseases and disease-causing agents into a herd. Procedures that are typically associated with a biosecurity plan include barn sanitation, rodent control, worker and visitor entry policies and general farm security measures.

Biosecurity can be either external (keeping diseases out of a herd), or internal (keeping a disease already in one or more segments of the herd from spreading to other segments). However, all biosecurity measures should be focused on the prevention of the entry of unwanted diseases.

1. External Biosecurity

- Develop and visibly post your biosecurity standard operating procedures for caretakers and visitors.
- When possible, locate new animal facilities away from other swine herds and major transportation routes.
- Control wildlife and pests to prevent contact with your herd by including the use of perimeter fencing and bird screening.
- When contemplating the purchase of herd additions, ask your veterinarian to discuss the potential source herd’s current health status and its health maintenance program with that herd’s veterinarian.
- When possible, establish an isolation facility for quarantining new stock at a site that is remote and/or isolated from the existing herd. During this quarantine period, observe and test for diseases, vaccinate, medicate and acclimate the new animals as recommended by your veterinarian.
- Limit the number of visitors to your facility(ies) and minimize their contact with your pigs. Have visitors register (name, address and phone) and question them about recent contact with other swine and downtime between other animal/swine visits.
- Supply outer clothing (coveralls, boots) to all visitors. Require everyone to at least wash hands, if not shower, before entry to animal areas.
- Change clothes and shower after visiting other farms, livestock markets or exhibitions.
- Limit equipment and tools to those that have been cleaned and disinfected if they have been used on another hog farm.
- Transportation biosecurity can include:
  - Allow only cleaned and disinfected trucks on your farm.
  - Prohibit livestock truck drivers from entering your animal areas and loading chutes.
  - Design your load-out facility to prevent hogs from re-entering the barns after they have been on the truck or exposed to other animals and/or their manure.

An example of external biosecurity would be the isolation of incoming animals to test for unwanted diseases such as Porcine Reproductive and Respiratory Syndrome virus (PRRS) or others that are not already present in your herd.
Establish and Implement an Efficient and Effective Health Management Plan.

- Mortality management can include:
  - Consider composting of mortalities rather than having a rendering truck come to your farm.
  - For rendering vehicles, prohibit rendering trucks from areas near hogs or buildings.
  - Promptly move carcasses to a pick-up area that is protected from scavengers.
  - Locate feed storage bins so that delivery trucks do not cross through lots or animal traffic-flow patterns.

Additional information on biosecurity can be found at: University of Nebraska, Lincoln. Biosecurity of Pigs and Farm Security. Accessible at http://extension.unl.edu/publications.

2. Internal Biosecurity
- Determine the disease profile for your herd. Work with your veterinarian to periodically survey your herd for different disease challenges. This information can assist in developing a farm-specific internal biosecurity plan.
- Growing pigs should be kept in age-segregated groups. Options include:
  - When possible, operate all-in/all-out (AIAO) with cleaning and disinfection between groups.
  - Use AIAO by at least air space (room); however, a better practice is by building or site.
- Establish a traffic pattern for both pigs and people that prevents exposure of younger pigs to older pigs, their manure or people who have recently been in contact with them.
- Develop a routine check of all equipment and have an emergency plan for feed and water delivery.
- Provide dedicated boots and coveralls at strategic sites in the facility. Wash hands when boots and coveralls are changed. Because boot disinfection is sometimes difficult, disposable boots may be better if regular boots cannot be dedicated to a single site.
- Develop an effective farm sanitation plan. An effective internal biosecurity plan must include a complete cleaning and disinfection of each room or building between groups.
- With many factors influencing the choices of soaps and disinfectants, producers should discuss their options with their veterinarian, advisor or Extension specialist.

For additional information on disinfectants, see http://www.cfsph.iastate.edu/BRM/disinfectants.htm

Room/Barn Sanitation
- An effective internal biosecurity plan must include a complete cleaning and disinfection of each room or building between groups.
- Completely remove all organic materials and use compatible soaps and disinfectants to effectively kill harmful organisms.
- Allow the room or building to dry completely before placing the next group of pigs in it as the drying process further reduces the chance that disease-causing agents will survive until the next group of pigs arrives.
3. Rodent and Pest Control
Rodent and pest control should be included in biosecurity plans as rodents and other pests can compromise both external and internal biosecurity measures. They can bring new diseases into a herd as well as serve as a reservoir of disease affecting a herd.

Four elements of effective rodent control include:
1. Denying entrance to facilities and buildings.
2. Removing sources of food that can attract and maintain rodent populations.
3. Preventing or denying them cover and places to live.
4. Baiting/trapping to reduce rodent populations.

Effective methods of rodent control include:
1. Working with a rodent control specialist to develop a plan tailored to your operation.
2. Storing feed in rodent-proof bins and feeders; lids must be in place and tight-fitting.
3. Cleaning up feed spills promptly so not to attract rodents and wildlife.
4. Plugging holes and gaps in the walls and doors of buildings.
5. Placing bait stations strategically throughout the facility.
6. Maintaining a 3-foot “sterile zone” around the exterior of buildings.
7. Preventing refuge within 100 feet of the pig buildings.

Additional information is also available in the Pork Industry Handbook, on the National Pork Board website (http://www.pork.org) in the “Biosecurity in Pork Production” distance-learning program produced by Pork Checkoff and from the University of Nebraska’s website (http://rodent.swine.unl.edu).

D. Foreign Animal Disease (FAD) and Agroterrorism Awareness, Reporting and Prevention
Pork producers should increase their awareness of foreign animal diseases (FADs) and report all suspect cases to state animal health authorities. Producers should also take special precautions to prevent the accidental or intentional introduction of FADs onto their farms and report all suspicious activities to local law enforcement.

1. Develop an FAD education awareness plan for employees to help them recognize clinical signs that are consistent with diseases like Foot and Mouth Disease, Swine Vesicular Disease, Vesicular Stomatitis, Classical Swine Fever and African Swine Fever.

2. Develop a plan for reporting suspected FADs to state animal health authorities which should include:
   a. Internal reporting pathway and call tree for employees.
   b. External reporting pathway and call tree to state animal health officials.
   c. Temporary disease control and biosecurity measures until guidance is received from state animal officials.

3. Develop a biosecurity plan for international visitors and employees traveling to international destinations with policies and procedures that:
   a. Communicate expectations to employees regarding contact with livestock or areas where livestock are housed while traveling internationally.
b. Communicate expectations to employees regarding downtimes after traveling internationally.

c. Communicate expectations regarding employees declarations of agricultural products acquired while traveling internationally and exclusion of those products from the premises.

d. Establish criteria for exclusion, downtime and biosecurity for international visitors.

4. Develop a security plan with policies and practices to:

a. Thoroughly screen all job applicants and check references.

b. Prevent unauthorized access to premises, livestock or areas where livestock are housed.

c. Detect and/or report unauthorized access to the premises and or livestock.

d. Inform/update local law enforcement about your security plan.

**SUMMARY:**

Herd health is a key to food safety. A health management program should include these important components:

- **Regular observations of the herd** by your veterinarian are not only beneficial in maintaining a healthy herd as they also fulfill the requirements of a veterinarian/client/patient relationship or VCPR.

- **The development and maintenance of a herd health plan** will help to prevent and control health challenges within a herd.

- **Biosecurity** can keep diseases out of a herd, or keep a disease already in one or more segments of the herd from spreading to other segments. Biosecurity includes control of rodents and other pests as well as proper sanitation of the farm.

- **Development and implementation of an emergency management plan** will help prevent the introduction of foreign animal diseases and provide you with a plan of action if they are suspected.
3 Use Antibiotics Responsibly.

GOOD PRODUCTION PRACTICE #3
Pork producers use antibiotics for three purposes: treatment of illness, control or prevention of disease and to improve the nutritional efficiency of their animals so they need less feed to get to market.

- **Treatment of Illness** – The administration of antibiotics to combat a clinical illness. Antibiotics administered for treatment are delivered by injection, in feed or in water.
- **Control or Prevention of Disease** – The administration of antibiotics in animals that have been, or are being, exposed to a bacterial infection, or are in operations that have historically experienced clinical outbreaks of disease at certain production stages. Antibiotics for control/prevention are typically delivered in feed or water.
- **Improve Nutritional Efficiency** – Antibiotics administered to enhance the efficiency of pigs in converting feed to muscle. Antibiotics to improve nutritional efficiency are typically delivered in the feed.

**Principles and Guidelines for Responsible Antibiotic Use**
The National Pork Board has developed the following five principles to guide producers to use antibiotics responsibly:

- **Principle I.** Take appropriate steps to decrease the need for the application of antibiotics.
- **Principle II.** Assess the advantages and disadvantages of all uses of antibiotics.
- **Principle III.** Use antibiotics only when they provide measurable benefits.
- **Principle IV.** Fully implement the management practices described for responsible use of animal health products into daily operations.
- **Principle V.** Have a working veterinarian/client/patient relationship (VCPR) and follow the responsible antibiotic use guidelines.

**Principle I: Take appropriate steps to decrease the need for the application of antibiotics.**

A. **Preventive strategies, such as implementing biosecurity programs, appropriate animal husbandry, hygiene, routine health monitoring and vaccination programs, can help decrease the need for antibiotics.**

A comprehensive herd health plan as described in GPP #2 is key to maintaining animal health and productivity. Maintaining a healthy herd will minimize the need for antibiotics. This includes talking with your veterinarian about the health status of your herd – how it can be improved and how it can be protected.
Principle II: Assess the advantages and disadvantages of all uses of antibiotics.

Producers should consider the advantages and disadvantages of all uses of antibiotics, including animal health, welfare, environmental, food safety and economic impact. Consideration should include the potential for development of resistant bacteria that may impact animal and/or human health and the public image of the pork industry. Antibiotic treatment may not always be the most effective strategy. Consider management options that could be as, or more, effective than antibiotics. Medication should not always be the first option in addressing a health problem.

A. Other management options should be considered prior to, or concurrent with, utilizing antibiotic therapy.
   - Supportive care could include management changes in ventilation or housing, or the administration of antipyretics such as aspirin or other anti-inflammatory medications under the guidance of a veterinarian.
   - Options might include acidification of feed or water or electrolyte therapy.

When antibiotics are needed, remember that management changes and other supportive therapies may increase the effectiveness of the treatment plan.

B. Antibiotic use should be minimized by treating only for as long as needed for the desired clinical response.
   - Antibiotic use involves both dose (amount and frequency) and duration (length of treatment).
   - Label instructions can provide valuable guidance on the optimum dose and duration of treatment.
   - Extra-label use of an antibiotic must be by or on the order of a veterinarian, within the context of a VCPR and as outlined in the Animal Medicinal Drug Use Clarification Act described in GPP #1. It is illegal for a producer or veterinarian to deviate from the label when using antibiotics in the feed.
   - Administration of antibiotics in chronic, non-responsive cases may not be effective.

Work with your veterinarian to create proper protocols for any herd health regimen that requires antibiotics.

C. Periodically assess the need for continuing preventive antibiotic therapy.
   Formally review any regimen that includes antibiotics on a regular basis with your herd veterinarian. Assess if there are other management changes you can make to reduce the need for antibiotics. Is the condition that was initially diagnosed, and that required antibiotic treatment, still present? Don’t let antibiotic use become routine.

Principle III: Use antibiotics only when they provide measurable benefits.

A. Assess the measurable benefits of all uses of antibiotics.
   - The Food and Drug Administration (FDA) approves products based on their safety (human, animal and environmental) and efficacy. The agency considers the risk to public health from antibiotic resistant bacteria.
   - The FDA does not consider economic benefit in the approval decision. Producers have to assess potential economic benefits for their operation when deciding on product use.
• Reduced mortality, morbidity and improved animal welfare are measurable benefits that can result from the appropriate treatment and prevention of disease.

• The measurable benefit from increased nutritional efficiency can reduce days to market, improve feed utilization and reduce animal waste.

• Producers may have the option of supplying markets that require certain restrictions for antibiotics based on marketing decisions. Consider pig welfare, management implications and economic impact of adopting those specified production practices when choosing if you will participate in that market.

Evaluate these benefits on your farm to ensure there are measurable benefits from using antibiotics.

B. **Assessing the measurable benefits of antibiotic use for nutritional efficiency should be based on scientific data.**

Data published in scientific journals, university publications and clinical trials are examples of science-based data that could help in making the decision about using antibiotics to enhance nutritional efficiency. Properly designed on-farm trials can provide reliable data to determine measurable benefits of antibiotic administration.

Work with your veterinarian or nutritional advisor to help you design scientifically valid on-farm trials. Improperly designed trials will not provide you reliable information you can use to make decisions. If your herd health or management changes, you should reevaluate antibiotic regimens to determine if there is still a measurable benefit. Review them regularly with your veterinarian and nutritionist.

**Principle IV: Fully implement the management practices described for responsible use of animal health products into daily operations.**

A. **Complete the Pork Quality Assurance® Plus (PQA Plus®) program and fully implement the Good Production Practices.**

PQA Plus is recognized as the industry’s commitment to the production of safe and wholesome pork. Implementation of the PQA Plus Good Production Practices (GPPs) is an important step toward using antibiotics responsibly. Implementation of GPPs will also help you ensure there are no violative drug residues in the animals you deliver to the packing plant. The issue of drug residues is separate from, and not related to, antibiotic resistance.

B. Pork producers have long been required to follow the guidelines set forth in the FDA’s published Compliance Policy Guide (CPG) 615.200 (Proper Drug Use and Residue Avoidance by Non-veterinarians):

• Accurate records of treatment as described in GPP #6 should be used to evaluate effectiveness.

• Medicine withdrawal times as described in GPP #6 must be followed to avoid residues.

• Accurate animal or group identification as described in GPP #6 must be employed within a production system for evaluation of your herd health plan and for residue avoidance.

Make sure to keep written records of all medication uses. Whether the drug is used according to the label or in an extra-label manner, or it is a veterinary feed directive (VFD) product, the written records should include identification of the animal(s) treated (individual animals, pens, lots, etc.), the date(s) of treatment, the drug(s) administered, who administered the drug(s), the amount administered, and the withdrawal time prior to slaughter.
Maintain medication and treatment records. Written records are essential for verifying that you are using antibiotics wisely. In this instance, the job isn't done until it is written down. Protect yourself, public health, your industry and the confidence consumers and government agencies have in your ability to produce a safe product by keeping a written record of every antibiotic use on your farm.

**Principle V: Have a working veterinarian/client/patient relationship (VCPR) and follow the responsible antibiotic use guidelines.**

The National Pork Board has developed the following six guidelines to help producers, in consultation with their veterinarian, use antibiotics responsibly:

**Guideline A.** Use professional veterinary input as the basis for all antibiotic decision-making.

**Guideline B.** Antibiotics should be used for treatment only when there is an appropriate clinical diagnosis.

**Guideline C.** Limit antibiotic treatment to ill or at-risk animals, treating the fewest animals indicated.

**Guideline D.** Antibiotics that are important in treating antibiotic resistant infections in human or veterinary medicine should be used in animals only after careful review and reasonable justification.

**Guideline E.** Mixing together injectable or water medications, including antibiotics, by producers is illegal.

**Guideline F:** Minimize environmental exposure through proper handling and disposal of all animal health products, including antibiotics.

**Guideline A: Use professional veterinary input as the basis for all antibiotic decision-making.**

- As described in GPP #2 the responsible use of antibiotics should meet all requirements of a VCPR.
- Prescription and the use of antibiotics in a manner other than what is on the label (extra-label drug use) must meet all the requirements of a VCPR.
- The law prohibits extra-label use of antibiotics in the feed, even by a veterinarian.

Even though it is legal to obtain and use some veterinary antibiotics “over-the-counter” (OTC), pork producers must protect animal health and public health and consumer confidence through responsible antibiotic use. Also, although a product may be available OTC, any change to its labeled directions – dosage, interval, condition being treated, age or class or animal treated, etc. – can only occur under the direction of the veterinarian for your operation. Doing otherwise is illegal even though the medication is available OTC. Getting the advice of the veterinarian before purchasing and using OTC products will meet these obligations and save you money because the antibiotic, expense and time won’t be wasted.

Before a drug is used in a manner not in accordance with the approved drug labeling (change in dosage, frequency or route of administration, duration of treatment, disease or condition treated, age, class or animal species), a veterinarian MUST be involved. Work with your veterinarian to make sure that all extra-label drug use meets the requirements of the Animal Medicinal Drug Usage Clarification Act regulation.
Important information is included on the label and in the package insert that comes with the antibiotic. If there is any question about the appropriate regimen, (dosage, directions for use, frequency, route of administration, cautions and withdrawal times if necessary) ask your veterinarian.

**Guideline B: Antibiotics should be used for treatment only when there is an appropriate clinical diagnosis.**
- Diagnosis is supported by clinical signs, necropsy, laboratory tests, herd history, etc.
- An accurate diagnosis includes identification of factors contributing to the cause of the disease.
- Culture and sensitivity results can aid in the selection of antibiotics.

*Insist on an accurate diagnosis, including culture and sensitivity results when appropriate. This will save you money by saving time in treatment and by establishing a pattern of bacterial susceptibility on your farm. Look for other management factors such as ventilation, pig flow, etc., that may be contributing to disease.*

**Guideline C: Limit antibiotic treatment to ill or at-risk animals, treating the fewest animals indicated.**
- Consider group morbidity and mortality rates when deciding whether or not to initiate herd, group or individual therapy.
- Consider the herd health history when selecting antibiotics.
- When the above factors are appropriately considered, prevention of disease in at-risk animals is a responsible use of antibiotics.

*There are times when administering antibiotics to prevent disease will ultimately mean less antibiotics will be used than if treating the same group of animals following an outbreak. Responsible use of antibiotics during treatment includes administering antibiotics only when necessary, to the smallest number of animals feasible and for the least amount of time necessary to prevent reoccurrence of the disease.*

**Guideline D: Antibiotics that are important in treating antibiotic resistant infections in human or veterinary medicine should be used in animals only after careful review and reasonable justification.**
- Culture and sensitivity results should be considered when selecting antibiotics used for treatment.
- Discuss product options with your veterinarian to select the most appropriate therapy for your specific situation.

*Ask your veterinarian which antibiotics are recommended for any disease condition on your farm and how they could impact antibiotic resistance on your farm and in human health. Work with your veterinarian to consider product choices and develop treatment protocols to minimize development of resistance or cross-resistance. Have a written action plan for antibiotic use, and review it regularly with your veterinarian.*

**Guideline E: Mixing together injectable or water medications, including antibiotics, by producers is illegal.**
As an example, it is illegal to mix an antibiotic and iron together on the farm for use while processing piglets.
Guideline F: Minimize environmental exposure through proper handling and disposal of all animal health products, including antibiotics as described in GPP#2.

- Water medicators and feeders need to be properly adjusted to deliver the desired dose and avoid spillage and waste.
- Ensure proper handling and disposal of any outdated or unused animal health products through communication and employee training.

For Additional Information See:
- AASV Position Statement on Judicious Use of Therapeutic Antimicrobials Approved 1999
- National Pork Board Position on Antimicrobial Use in Pork Production Issues July 2002
- Food and Drug Administration Guidance for Industry #152
- Animal Medicinal Drug Use Clarification Act
- Extra-label Drug Use Algorithm for Veterinarians

SUMMARY:

Pork producers use antibiotics for three purposes:
- Treatment of Illness
- Control or Prevention of Disease
- Improve Nutritional Efficiency

Principles for responsible antibiotic use include:
- Principle I. Take appropriate steps to decrease the need for the application of antibiotics.
- Principle II. Assess the advantages and disadvantages of all uses of antibiotics.
- Principle III. Use antibiotics only when they provide measurable benefits.
- Principle IV. Fully implement the management practices described for responsible use of animal health products into daily operations.
- Principle V. Have a working veterinarian/client/patient relationship and follow the responsible antibiotic use guidelines.

Guidelines for responsible antibiotic use included:
- Guideline A. Use professional veterinary input as the basis for all antibiotic decision-making.
- Guideline B. Antibiotics should be used for treatment only when there is an appropriate clinical diagnosis.
- Guideline C. Limit antibiotic treatment to ill or at-risk animals, treating the fewest animals indicated.
- Guideline D. Antibiotics that are important in treating antibiotic resistant infections in human or veterinary medicine should be used in animals only after careful review and reasonable justification.
- Guideline E. Mixing together injectable or water medications, including antibiotics, by producers is illegal.
- Guideline F. Minimize environmental exposure through proper handling and disposal of all animal health products, including antibiotics.
GPP #3
Use Antibiotics Responsibly.

NOTES:
Properly Store and Administer Animal Health Products.
Everyone - managers, employees and family members - who may be involved in treating pigs must know and use proper techniques for administering medications. Each producer should develop an education plan so that everyone involved in animal care will know the responsibilities for giving medications to a food-producing animal and for documentation of training.

A primary responsibility of all pork producers is to produce safe food. A component of food safety is freedom from violative drug residues. This involves knowing where the information can be found about withdrawal times, how to calculate when the withdrawal is complete and when it is safe to market an animal. The plan to prevent marketing adulterated animals or animals with violative residues must be given to all animal caretakers. The plan must instruct on methods used to follow label directions, identify treated animals and record treated animals or groups. Clear, well-kept records will allow anyone to quickly determine that the correct withdrawal time has elapsed before animals leave a location. Employees and employers are responsible for following label directions or directions provided by a veterinarian medicating the animals under a veterinarian/client/patient relationship (VCPR).

Responsibilities for Properly Administering Products

1. Read, understand and follow label directions when giving any medication.
2. Devise a medication record and animal or group ID system that enables all caretakers to know the medication status of animals prepared for harvest.
3. Identify all treated animals (refer to GPP #6).
4. Keep records for making judgments about marketing animals that have been treated.
5. Use medication records to determine when withdrawal times have been completed.

Drug Labels

The drug label provides important information to producers. Labels should be read and understood before giving any medication. If the medication is being used in an extra-label manner, the use/restrictions from your veterinarian should be observed rather than the label instructions.

Drug labels contain:
- Trade Name
- Active Ingredient
- Indications
- Dosage and Directions for Use
- Precautions
- Warnings
- Withdrawal Times
- Manufacturer’s Lot Number
- Expiration Date

Fictional Medication Label

Omnibiotic

Trade Name

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

Indications: Cattle - bronchitis, foot rot, leptospirosis, marined, mastitis, pneumonia, wound infections. Sheep - ovary infections. Sheep - foot rot, prostraria, mastitis, and other infections in these species caused by or associated with hydrolcillin-susceptible organisms.

Recommended Daily Dosage:
The usual dose is 2 ml per 100 lb. of body weight given once daily. Minimum dose is 17 ml/day.

Dosage

<table>
<thead>
<tr>
<th>Body Weight</th>
<th>Dosage</th>
</tr>
</thead>
<tbody>
<tr>
<td>200 lb.</td>
<td>2 ml.</td>
</tr>
<tr>
<td>300 lb.</td>
<td>3 ml.</td>
</tr>
<tr>
<td>400 lb.</td>
<td>4 ml.</td>
</tr>
<tr>
<td>500 lb.</td>
<td>5 ml.</td>
</tr>
<tr>
<td>700 lb.</td>
<td>7 ml.</td>
</tr>
</tbody>
</table>

Continuous treatment for 5 to 7 days after complete disappearance.

Caution: 1. Omnibiotic should be injected deep within the flabby muscles of the neck. Do not inject this material in the lip or stump, inadvertently, into a blood vessel, or near a major nerve because it may cause local damage. 2. If improvement does not occur within 48 hours, the diagnosis should be reconsidered and appropriate treatment attempted. 3. Treated animal should be closely observed for at least 32 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. 5. Warning: Milk that has been taken from animals during treatment and for 48 hours (8 milking) 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.

New Applied: Omnibiotic is available in vials of 100 ml.

Lot # 56789F Expires June, 20XX
**Drug Storage**

Follow proper drug storage instructions located on the label. Most medications require storage in a clean, dry and dark location. Inventory rotation needs to be implemented to avoid accumulation of out-of-date products. Consider routine monitoring and recording of refrigerator temperatures.

Medications should be viewed as a perishable commodity. They must be protected from damage by environmental conditions and from contamination.

The effectiveness of a stored drug may be quickly diminished by temperature extremes or exposure to sunlight. Some drugs are best stored at room temperature while others require refrigeration. Most vaccines and some antibiotics should be refrigerated at 40° F - 45° F. Always refer to the label for the correct storage instructions of any product. As a rule, once a bottle of injectable medication has been opened, it should be stored in a refrigerator unless specifically directed otherwise by the label instructions or by your veterinarian.

To avoid using medications that have lost some of their potency, the supply of medication should be limited to only what will be used well before the expiration date. The inventory should be rotated so that those bottles/packages with the shortest expiration date are used first. Periodically check products for expiration and properly discard those that are expired.

In addition to preserving the efficacy of drugs in storage, it is also important to maintain their identity. Medication should be stored in the original container bearing the product label. If a product is placed in another container, it should be clearly labeled immediately to prevent misidentification.

The practice of withdrawing an injectable medication and storing it in a syringe for later use should be avoided. These syringes are often unlabeled so one medication may be mistaken for another resulting in unsatisfactory treatment response or withdrawal time mistakes. Syringes do not provide the protection from contamination and sunlight degradation that a colored glass vial does. Additionally, syringes that have been cleaned and disinfected may have a soap or disinfectant residue that can inactivate the drug or vaccine left in them for a period of time.

Medication must be stored in a way to prevent contamination. Injectable medications should be kept in a tightly sealed, clean bottle. Clean the rubber stoppers before inserting a needle into the vial. Use only clean needles to withdraw contents from multi-dose vials. Dirty needles can contaminate the contents of the vial. This contamination can be the cause of injection-site reactions and abscesses.

For many vaccines, the label directions will state, “use the entire contents immediately when opened.” These vaccines lose their effectiveness rapidly and should be discarded, according to the label, if not used after they are opened or rehydrated.

**Drug Inventory and Usage Records**

Producers are encouraged to keep drug inventory and usage records as outlined in GPP #6. Not only will these records reflect trends in medication usage by comparing the treatments in one period with another, the records can be used for accountability. Periodic (monthly, quarterly, annually) reconciliation between inventory and usage patterns should be completed. Do the medication records match the inventory usage over the time allocated? If purchases far exceed the amount indicated on medication records, managers should determine if not all treatments are being recorded or if medications are being wasted or shrinkage has occurred.
GPP #4
Properly Store and Administer Animal Health Products.

Administering Medications
Medications are commonly administered to pigs in three ways: orally, topically or by injection. Each method has advantages and disadvantages based on the situation.

Methods of Providing Medication to Pigs

1. Oral
Oral medications are those that are given through the mouth. When a large number of animals are to be medicated, water and/or feed can sometimes be used as vehicles to deliver the medication. These routes are less stressful to the animals as well as to the people giving the medication. An added benefit to oral medications is that there is no risk of broken needles or injection-site reactions.

Medicated feed may be the method of choice when treating animals for multiple days in succession. When using medicated feed, all instructions on the feed tag or delivery slip must be followed. Residual feeds should be removed from bins and feeders so that the medicated feed is introduced rapidly and in proper concentration. Feed intake should be monitored because medication must meet therapeutic levels to be effective and may not reach these levels if daily feed intake is curtailed. Extra-label drug use in feed is not an option; it is illegal.

Medications can also be given in the pigs’ drinking water. Medicated water can be delivered to the pigs quickly in facilities that have a water medicator installed in the supply line and can therefore supply a temporary source of medicated water. In other cases, it is necessary to empty water fountains or to block them so the pigs have access only to medicated water. Water medications are a flexible treatment option allowing for the modification of dosage based on current water consumption patterns. For some bacterial diseases, individual oral treatment may be necessary because it is the only route that can guarantee therapeutic levels.

2. Topical
Some medications are administered by applying them to the skin of the pig. Examples include sprays, dusts, pour-ons and dips. Most of the topical medications are for parasite control. Care must be taken to prevent chilling of pigs when using sprays or dips in cold weather.

3. Injection
Injections are useful when treating individual animals and may be the only practical way of medicating pigs that are too sick to eat or drink and for some medications that are poorly absorbed from the gut. Some form of restraint may be needed to administer the drug by injection. It is also important to properly identify the pig at this time. Injections present a risk of broken needles and injection-site reactions. Only inject into clean, dry areas.

Administration of Injectable Drugs
Improper injection techniques cause a significant loss to the pork industry each year. Injection-site reactions, broken needles and lack of product efficacy are consequences of improper injection technique.

There are five ways to give injectable medications to pigs:

1. In the Muscle (Intramuscular - IM)
   • Use a spot on the neck just behind and below the ear, but in front of the shoulder.
   • Do not use a needle to inject in the ham or loin, unless directed to do so by your veterinarian. There may be some bleeding and bruising of the muscle followed by scarring. This scar can stay in the muscle for the life of the pig and be a blemish in the cut of meat. This standard applies to sows, as well as to market hogs. While sows
may not be going to market soon, they are at greater risk for blemishes because of the repeated injections they typically receive over their productive life in the form of vaccinations and farrowing medications.

- If you consider the use of alternate techniques or technologies, the veterinarian and packer can help to determine the acceptability of these techniques in avoiding carcass defects and/or physical hazards such as broken needles or abscesses, which impact valuable meat cuts in the carcass.
- Use the proper size and length of needle to ensure the medication is deposited in the muscle, not in other tissues (Table 1).

2. **Under the Skin (Subcutaneous – SQ)**
   - Use the proper length of needle and angle to avoid injecting into muscle, as that changes drug metabolism and withdrawal times (Table 2).
   - Slide the needle under the skin away from the site of skin puncture before depositing the product.
   - For small pigs use the loose flaps of skin in the flank or behind the elbow.
   - For larger pigs inject in the neck behind the ear at the same location as for IM injections.

3. **In the Abdominal Cavity (Intraperitoneal – IP)**
   This technique SHOULD BE USED ONLY UPON VETERINARY INSTRUCTION and guidance as serious injury, including death of the pig, can occur.

4. **In the Vein (Intravenous – IV)**
   This technique SHOULD BE USED ONLY UPON VETERINARY INSTRUCTION and guidance as serious injury, including death of the pig, can occur.

5. **In the Nasal Passages (Intranasal – IN)**
   - Withdraw the product from the bottle using a syringe and needle. Remove the needle from the syringe. Use the recommended application tip for administering the product.
   - Keep the pig’s head tilted upward during and immediately following administration to help the product be inhaled into the deep nasal passages.

Pork Checkoff-funded research on needle strength shows that disposable needles will rarely break during the initial use. However, the needle shaft is much more likely to break if it has been bent during an injection, straightened and used again, or after repeated use.
Develop a Standard Operating Procedure (SOP) for Needle Breakage

A standard operating procedure (SOP) for needle inventory and usage for your operation will help address needle breakage in a logical, consistent way. All animal caretakers, including employees and family members, need to understand and follow the SOP. When needle breakage occurs, it must be reported with honesty.

Consider including in your SOP:

1. **Prevention**

   A. Evaluate the strength and detectability characteristics of the needles you are using. Information is available on the Checkoff website, www.pork.org.
      - This includes the quality of the needle/hub.

   B. Provide needle-use guidelines to all animal caretakers that address:
      - Ensuring proper animal restraint.
      - Selecting the proper site and technique for injection.
      - Selecting the proper size and length of needle according to the pig’s age, the injection site selected and the characteristics of the product to be injected.
      - Changing the needle when appropriate to maintain cleanliness and sharpness.
      - Taking measures to minimize the loss of needles in areas occupied by hogs.
        Retrieve dropped needles. Packers report finding needles lodged in the tissues around the mouth, throat and jowls of sows and market hogs. As many of these needles are intact, it must be assumed that they have been dropped in a pen and chewed on by the pig.
      - Changing bent needles – NEVER STRAIGHTEN A BENT NEEDLE, ALWAYS CAREFULLY REMOVE AND REPLACE IT.
      - Considering the appropriate number of needles that would be reasonable to use for a particular job. Then account for and reconcile the number of needles at the beginning of the job and the number of needles at the finish.

2. **Identification of Hogs that are at Risk or Carrying a Broken Needle**

   - Provide employees appropriate training.
   - Establish a plan for immediately identifying hogs known or suspected of harboring a broken needle fragment.
   - Provide permanent identification of the animal if the identification applied at the time of the incident is not permanent.
     - The permanent identification should be recognizable by all caretakers and packers.
   - Record all pertinent information regarding the event (information could include: activity, gauge and brand of needle, location, restraint used, person giving the injection, person who reported it).

3. **Communicate with Your Packer**

   - Find out your packer’s notification and payment policies for at-risk pigs. Use this information as you develop the needle SOP for your operation.
     - How are the hogs to be marked?
     - How is the packer to be notified?
   - Keeping broken needles out of the pork supply helps maintain the confidence of consumers when purchasing our products. No matter where you market your
hogs or pigs, you must be diligent in informing buyers or processors of any pig potentially contaminated with a needle.

**Disposal of Used Needles and Surgical Knives**

Used needles, knife blades and syringes are called “sharps” and must be disposed according to state medical waste regulations to prevent environmental contamination and injury to fellow workers, children, waste handlers and livestock. Proper disposal involves placing sharps in a rigid puncture-resistant container immediately after use. Glass containers are not acceptable for sharps disposal because the glass container is more likely to break in the disposal process. Commercially available containers can be purchased from many farm supply stores, safety supply houses, drug stores or veterinarians. Regardless of the container type it should prevent the penetration of needles both on the farm and throughout transport to the final disposal location. 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. For the rules that apply to your farm, contact the agency in charge of overseeing the disposal of biomedical wastes in your state. The website www.epa.gov provides information about agencies in each state that regulate biomedical or infectious waste disposal. Approved sharps collection stations are available in some regions. Another option may be to ask your veterinarian or a local hospital if they accept farm-generated medical wastes.

Minimize environmental exposure through proper handling and disposal of all animal health products, including antibiotics. Water medicators and feeders need to be properly adjusted to deliver the desired dose and avoid spillage and waste. Ensure proper handling and disposal of any outdated or unused animal health products through communication and employee training.

Sewage systems and septic tanks are not designed to remove antibiotics from the discharge water. Regulations regarding the disposal of unusable antibiotics vary from state to state. Unless specifically prohibited by local regulations, antibiotic preparations that are no longer wanted should be discarded in a commercial sanitary landfill. These landfills are monitored by the Environmental Protection Agency and engineered to prevent leachate from contaminating ground water.
GPP #4
Properly Store and Administer Animal Health Products.

**SUMMARY:**

**Drug labels contain the following:**
- Trade Name
- Active Ingredient
- Indications
- Dosage and Directions for Use
- Precautions
- Warnings
- Withdrawal times
- Manufacturer’s Lot Number
- Expiration Date

Always refer to the label for correct storage of any product.

**Medications are commonly administered to pigs in three ways:**
- Oral
- Topical
- Injectable

**There are five ways to give injectable medication to pigs:**
- In the Muscle (Intramuscular - IM)
- Under the Skin (Subcutaneous – SQ)
- In the Nasal Passages (Intranasal - IN)
- In the Abdominal Cavity (Intraperitoneal – IP)
- In the Vein (Intravenous – IV)

Never straighten and reuse a bent needle!

**Develop a standard operating procedure (SOP) for needle breakage and consider including:**
- Prevention of needle breakage
- Identification of hogs that are at risk or carrying a broken needle
- Communications with your packer
Follow Proper Feed Processing Protocols.
The goal of feed manufacturing is to produce feed that:

- Meets specifications for nutritional composition.
- Meets the desired medication level, if appropriate.
- Is free of contaminants, or contaminants that are below established tolerances or action levels.

Ruminant-Derived Products

Be aware that the Food and Drug Administration (FDA) bans feeding of ruminant-derived products, such as ruminant-derived meat and bone meal, back to ruminants. Feed for swine can legally contain ruminant-derived products. The current FDA policy states that cattle accidentally fed ruminant-derived protein are permanently prohibited from use as human food regardless of the withdrawal time or the amount of ruminant-derived protein consumed. Therefore, measures must be taken to keep cattle, sheep, goats and other ruminants from having access to hog feed if it might contain ruminant-derived products.

Feed Processing Protocols

A set of guidelines for processing non-medicated and medicated feed, referred to as current Good Manufacturing Practices (cGMPs), provide reasonable assurance that the feed is manufactured accurately. The cGMPs must be followed to ensure safe, wholesome meat products for human consumption. The cGMPs outline the standards for non-medicated and medicated feed manufacturing facilities, ingredients, the manufacturing process, monitoring, labeling and records needed to assure a medicated feed product that is suitable for feeding livestock intended for human consumption.

cGMPs for All Feeds

1. Buildings and Grounds
   - Prevent accumulation of dust that could contaminate finished feeds and present a fire hazard.
   - Premises should be constructed to ensure access for preventative maintenance ease of operation, maintenance, cleaning, pest control and minimize feed contamination.
   - Ensure adequate space exists for equipment, processing and storage of feeds.
   - Employ inspection and control procedures to secure compliance with required standards for production, storage and transport of feed and feed ingredients.

2. Equipment
   - Check equipment to be sure it can produce feeds of intended nutritional levels, safety and purity.
   - Clean up spills, fix leaks in equipment and prevent build-up of feed ingredients.
   - Check scales, mixers and metering devices to ensure they are accurate, functioning properly and are suitable for their intended purpose.
• All equipment used in the manufacturing of feed/feed ingredients should be monitored regularly for functionality.
• The equipment must be of suitable size and construction to facilitate cleaning and adjustments when needed.
• Avoid contamination of equipment used to transport/store water.
• Bags/totes used as packaging shall not be reused unless cleaned using appropriate and documented procedures.
• Use approved lubricants and coolants. Use of non-approved products may introduce chemical residues into the animals’ feed. Equipment used for manufacturing dry feed should be thoroughly dried following any wet cleaning.
• Minimize the potential for cross-contamination of feed during mixing.
• Observe good animal feeding practices that minimize biological, chemical and physical risks.

3. Workspace and Storage
• Design workspaces and storage areas to avoid accidental contamination of feed.
• If mixing non-medicated and medicated feeds at the same location, ensure that non-medicated feed work areas, equipment and storage areas are physically separated from medicated feed work areas.
• Feed work areas also should be separated from equipment or storage used for herbicides, pesticides, fertilizers and ingredients not intended for inclusion in feeds.
• Properly label and store agricultural chemicals separately from feed manufacturing, feed storage, feed areas and feed ingredients.
• Store processed feed/feed ingredients separately from unprocessed feed ingredients.
• Utilize precautions to minimize spoilage and condensation and limit fungal and bacterial growth.
• Employ pest control programs.

4. Quality Control
• Laboratory assays: consider analyzing feeds periodically for their composition or ask your feed supplier for this information.
• Feed ingredients produced on the farms should meet the same requirements as for feed ingredients sourced off the farm.
• Utilize scientifically recognized principles and procedures for sampling protocols and laboratory analysis.
• Use pathogen-control procedures where appropriate.
• Good agricultural practices should be applied during all stages of on-farm production of crops used as feed/feed ingredients for food producing animals.
• Provide correct feed to the right animal group and follow directions for use.
• Water should meet hygienic standards.
• Avoid contamination of equipment, feed and feed ingredients when disposing of sewage, other waste and rainwater.
• Use appropriate packing materials.
• Feed contaminated with undesirable substance should be clearly marked, not used, and discarded appropriately.
5. **Labeling**
   - Recognize that non-medicated feeds should have a different label than medicated feeds.
   - The label should accompany bulk feed shipments and deliveries, identify the product and contents and provide directions about use.
   - Obsolete labels should be discarded promptly.

6. **Recordkeeping**
   - Visually inspect received feed ingredients for quality or defects.
   - Written records that contain the delivery date, method, carrier and any observations about color, weight or other quality measurements will be very useful if a question of feed quality or contamination is ever raised.
   - Samples of ingredients and finished feeds should be taken, identified appropriately and stored for six months.
   - Feed inventory records should enable the manager to perform both trace-back and trace-forward of each batch of ingredients to the group of animals that consumed it.
   - Maintain records regarding production, distribution and use of feed/feed ingredients.
   - Voluntary recalls of feed/feed ingredients should be guided by FDA procedures or appropriate corrective actions.

7. **Employees**
   - Employees should observe proper hygiene to minimize potential hazards to food safety from feed.
   - Provide training for all personnel involved in manufacture, storage and handling of feed/feed ingredients and document the training.

**Additional cGMPs for Medicated Feeds**

In addition to the cGMPs listed above for general feed manufacturing, the following are additional requirements for use when manufacturing medicated feeds. It is critical to follow these additional requirements to ensure that pigs receive proper dosages of medication and that proper withdrawal times are adhered to.

1. **Medication**
   - Comply with federal residue levels for feed.
   - Feed additives and veterinary drugs used in medicated feed should be assessed for safety.
   - Identify animals receiving medicated feeds and ensure those animals receive the appropriate withdrawal period.

2. **Equipment**
   - Employ methods such as flushing, sequencing and physical clean-out between batches of feed/feed ingredients containing restricted/potentially harmful material and between medicated and non-medicated feed.
   - Clean transport vehicles and feeding equipment used for medicated feed after use if a different feed is to be used next.
   - Use separate production lines where necessary.
3. **Workspace and Storage**
   - If mixing non-medicated and medicated feeds at the same location, ensure that non-medicated feed work areas, equipment and storage areas are physically separated from medicated feed work areas.
   - Inventory practices shall be used to minimize risk of adulteration.

4. **Quality Control**
   - Laboratory assays: consider analyzing feeds periodically for their nutritive and/or medication content or ask your feed supplier for this information.
   - Equipment cleanout procedures (includes bins, trucks and feeders): establish equipment cleanout procedures (physical cleanout, flushing, sequencing of production and delivery sequencing) to prevent unsafe cross contamination of feeds or carryover of medicated feed products.
   - Ensure agriculture chemicals comply with in-place regulatory system.
   - Provide correct medicated feed to the right animal group and follow directions for use.
   - Medicated feed contaminated with undesirable substance should be clearly marked and not used and discarded appropriately.
   - Minimize the potential for cross-contamination of feed during mixing.
   - Observe good animal feeding practices that minimize biological, chemical and physical risks.

5. **Labeling**
   - Receive, handle and store medications and their labels in a way that prevents confusion.
   - Label medicated feed/feed ingredients consistent with statutory requirements; labels should describe the feed and provide instructions for use.
   - Make sure the correct label is fixed to all medicated feed containers you receive or store.
   - The medicated feed label should accompany bulk feed shipments and deliveries, identify the product and contents, provide directions about use and state withdrawal times. Recognize that non-medicated feeds should have a different label than medicated feeds.

6. **Recordkeeping**
   - Keep written records of medicated feed production. The medicated feed mixing records chart found in the Appendix includes the minimum information that must be kept.
   - Producers retain records for two years from date of order. Veterinarians keep VFD order 2 years after date of issuance.

**Calculating the Amount of Medicated Feed to Add to the Mixer**

When manufacturing a medicated feed, it is important to make sure the feed contains the proper concentration of the drug. When mixing various feed ingredients, caretakers need to be aware that feed ingredients may have variable densities, so volume may not equal weight. If the concentration is lower than desired, there may be little or no beneficial effect. If the concentration is higher than directed on the label, there may be health effects for the pigs or violative residues. Refer to the manufacturer’s directions to determine the amount of medicated article/feed needed to achieve the desired concentration in the final feed product. Manufacturers usually provide a table or guide showing the amount of their product that must be added to attain the desired drug use level.
GPP #5
Follow Proper
Feed Processing Protocols.

SUMMARY:
Current Good Manufacturing Practices (cGMPs) set standards for:
- Manufacturing Facilities
- Ingredients
- Manufacturing Processes
- Monitoring
- Labeling
- Recordkeeping
- Employees

NOTES:
Establish Effective Swine Identification, Medication Records and Withdrawal Times.

GOOD PRODUCTION PRACTICE #6
Caretakers who may be involved in treating pigs, must know and use proper techniques for administering medications, and understand the responsibilities that go along with swine identification, medication records and withdrawal times to a food-producing animal. Each producer shall develop an education plan for these individuals and document the training.

Effective Swine ID

Even before there is a need to treat an animal, you should decide which methods of identifying treated animals are most appropriate in your operation.

You must be able to reliably identify treated pigs or groups of pigs from the time they receive the medication until they have completed their withdrawal time. Regardless of the individual or group identification method used, the Swine ID Plan’s program standards require ID and movement records to be kept on file for three years after the hogs have been marketed. Always be aware of product use that could end up causing a violative residue if inadequate withdrawal times are used. Marketing decisions for sows and small roaster pigs often put these animals at higher risk, and special attention must be taken when medicating these types of animals.

Without first identifying animals, it is nearly impossible to keep meaningful records. Many producers use some form of sow card or building record for tracking animals. Examples of medication records can be found in the Appendix. When individual animal identification is not practical, a whole pen can be tracked and retained with a group/lot identification number until the medication withdrawal time has elapsed. To be effective, each nursery, grower and finisher pen should be uniquely and visually identified in a systematic manner. Do not rely on descriptions such as “third pen on the south side” as it is more likely to cause confusion or misinformation to occur in marketing decisions.

Swine ID Plan

The Swine ID Plan is an initiative to implement a set of industry developed and approved program standards, for the purpose of improving pre-harvest traceability and disease surveillance. This plan will help meet increasingly stringent customer demands and will help protect animal health. The program standards are consistent with the federal and state codes of regulations and there are three key components - premises identification, animal identification and animal tracing.

1. Premises Identification

Premises identification is the process of registering a location where livestock are raised, housed or pass through during commerce. Once registered, a standardized Premises Identification Number (PIN) is assigned by the U.S. Department of Agriculture after the site is registered through the state. The standardized PIN consists of seven alphanumeric characters with the right-most character being a check digit. This standardized PIN is different than the state-assigned Location Identification Numbers (LID).

2. Animal Identification

Animal identification is the process by which pigs are officially identified individually or as part of a group or lot. You will be responsible for officially identifying your swine in compliance with the Swine ID Plan’s program standards, which includes the parameters for officially identifying groups and individual animals. Before the animals enter harvest channels, the standards specify the application of an official ear tag bearing the PIN of the breeding farm.
for slaughter breeding swine. Official PIN tags provide producers a reliable method to identify sows and boars to the premises where they were kept immediately prior to entering harvest channels and provides a mechanism to associate breeding stock to the movement, health and treatment records required by Pork Quality Assurance® Plus. Official PIN tags are customizable for use as a management tag and also allow producers a mechanism to distinguish their cull breeding swine within a commingled group in market channels. This helps to decrease the risk of business disruptions caused by tracebacks initiated on commingled groups where insufficiently identified animals are the cause of the traceback.

3. Animal Tracing

Animal tracing can be accomplished by using the program standards in the Swine ID Plan, which include parameters for group animal movement records to be generated each time movement to a new premises or harvest facility occurs. A movement record would include the animal’s or group’s identification number, PIN of the sending and receiving premises, the date of movement, number of head moved and the reason for movement. Records will be maintained for three years after the swine leave the premises and will be available to animal health officials for inspection, which is compliant with 9CFR71.10, (Code of Federal Regulations) and Swine ID program standards.

Methods of identifying treated pigs individually include:

- A card that stays with the animal. This works best for adults housed individually in a pen or stall.
- Paint marks are easy to apply and can be used temporarily, but may rub off or rub onto untreated pen mates.
- Tattoos are permanent, but depending on the type, the tattoo may be hard to apply and difficult to read at a distance.
- Ear tags are the easiest to see but are more cumbersome to apply than some other methods.
- Ear notches can be recorded on a card to identify treated animals.

Identifying individual animals or groups of animals is essential for meaningful records. Medicated animals can also be identified and tracked by:

- Pen or room number
- Group (building or site)

When treated animals are identified by pen, room or group number, it is important that the entire group remains intact until the withdrawal time has elapsed. Any pig removed from the group should be individually identified and their withdrawal time recorded.

Medication Records

There are several reasons related to food safety for keeping records of all medications given to food-producing animals. The primary reason is to make sure withdrawal times have elapsed before marketing.

Keeping and maintaining records is also a basic expectation of regulatory officials. Medication records provide documentation that demonstrates a drug was used properly. In instances where a violative residue found at harvest has been traced to a farm, the producer will be expected to provide complete medication records to the investigator. All food-animal producers must keep medication and treatment records for 12 months from the last day of treatment.
Medication records can also be useful as a management tool. Reviewing records can provide insight to questions such as:

- Are more animals being treated this year than last?
- Has the response to treatment been effective?
- Which treatment for pneumonia gives the best response?

All these things can be important when formulating disease-control strategies.

*FDA Compliance Policy Guide (CPG) 7125.37 – Proper Drug Use and Residue Avoidance by Non-Veterinarians* outlines the practices and procedures the FDA would expect to see as part of the operation’s standard operating procedure for using animal-health products. The FDA expects producers to maintain medication records that will indicate (Table 3):

1. The animal(s) that were treated.
2. The date(s) of treatment, including last date of administration.
3. The drug(s) administered.
4. The route of administration.
5. The person who administered each drug.
6. The amount of each drug administered.
7. The withdrawal time prior to harvest.

<table>
<thead>
<tr>
<th>Date</th>
<th>ID</th>
<th>Product Name</th>
<th>Dose</th>
<th>Route</th>
<th>Given By</th>
<th>Withdrawal Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/28</td>
<td>210</td>
<td>Tylosin</td>
<td>3 ml</td>
<td>IM</td>
<td>Bill P.</td>
<td>14 days</td>
</tr>
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</table>

Recording additional information may be very helpful in tracking treatments and withdrawal times (the chart below contains the suggested information):

Suggested Additional Information for Tracking Treatments (Table 4.):

1. The approximate body weight of the animal treated to verify that the amount of drug given was appropriate.
2. The medical problem that prompted treating the animal, such as pneumonia, diarrhea, etc.
3. Calculated date the withdrawal will be completed.
   a. At the bottom of the table, record the name and contact information of the veterinarian for the ELDU.

<table>
<thead>
<tr>
<th>Date (MM/DD/YY)</th>
<th>Animal / Pen / Barn ID</th>
<th>Body Weight</th>
<th>Reason for Treatment</th>
<th>Number Medicated</th>
<th>Product Name</th>
<th>Amount of Drug Given (ml/water)</th>
<th>Route</th>
<th>Initials of Who Administered</th>
<th>Preslaughter Withdrawal (Days)</th>
<th>Date Withdrawal Completed (MM/DD/YY)</th>
<th>Date and Treatment Results</th>
<th>ELDU</th>
<th>Advising Veterinarian</th>
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</tbody>
</table>

1 IM=Intramuscular; SQ-Subcutaneous; IN-Intranasal; Water; Feed  
2 Sold; Recovered; Died  
3 Veterinarian Name and Contact information for Extra-Label Drug Use
**Withdrawal Times**

The withdrawal time is the period required for the medication to be metabolized, broken down or excreted so that the level remaining in the body of the animal at harvest is below the level established as safe for humans. This withdrawal period is established by the FDA based on the results of extensive testing. If the drug has a withdrawal time, it will be found on the label, package insert or the feed tag. In the case drugs are used in an extra-label manner, the veterinarian must assign an adequate withdrawal time so there are no violative residues at harvest.

Other countries may require withdrawal times different than the United States for some products. For example, Japan has different withdrawal times for various drugs and medications. If your packer exports to Japan, be sure to determine the appropriate withdrawal time beforehand for medications you plan to use. One source for export maximum residue level (MRL) information, or for more information about withdrawal times for export markets, is the National Pork Board website: www.pork.org. This website contains the most current information on international requirements. Another source might be your packer. Your packer should inform you of their alternative markets and the differing required withdrawal times.

As a reminder, nearly all injectable vaccines are labeled with a 21-day withdrawal time. If there is a possibility that a pig will soon be sold as food, it should not be vaccinated unless the withdrawal time can be met.

**Calculating Withdrawal Times**

Each withdrawal day is a full 24 hours starting with the last time the pig is treated or has had access to a medicated feed, water, topical or injectable products. If a pig is last treated at 9 a.m. on Friday with a drug having a 5-day withdrawal, the withdrawal would be completed at 9 a.m. on the following Wednesday.

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

**Other Sources of Drug Use Information**

In addition to the label, information about the use of FDA-approved products can be found in several places.

Most medications are packaged with a printed “insert”. The insert is considerably longer and more technical than the label. In addition to the withdrawal time, the insert will provide information about the indications for use, mode of action, adverse reactions, toxicity to humans and animals and a more complete dosage schedule.

The listing of FDA Approved Animal Drug Products, called the “Green Book,” is compiled and maintained by the FDA. Electronic copies of the Green Book are available on the FDA website at www.fda.gov or the database can be searched online at dil.vetmed.vt.edu/default.htm.

Changes in drug use approvals and withdrawal times do occur, and printed charts may contain outdated information. Always check the container label and websites for the most current drug use information. If there is any doubt about the proper withdrawal time, contact your veterinarian. Remember, the printed (published) withdrawal time is valid only when the drug is given in accordance with the label directions (species, route, dosage and condition).
Medication Information

Some products are not compatible when administered or mixed with others. This can affect the product’s efficacy, the withdrawal time prior to market and/or cause animal welfare concerns from product reactions and muscle scarring. You should never combine medications in the same syringe or in the drinking water. Veterinarians may legally mix some drugs under certain circumstances in the course of their practice. This is a form of extra-label drug use called “compounding” that is only legal when specific FDA regulations are followed. Remember, it is illegal for anyone, even a veterinarian, to mix or use feed medications other than according to labeled directions.

Mixing together injectable or water medications, including antibiotics, by producers is illegal. As an example, it is illegal to mix an antibiotic and iron together on the farm for use while processing piglets.

Certain FDA-approved commercially available feed administered medications may be legally mixed on-farm. If a combination, including feeding levels, is not approved by the FDA, then it is illegal. Information about these legal combinations is available from your veterinarian or your nutritional advisor.

SUMMARY:

Develop a Swine ID Plan

- Producers should develop an operation specific plan to identify treated animals. The plan should include the industry program standards:
  - Premises Identification
  - Animal Identification
  - Animal Tracing

Medication Records

- Medication records are essential as they help ensure food safety, are an expectation of regulatory officials and act as a useful management tool.
- The FDA expects producers to maintain medication records that will indicate:
  - The animal(s) that were treated.
  - The date(s) of treatment, including last date of administration.
  - The drug(s) administered.
  - The route of administration.
  - The person who administered each drug.
  - The amount of each drug administered.
  - The withdrawal time prior to harvest.

Withdrawal Times

- The withdrawal time is the period required for the medication to be metabolized, broken-down or excreted so that the level remaining in the body of the animal is below the level established as for humans.
- With withdrawal times, consider:
  - Calculating withdrawal time.
  - Other sources of drug information.
  - Medication information such as compatibility.
Practice Good
Environmental Stewardship.
The goal of environmental stewardship is to protect our natural resources (water, air and land) in all of our production practices.

Environmental stewardship requires constant attention, commitment and follow-through regarding good environmental management practices. These management practices are fundamental to protection of our natural resources and to being good stewards of the environment and good neighbors in our communities. Federal, state or local regulations may prescribe additional requirements in addition to or as amplification on these basic management practices, and you should always make certain you know and follow those regulatory requirements which apply to your operations.

Environmental Management Practices

General Site Conditions

- The production site, including manure storage and mortality management structures, should be set back an appropriate distance from environmental receptors such as surface water streams, rivers and lakes; drainage well intakes; sinkholes; and drinking water wells. The site should be located to minimize impacts on neighbors and public use areas. State/local regulations may require minimum setback distances that an operation must meet.
- The production site, including manure storage and mortality management structures, should be located outside of a flood plain (25 year) or otherwise equipped with flood prevention controls. State/local regulations may prescribe more stringent flood plain restrictions (50 or 100 year) that an operation must meet.
- The production site, including manure storage and mortality management structures, should be maintained to prevent "clean" run-on water from entering the production site and mixing with manure. Surface flow or storm water that has come into contact with manure should be contained and land-applied according to a nutrient management plan.
- The production site should be maintained to minimize erosion or ponding of water and vegetative areas mowed and trimmed.
- Spilled manure and feed should be cleaned up in a timely manner.
- Insect and rodent populations should be controlled inside and outside the buildings and at mortality storage/compost sites.

Buildings

- Drinking water and cooling systems should be routinely checked and maintained free of leaks.
- Pens, service aisles, travel lanes and feed alleys should be free of excessive manure or spilled feed.
• Building ventilation systems should be maintained in good working order and free of excessive dust buildup.
• Under-building manure pits should prevent seepage into or out of the pit and have overflow protection.
• Trash, animal health consumables and needles should not intentionally be disposed of in under-building manure pits.
• Manure storage pit access points should be covered to prevent human/animal entry and posted with warning signs.
• Manure transfer line vents and clean-outs should be closed and secured when not in use.
• Shallow flush pits should be drained and recharged frequently.
• Scrapers and belts should be properly maintained and cycled frequently.

**Manure Management**

• The operation should have a current written nutrient management plan (NMP) that contains all necessary information to describe management of manure and mortality compost nutrients. The plan should include field maps, soil maps, description of conservation/setback practices, description of crop rotation and yield expectations, soil and manure test results, field-by-field nutrient budgets, description of the timing and method of application, description of calibration and maintenance of the land application equipment and records of manure application/transfer.
• Manure storage systems should be sized to contain the anticipated manure generation from the maximum number of animals that could be housed at the operation for the time periods between manure removal set forth in the operation’s NMP.
• Access to manure storage areas and liquid transfer equipment should be controlled and secured to prevent unauthorized access and/or vandalism.
• Manure loading/extraction areas should be accessible by authorized personnel in all weather conditions.
• Dikes/embankments and areas immediately adjacent to earthen manure storage basins/ lagoons should be free of erosion, woody vegetation, burrowing animal holes or nests or other damage. Grass vegetation should be mowed to facilitate bank inspection and discourage burrowing animal nesting.
• Inlets and outlets to manure storage structures should be designed and placed to prevent blockage and secured to prevent unauthorized access and/or vandalism.
• Above ground fabricated manure storage tanks should be filled from the top unless equipped with backflow prevention devices and redundant closure valves or secondary containment capable of holding the entire volume of the structure.
• Liquid manure storage ponds/lagoons/above ground storage should have a liquid level gauge.
• Pressurized manure transfer systems should be equipped with manual and automatic shut-off devices.
• Land application equipment should be properly maintained and calibrated and have manual and automatic shut-off devices.

**Mortality**

• The operation should have a written mortality management plan that addresses, but is not limited to, collection, storage and disposal scheduling, description of on-site storage, description and standard operating procedure for final disposition, contingency plan for catastrophic mass mortality and records of mortality disposal.
GPP #7  
Practice Good  
Environmental Stewardship.

• Access to mortality storage/collection areas should be controlled to limit unauthorized human or animal access.

• Mortality storage/collection areas should be screened by visual barriers between the areas of public roads or the property line and be accessible in all weather conditions.

**Emergency Action Plan (EAP)**

• The operation should have an up-to-date written emergency action plan (EAP) that will provide guidance to persons not familiar with the operation or mentally distraught due to the emergency. The plan should include driving directions to the farm, a facility map, descriptions of all operations, plans for dealing with personal injuries, contingency plans addressing critical system failures (power, water, ventilation, building damage/collapse), contingency plans for alternative mortality disposal under normal and catastrophic loss conditions and steps to mitigate uncontrolled manure releases including releases from any off-site transfer of manure. It is recommended that copies of structural design drawings and specifications, including re-designs, additions or reductions, for the facility be maintained on-site.

• Employees should be trained in the EAP.

• Emergency contact phone numbers should be posted near telephones, the entrance gate and/or outside of the buildings.

• Visit http://eap.pork.org or call the Pork Checkoff Service Center at (800) 456-7675 for your copy of the EAP template.

**Inspections**

• A thorough inspection of the production site, including manure storage and mortality management structures, should be conducted at a frequency that allows timely corrective action of problems that may be observed, but no less frequently than once a month. Production buildings should be inspected at least weekly. Situations may arise when a more frequent inspection schedule may need to be temporarily implemented. For example, lagoons should always be inspected immediately following a significant 24-hour precipitation event or during a period of extended precipitation. It is recommended that inspection checklists be developed for the facility and that it be used to document each facility inspection.

**SUMMARY:**

To be good environmental stewards, consider implementing a few basics environmental practices:

<table>
<thead>
<tr>
<th>General Site Conditions</th>
<th>Mortality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buildings</td>
<td>Emergency Action Plan</td>
</tr>
<tr>
<td>Manure Management</td>
<td>Inspections</td>
</tr>
</tbody>
</table>

**NOTES:**

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Maintain Proper Workplace Safety.
As one of their ethical principles, U.S. pork producers affirm their obligation to provide a work environment that promotes the health and safety of employees. A comprehensive guide to design, develop and implement a farm safety program, the “Employee Safety Toolkit” is available on pork.org.

Safety is Everyone’s Responsibility

For a safety program to work, it has to be everyone’s responsibility - owners, managers and employees. If any person does not take personal responsibility for working in and maintaining a safe work area, that person puts himself/herself and others at risk.

The safety responsibilities of all people working in the barns include:

- Know which jobs have high accident and injury risk.
- Understand and comply with workplace health and safety practices.
- Know what to do to reduce injury risk.
- Use safe animal handling practices.
- Properly use safety equipment, safety devices and personal protective equipment (PPE).
- Report unsafe acts and workplace hazards, accidents, near-accidents, injuries and illnesses immediately.

Owners or operating managers are responsible for all aspects of safety including:

- Assigning responsibility.
- Conducting safety assessments.
- Defining hazard risk for all jobs.
- Sourcing and allocating resources to ensure safety in all operational activities.
- Measuring progress and evaluating performance of safety and environmental management.
- Reviewing all program components and making adjustments to correct deficiencies.

Production managers will:

- Ensure appropriate resources are utilized to eliminate/reduce hazards.
- Ensure that production pressures do not alter or suspend proper safety procedures at any time.
- Encourage and support employees to reinforce the importance of their safe actions.
- Observe the work area to detect and correct potential problem areas.
- Initiate corrective action immediately.
Stop work being performed unsafely, and correct the conditions before continuing the work.

Ensure all employees are trained in proper job procedures, including safety precautions.

Actively and promptly investigate all reported incidents to determine the root cause of the incident.

Ensure that each employee follows the instructions and guidelines.

Controlling Hazards

Controlling exposures to hazards is the fundamental method of protecting workers. The basic strategies for controlling workplace hazards, in order of preference per OSHA guidelines, include:

1. Eliminating the hazard from the method, material, facility or machine.
2. Abating the hazard by limiting exposure or controlling it at its source.
3. Training personnel to be aware of the hazard and to follow safe work procedures to avoid it.
4. Prescribing personal protective equipment (PPE) for protecting employees against the hazard.

These four controls are crucial to a safe, healthful workplace for you and your employees because they make it more difficult for accidents to occur and for work-related health problems to develop. Job safety analyses along with descriptions and control methods for the most common hazards found on farms are included in the Employee Safety Toolkit on pork.org.

Emergency Action Plan (EAP)

An emergency action plan (EAP) will prepare producers to take immediate action when someone is hurt, a fire starts or tornados are imminent. In an emergency, time cannot be wasted; it could be the difference between life or death. Each farm should have personnel trained in first aid who can provide immediate care. Employers and employees should be encouraged to take classes in first aid and CPR-AED such as those taught by the American Red Cross and other groups. All employees must be familiar with emergency procedures for the operation.

An EAP covers who to notify in case of emergency, what you need to say to them and what actions to take.

Visit http://eap.pork.org or call the Pork Checkoff Service Center at (800) 456-7675 for your copy of the EAP template.

If someone is injured in an accident and needs immediate help:

- Make sure the injured individual is cared for immediately by a person trained in first aid.
- Stabilize the accident scene if the hazard still exists without putting yourself in danger. By doing this, you can prevent further danger to the injured person or others.
- Notify the appropriate contact listed on the Farm Emergency Information Sheet.
- Notify the supervisor that an accident has occurred. He or she shall judge the extent of accident scene to be controlled.
- Follow the company procedures for accident investigation.
If a fire starts:

- Rescue or remove everyone in immediate danger.
- Sound the fire alarm.
- If the fire is small, confine fire and smoke by closing all windows and doors in the area. Extinguish small fires with a portable fire extinguisher. Never use water on an electrical fire.
- If the fire is too large, call the fire department, then evacuate the building.
- Once outside the building, go immediately to the designated meeting place. Do not go back in!

If a tornado warning is sounded:

- Go to the designated tornado shelter, which will be an interior area of the building that is structurally sound without outside windows or skylights. Examples are showers and utility rooms.
- Stay away from windows, but stay inside the building. A diagram with shelter assignments should be posted so people will know where they should go to seek shelter.

There is a potential when agitating and removing manure from pits that a hazardous gas called hydrogen sulfide could be released into the building above the pit. Hydrogen sulfide is very dangerous. Do not enter buildings while manure is being agitated and removed.

If people or animals are unconscious when manure is being agitated or removed, you must not enter the room. You can lose consciousness quickly! If people or animals are down, contact emergency medical services as outlined in the EAP, and start emergency ventilation.

Every county in the U.S. has an emergency coordinator who is responsible for responding to all emergencies at the county level. Sharing your emergency plan with the county coordinator and including them in your plan will be helpful when responding to emergencies in the future.

Pork Checkoff provides an Emergency Action Plan tool that generates a farm-specific EAP from information entered by the producer. The Emergency Action Plan tool is available at pork.org.

Fire Prevention and Safety

Good housekeeping helps prevent fires. Remove weeds and brush from all sides of the building. Keep work areas clean and clutter free. Make sure all stairs, aisles and exits are free of obstructions. Keep flammable liquids in labeled fireproof containers.

Report any observed fire hazards to your supervisor immediately. Electrical motors and appliances are a significant source of fire hazards. Check each regularly for exposed wiring, broken insulation, improper grounding and improper installation.

If you smoke, do so only in designated areas. Never smoke in areas where flammable and combustible materials are stored. Make sure flammable substances are kept in fireproof containers, properly labeled and stored in safety cabinets approved for flammable materials.
**Hearing Health and Safety**
Working on a swine farm will be noisy at times. When people are exposed to high noise levels for a number of years without taking precautions, they can suffer hearing loss. This type of hearing loss is irreversible and cannot be restored.

Noise levels in swine barns can reach damaging levels. Consider wearing hearing protection while conducting these tasks:
- Feeding animals in breeding, gestation and farrowing barns.
- Power washing.
- Processing piglets.
- Treating and vaccinating animals.
- Bleeding animals.
- Sorting animals.
- Moving animals.
- Loading animals.
- Pregnancy checking in breeding barns.
- Artificially inseminating sows and gilts in breeding barns.
- Working around aeration fans for grain bins.
- Feed processing.

**Lockout/Tagout Program**
Servicing equipment is a common task on the farm. Your farm should have a Lockout/Tagout program in place that specifies how equipment is to be locked and tagged to prevent accidental startup while the equipment is being repaired. Many injuries and deaths have occurred when an individual unknowingly started equipment while another employee was working on it.

Know how to identify your equipment locks and lockout tags. Do not attempt to turn on or run any equipment that has a lock and/or tag on the controls.

**Confined Spaces**
Areas on a pig farm designated as a confined space are more dangerous than others. Confined spaces may not have enough oxygen to breathe or contain flammable or toxic materials. Floors that slope inward, such as in grain or feed bins, can cause a person to be engulfed. Confined spaces should be clearly identified on your farm. Entering these areas is prohibited unless you have received the proper training. Always obey warning signs, “CONFINED SPACE, No Entry.”

**Personal Protective Equipment (PPE)**
Personal protective equipment (PPE) can help you do your job safely. PPE is designed to protect you from loud noises, dust, chemicals and other substances that can harm your health. When using PPE, you should wear the equipment for the entire time you are working on the task requiring it. If you remove PPE while performing a task, you will not be adequately protected. Know how to correctly wear the PPE and make sure it fits properly to prevent injuries. Keep your PPE clean and in good shape, and check it for damage each time you wear it.

Store your PPE in the proper storage location when you are done using it. Never store PPE in areas with chemicals that are being used or stored. Always wear the correct protective clothing and equipment for the job.
Respiratory Health and Safety
Low levels of dust are commonly found in swine confinement buildings. Short-term inhalation of very small amounts of dust alone is not necessarily harmful. Long-term, continuous exposure to dust may result in respiratory problems. Dust masks help block the entry of dust into the lungs and may reduce your risk of respiratory problems.

Hazard Communication Program ("Right to Know Law")
Most hog facilities today use drugs or chemicals to improve health and cleanliness for the animals under your care. When used improperly, these chemicals can be hazardous to you or your workers’ health. Every hazardous chemical, animal drug and vaccine used on the farm should have a material safety data sheet (MSDS) provided by the manufacturer. The MSDS contains information about safe chemical use and what to do if someone is exposed to hazardous chemicals.

You will need to demonstrate to your employer that you can identify certain parts of the MSDS and hazard labels including information on health hazards, first aid procedures and fire hazards. When using chemicals, handle them carefully, follow the prescribed procedures and use the proper containers.

Reproductive hormones may be used on sow farms. These are hormones that act on the reproductive system, and some may have harmful effects to humans exposed to them. Although contact with these chemicals – from an accidental needle stick or absorption through the skin – can be dangerous to any employee, they are of greater concern for female workers. Female workers should not handle or administer reproductive hormones because of the possibility of accidental exposure.

Machine Guarding
Several types of equipment are used on a swine farm. This equipment has moving parts, nip points, chains, sprockets and gears that can cause serious injury if contacted while operating. All moving parts should have guards to protect workers from injury. Refer to OSHA for specific guidelines on machine guarding.

Electrical Safety
Accidental contact with electrical currents can cause injury, fire, extensive damage and even death. Do not perform any electrical work unless you have been trained and authorized to do electrical work.

Electrical accidents can be prevented by taking the appropriate precautions including:

- Ensure that electrical outlets and plugs are in good condition.
- Make sure electrical power cord insulation is not cracked, kinked, broken or the cord ends have loose connections or ground plugs removed.
- Wear insulated footwear when working with electrical tools or appliances.
- Do not overload an outlet.
- Keep all electrical cords away from heat sources.
- Ensure that lockout procedures are used each time that an element of the electrical system is open to physical contact.
- Immediately inform your supervisor of any faulty equipment so it can be repaired or replaced.
Slips, Trips and Falls
Floors can become slippery in swine farms, especially in the pens and alleys. Never run through the barn or jump over gates. When crossing pens, maintain two points of contact. Keep one foot on the floor and one hand on the pen divider when crossing.

Serious injury due to trips or falls can result if items used in day-to-day operations are not properly put away, covered or stored. Put tools and equipment back in their assigned places. Keep all aisles clear of any items that could potentially cause someone to trip over them.

Safe Lifting
In a hog facility, you are required to lift animals, carry feed, remove dead animals and move feeders and gates for cleaning. You risk back injury if you do not follow correct lifting procedures.

When lifting something, lift with your legs, not your back, and try to keep your back as straight as possible to prevent injury. Bend your knees, not your waist, to pick up a heavy object. Finally, avoid lifting objects above chest high. Lifting pigs or heavy objects cannot always be done alone and may require help or mechanical devices.

Personal Hygiene
Bacteria, fungi, parasites and viruses that may be present in animals or their manure can cause disease in people. Transmission to people may be prevented with simple procedures:

- Wash hands before and after working in the barn and with animals. Wash hands before you eat, drink or smoke; after using the toilet; after cleaning animal housing or animal care areas; and whenever hands are visibly soiled.
- Wear impermeable gloves when caring for sick animals or when assisting a veterinarian with any type of procedure.
- Wear facial protection whenever exposure to splashes or sprays is likely to occur such as during power washing.
- When bites, scratches or lacerations occur while working with animals, wash the injured area with soap and water immediately and consult the designated First Aid person.
- Establish designated areas for eating, drinking and similar activities. These activities should never be done in animal care areas or in the laboratory area.

Needle Sticks and Cuts
Processing young piglets can lead to injury if you are not careful. Punctures, cuts and needle stick injuries are among the most common injuries and occur when giving injections or during piglet processing. Stay focused and attentive. Fatigue increases your chances of injury so take advantage of scheduled breaks so you do not become too tired and in order to stay focused.

Dispose of all sharps in designated puncture-proof sharps containers.
GPP #8
Maintain Proper Workplace Safety.

Needle stick injuries are not to be taken lightly. Certain antibiotics and other medications designed for animals can result in severe medical reactions, or even death. If a co-worker is accidentally injected with a medication and has a seizure, stops breathing or has any physical reaction, call 911 immediately to summon professional emergency medical help.

In case of severe cuts, control the bleeding first and summon the person trained in First Aid at your farm. If the injury is minor, wash the wound with soap and water, cover with a sterile bandage, report the injury and seek medical attention if necessary.

All accidental injections and cuts should be reported to your supervisor immediately.
Safe Animal Handling

Many accidents and injuries on a pig farm occur when handling animals. Many tasks require people to be in close contact with the pigs.

To avoid accidents or injuries while working with animals, one must understand typical animal behavior, animal responses to different environments, handling pigs of various types and sizes and how to use handling equipment. These topics are covered in the “Safe Animal Handling” section of GPP#9, “Provide Proper Swine Care to Improve Swine Well-Being.”

**SUMMARY:**

**Safety Is Everyone’s Responsibility**

This includes the owners, managers and the employees. If any person does not take personal responsibility for working in and maintaining a safe work area, that person puts himself/herself and others at risk.

**Control Hazards**

Controlling exposures to hazards is the fundamental method of protecting workers. The basic strategies for controlling workplace hazards, in order of preference, include:

1. Eliminating the hazard from the method, material, facility or machine.
2. Abating the hazard by limiting exposure or controlling it at its source.
3. Training personnel to be aware of the hazard and to follow safe work procedures to avoid it.
4. Prescribing personal protective equipment (PPE) for protecting employees against the hazard.

**Develop an Emergency Action Plan**

Develop and implement an emergency action plan. This will prepares people to take immediate actions when someone is hurt, a fire starts or tornados are imminent. All employees must be familiar with emergency procedures for the operation.

**Develop Safety Procedures/Plans**

Prevention is an importance part of keeping individuals safe. Therefore, develop safety procedures for:

- Fire Prevention and Safety
- Hearing Health and Safety
- Lockout/Tagout Program
- Personal Protective Equipment
- Respiratory Health and Safety
- Hazard Communication Plan
- Machine Guarding

- Electrical Safety
- Slips, Trips and Falls
- Safe Lifting
- Personal Hygiene
- Needle Sticks and Cuts
- Safe Animal Handling
GPP #8
Maintain Proper Workplace Safety.

NOTES:
Provide Proper Swine Care to Improve Swine Well-Being.
Every caretaker has an ethical responsibility to protect and promote the well-being of the pigs in his or her care by:

- Providing feed, water and an environment that promotes the well-being of his/her animals.
- Providing proper care, handling and transportation for pigs at each stage of life.
- Protecting pig health and providing appropriate treatment, including veterinary care when needed.
- Using approved practices to euthanize, in a timely manner, those sick or injured pigs that fail to respond to care and treatment.

Many factors within a pig’s environment influence its overall well-being. Good Production Practice (GPP) #9 will explain these factors and provide strategies on how to implement each one.

**RECORDKEEPING**

**Veterinarian/Client/Patient Relationship (VCPR)**
A VCPR requires the caretaker and veterinarian work together to ensure the health and well-being of the pigs on that operation. A VCPR is described in further detail in GPP #1. A VCPR can be demonstrated to your advisor by providing dated veterinary feed directives, a dated site visit report from the veterinarian, dated medical prescription labels or a letter from your veterinarian confirming the relationship. An example of this letter can be found in the Appendix. Verification must be dated within the past 12 months.

**Medication and Treatment Records**
Medication and treatment records provide the health history of each individual pig and help to ensure food safety. By tracking the medication and treatment of animals within a herd, you will be able to identify trends and work toward improving herd health. For a complete explanation of medication and treatment records, refer to GPP #6, “Establish Effective Swine Identification, Medication Records and Withdrawal Times.” An example of a medication and treatment record is provided in the Appendix of this book. At a minimum, the record must contain all of the following information:

- The animal(s) that were treated – animals can be identified as a group when multiple animals are treated.
- The date(s) of treatment, including last date of administration.
- The drug(s) administered.
- The route of administration.
- The name or initials of the person who administered each drug.
- The amount of each drug administered.
- The withdrawal time prior to harvest.

You must also document when animals are marketed as antibiotic-free or when a barn turn is completed and no treatments were given. This can be done by documenting when the animals entered the barn and when the animals were marketed. A sample of this documentation can also be found in the Appendix.
**Documented Caretaker Training Program**

One of the most important factors to good animal well-being is the husbandry skills of the animal’s caretakers. The knowledge, training and attitude of the caretaker are the foundation upon which animal well-being is built. Research has shown that negative interactions between caretakers and their animals can limit the productivity and well-being of these animals, making training essential. Different production systems have different training program needs. Producers who own and work in the operation every day have different training needs than employees who may not be as familiar with pig husbandry. Training should be customized to match the needs of the operation and a standard operating procedure, including frequency, for training the caretakers should be created and implemented. Documentation of initial training and review should include the trainer name, trainee name, date of the training and the topic covered in the training.

Caretakers should receive training specific to their daily duties and receive retraining as necessary. PQA Plus certification can serve as a minimum training for all animal handlers, but should be supplemented with training specific to their daily duties. Examples of such supplemental training include on-the-job training, on-line training modules or attending seminars to provide training specific to their daily duties. If on-the-job training is the method used for training caretakers, this training must be documented with a paragraph describing the training including the trainer name, trainee name and date of training.

There are at least three areas common to all production system training programs that address swine well-being. They are:

1. **Euthanasia** – The On-Farm Euthanasia of Swine - Recommendations for the Producer (2009) brochure outlines the methods and practical considerations for euthanasia of pigs and can serve as a training resource. Employees should understand and use the euthanasia plan developed for your operation.

2. **Handling** – Additional training information on how to handle pigs, other than the information contained in GPP #9, is available in the Transport Quality Assurance® (TQA®) Program and the Swine Care Handbook.

3. **Husbandry** – The Swine Care Handbook contains information about husbandry skills. Additional information on specific husbandry skills may be available from university Extension services or area community colleges.

In addition to these resources, the Pork Checkoff offers the Pork Production Resources training materials on CD and DVD including a Production Series that addresses euthanasia, handling and swine husbandry. The Pork Checkoff’s Employee Care Toolkit is a good resource to help producers establish training protocols and includes sample standard operating procedures.

**Documented Daily Observation**

Daily observation and prompt delivery of care are critical in addressing individual animal health and detecting facility or management issues that need to be addressed. In addition, daily pig observation helps to assess the effectiveness of health and nutrition programs, the suitability of facilities and the quality of stockmanship. When performing daily observations, caretakers should evaluate the animals, environment and equipment. Animal observations should include eating, drinking and sleeping patterns and signs of sickness or injury. Caretakers should evaluate the environment to make sure temperatures and air quality are correct for the phase of production. Fans, flooring, penning, feeders, waterers and other equipment should all be evaluated to make sure they are working properly.
The best way to fully assess the pigs’ environment and health is to walk the pens daily. Recording such information as water intake or high/low temperatures within the barn can be a useful management tool. For example, a decrease in water intake can be an early indicator of illness in the herd. Large differences in high/low temperatures can be an indicator that the ventilation system is not functioning properly. Recording animal, facility or management concerns as you walk through the facilities also will promote corrective actions. Talk with your PQA Plus advisor about the advantages of tracking daily observations of the animals for your operation.

**Recording Daily Observations**
Recording daily observations can be as simple as posting a calendar, paper or poster inside the door of the facility or room where the caretaker can initial and date the document daily.

**Feed and Water Availability**
Automated feed systems must be checked daily to prevent the occurrence of out-of-feed events. Bulk bins should be checked to make sure they have adequate feed supply and there is no bridging of feed. Feed lines and feeders should be checked daily to assure they are in good working order and that feed delivery is not blocked. Out-of-feed events can negatively impact the pigs’ well-being by increasing aggression, increasing the risk of developing stomach ulcers or hemorrhagic bowel syndrome and decreasing average daily gain and average daily feed intake.

Water is an important nutrient for normal body function, growth and reproduction. The quality and quantity of water a pig receives is important and should be monitored regularly. Poor water quality can reduce consumption rates and negatively impact the health of the pig. Water must be available at least twice daily and in a quantity sufficient to fully satisfy the pigs. Waterers should be designed so animals can drink freely and have flow rates that easily meet the pigs’ water intake requirements. Specific information about appropriate water requirements per day and suggested flow rates can be found in Table 1.

<table>
<thead>
<tr>
<th>Production Phase</th>
<th>Water Requirement (gallons/pig/day)</th>
<th>Flow Rate (sec/pint)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nursery</td>
<td>0.7</td>
<td>29</td>
</tr>
<tr>
<td>Growing</td>
<td>2 to 3</td>
<td>21</td>
</tr>
<tr>
<td>Finishing</td>
<td>3 to 5</td>
<td>17</td>
</tr>
<tr>
<td>Gestating Sows</td>
<td>3 to 6</td>
<td>15</td>
</tr>
<tr>
<td>Lactating Sows</td>
<td>2.5 to 7</td>
<td>15</td>
</tr>
<tr>
<td>Boars</td>
<td>5</td>
<td>15</td>
</tr>
</tbody>
</table>


Flow rate can be difficult to measure in wet/dry feeders, cup waterers or troughs. For wet/dry feeders and cup waterers, it is necessary to ensure the internal diameter of the supply line is large enough to allow sufficient water flow to accommodate the desired flow rate for all waterers if they were all to be used at the same time. It also is important to follow manufacturer recommendations for the water pressure necessary for each specific waterer design. Water troughs should be evaluated to make sure no obstacles or leaks are present in the troughs that would prevent any pig from having access to water.
Seriously Ill, Non-Ambulatory or Dead Animals

When the trained caretaker's ability to evaluate an animal's condition is combined with daily observation, a caretaker will be able to more easily detect ill, disadvantaged or dead animals. Pigs that are seriously ill, disadvantaged or dead, can provide valuable information about the other animals' conditions. An animal should be considered non-ambulatory if it refuses to stand up or if it can stand with support but refuses to bear weight on two of its legs. Animals that have no prospect for recovery after two days of intensive care should be humanely euthanized.

Your operation should have a treatment or notification plan if animals with health conditions of concern are found. If your PQA Plus advisor notices animals needing treatment during a walk-through and they had not already been identified, be sure to review your training and observation programs with your advisor.

Treatment Pen

Caretakers should have a plan for how an animal could be isolated from the rest of the herd for treatment or recovery when needed. Once a pig has been identified as ill or injured, it may need to be moved to a treatment area if its health and well-being are compromised by its fellow pen mates or if treatment of the animal is affected by remaining with the group.

Properly managed treatment pens can aid recovery and provide easier follow-up treatment. The treatment pen might be a temporary or permanent separate pen or enclosure or it might be an individual stall. An important consideration is providing adequate treatment and supportive care for the animal. This includes easy access to feed and water.

Caretakers must have a method for tracking animals that enter a treatment pen to know what treatments have been administered and how long the animal has been receiving treatment. This information will help caretakers evaluate the effectiveness of the treatment and, if necessary, make good decisions about timely euthanasia. Remember, when a pig in a treatment pen has shown no improvement or has no prospect for improvement after two days of intensive care, the pig should be euthanized.

Emergency Support

Written Action Plan

In case of an emergency, quick communication is important. The facility must have a written emergency action plan. This might be as simple as the names and telephone numbers of the owner, veterinarian, electrical power company and fire and police departments. The plan should be readily available for all employees. Refer to GPP #8 for information on developing an emergency action plan for your farm.

Emergency Detection System

Suitable alarm systems should warn of power failures or temperature changes as needed, but judgment is necessary to assess the adequacy of the emergency detection system taking into account the site of the facility. For example, if a barn is sited next to your house and shares the same power line, visual detection of a power outage or other emergency is possible. If a barn is not near
your house, some method of alarm – notification to a person or an automatic intervention – must be available as appropriate if the mechanical system fails. Regardless of the detection system, there should be some redundancy in the system so that emergency conditions are identified even if the detection system fails.

**Emergency Backup System**

You must have manual procedures in place or facilities must be equipped to provide some automated intervention to prevent the death of animals in the event there is a mechanical ventilation failure. For example, a back-up generator, automatic or manual drop curtains, or some provision for natural ventilation may be appropriate depending upon the building’s ventilation type. Testing this emergency backup system allows you to identify problems and perform maintenance updates to the system. Keeping a record of an established schedule for testing and maintenance demonstrates your emergency backup system is operational.

**VENTILATION**

Both air temperature control and air quality can impact the well-being of the pigs on the operation. These two factors can be controlled through proper ventilation management. Housing systems must provide conditions that are conducive to good health, growth and performance at all stages of the pig’s life.

**Temperature Control**

Provisions for heating and/or cooling should be present and in working order during extremes in the weather. The facility should provide for moderating temperature to prevent the pigs from displaying extreme thermoregulatory behaviors. Pigs perform thermoregulatory behaviors in an effort to regulate their body temperature. These behaviors are the best indicator of the pigs’ perception of the temperature in their environment as seen in Figure 1. It is important to assess these behaviors without disturbing the pigs. If air temperature is too cold, pigs will huddle together, shiver and excessively 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 have increased respiration rates. Respiration rates are assessed by counting breaths per minute. Normal ranges for healthy pigs can be found in Table 2.

**Figure 1. Thermoregulatory Laying Postures of Swine**

The images in Figure 1 portray the normal thermoregulatory laying postures of pigs in an environment with three different air temperatures. Take note of the pigs in relation to each other, as well as the amount of free space within the pen. Image A depicts a pen of ten pigs in an environment with cold air temperature. These pigs huddle closely together in a dense pile in one area of the pen. Image B depicts a pen of ten pigs in an environment with ideal air temperature. These pigs have body contact with each other but do not pile excessively. Image C depicts a pen of ten pigs in an environment with hot air temperature. These pigs spread out throughout the pen and avoid physical contact with other pigs in the pen.

*Figure 1 is taken from Shao et al., 1997, in volume 40 of the Transactions of the American Society of Agricultural Engineers.*
Table 2. Normal Respiration Rates for Swine

<table>
<thead>
<tr>
<th>Production Phase</th>
<th>Respiratory Rate (breaths/minute)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-nursery</td>
<td>50-60</td>
</tr>
<tr>
<td>Nursery</td>
<td>25-40</td>
</tr>
<tr>
<td>Growing</td>
<td>30-40</td>
</tr>
<tr>
<td>Finishing</td>
<td>25-35</td>
</tr>
<tr>
<td>Gestating sows</td>
<td>13-18</td>
</tr>
<tr>
<td>Lactating sows</td>
<td>15-22*</td>
</tr>
<tr>
<td>Boars</td>
<td>13-18</td>
</tr>
</tbody>
</table>

Table adapted from Diseases of Swine, 2006.
*Respiration rates will increase beginning 24 hours prior to farrowing and should return to normal by 24 hours post-farrowing.

Table 3 gives the critical limits and preferred temperature ranges for pigs in various stages of production. Upper and lower critical temperatures define the thermal comfort zone or the range of temperatures that the pig does not have to use heat-conserving or heat-dissipating mechanisms (such as shivering, huddling or panting). Keeping pigs above or below their critical temperature cannot only negatively influence thermal comfort, but also feed intake, growth, feed efficiency and health. The thermal perception of the caretaker may be very different than that of the pig.

Remember that air temperature measurements should be recorded at pig height (approximately 1 foot above the ground). Temperatures should be taken in the building center at one-third intervals down the length of the barn. Remember to avoid taking temperatures near inlets and direct heat sources.

Regardless of whether pigs are kept indoors or outdoors, it may be necessary to provide supplemental heating or cooling for pigs when temperatures are outside the pigs’ critical temperatures. Examples of supplemental heating include using heat lamps or brooders for zone heating, gas or electric heaters or bedding. Examples of supplemental cooling can include misters, evaporative cooling cells, fans, shelters, shade trees or wallows. Work with your advisor to determine which supplemental heating or cooling method is best for your housing design.

Table 3. Thermal Limits for Swine

<table>
<thead>
<tr>
<th>Production Phase</th>
<th>Lower Critical Limit¹</th>
<th>Upper Critical Limit²</th>
<th>Preferred Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lactating Sow and Litter</td>
<td>50°F for sow</td>
<td>90°F for sow</td>
<td>60-80°F for sows; 90-95°F for piglets</td>
</tr>
<tr>
<td>Prenursery, 10-30 lbs</td>
<td>60°F</td>
<td>95°F</td>
<td>80-90°F</td>
</tr>
<tr>
<td>Nursery, 30-75 lbs</td>
<td>40°F</td>
<td>95°F</td>
<td>65-80°F</td>
</tr>
<tr>
<td>Growing, 75-150 lbs</td>
<td>25°F</td>
<td>95°F</td>
<td>60-75°F</td>
</tr>
<tr>
<td>Finishing, 150 lbs-Market</td>
<td>5°F</td>
<td>95°F</td>
<td>50-75°F</td>
</tr>
<tr>
<td>Gestating Sows</td>
<td>5°F</td>
<td>90°F</td>
<td>60-75°F</td>
</tr>
<tr>
<td>Boars</td>
<td>5°F</td>
<td>90°F</td>
<td>60-75°F</td>
</tr>
</tbody>
</table>

Table adapted from NRC (1981): Chapter 2; DeShazer and Overhults (1982): Chapters 1 and 2; Hahn (1985): Chapters 1 and 2
1. Bedding, supplemental heat or other environmental modification is recommended when air temperatures approach the lower critical limit.
2. Except for brief periods above these air temperatures, some form of cooling should be provided when temperatures approach upper critical limits.
Air Quality
Air quality can be controlled with a ventilation system that is in working order and that can operate without interruption. This is true whether the ventilation system uses the natural flow of air or mechanical assistance. There are several contaminatees, such as dust and various gases, that contribute to the quality of the air within the pigs' environment. Some air contaminatees, at high concentrations, can irritate the respiratory tract of the pigs and may leave them susceptible to disease while others can be lethal when concentrations are too high. Watery and mattery eyes, bloodshot eyes and breathing difficulty are indicators that pigs may be exposed to poor-quality air.

Ammonia is a common air contaminate that can directly impact the well-being of the pig through irritation of the respiratory tract. Ammonia concentrations in the air can be measured by using gas diffusion tubes for time-weighted average (TWA) measurements taken throughout the facility. These TWA measurements should not exceed 25 ppm. Remember that all air samples should be taken at pig height (approximately 1 foot above ground). Samples should be taken in the building center at one-third intervals down the length of the barn. Remember to avoid taking samples near inlets and direct heat sources.

FACILITIES
The state of repair of the facilities can directly impact the well-being of the pigs. Facilities are defined as barn structural components - pens, feeders, waterers, floors, chutes and alleyways.

Pens, Flooring and Alleyway Maintenance
The condition of the pens, floors and alleyways can affect other indicators of your pigs' well-being. Pens, floors and alleyways should be appropriate for the phase of production, be in a good state of repair and not causing injury to the animal. For example, sharp protruding objects could affect the number and type of skin lesions found on your pigs. Pens with broken slats could contribute to lameness or other leg injuries. For indoor facilities, floors for all phases of production should be rough enough to minimize slips and falls, but not so rough as to injure the pad of the hoof. Non-slip flooring to provide good footing is essential in areas where animals are handled such as loading ramps, scales, restraint chutes or breeding pens. If more than 1% of the animals fall during handling, there is a problem that needs to be corrected.

Chute Maintenance
Chutes should be appropriate for the phase of production, be in a good state of repair, and not cause injury to the animal. Before loading or unloading pigs begins, inspect the chute for damage.

- Sharp, protruding or otherwise injurious items should be removed or repaired.
- Broken or missing cleats should be repaired or replaced.
- Moving parts such as cables, pulleys and hinges should be inspected regularly and maintained as necessary.
- Ramps and chutes should be kept free of potential distractions.

The design and function of ramps, chutes and load-out areas should be to minimize the incidence of slips and falls. Additional information on ramp design can be found in the TQA program.
**Feeder Maintenance**

There are a wide variety of feeders and feeding equipment available today. Feeders should be in a good state of repair to allow unobstructed feed delivery to the pigs and not cause injury to the animal. Whatever type you use in your operation, the number of feeding spaces and their size should allow your pigs to consume their daily ration without unnecessary fighting and competition. Adequate space is especially important in the period immediately after weaning because newly weaned pigs tend to eat at the same time. Therefore, it is important to have feed readily available and easy to access. Additional information can be found in the Swine Care Handbook.

**Waterer Maintenance**

Several types of waterer designs are available for use in swine production. Whatever type is used in your operation, waterers must be in a good state of repair to allow water delivery to the pigs and not cause injury to the pigs. Waterers should be designed and positioned so animals can drink freely and have flow rates that easily meet the pigs' water intake requirements. Enough waterers should be available within a pen to decrease competition for the resource. Specific information about appropriate water requirements per day and suggested flow rates can be found in Table 1.

---

**Body Condition Score (BCS)**

Body condition scores are useful to assess the adequacy of the nutrition program and the effectiveness of the heating and cooling strategies in the facility’s management plan. Body condition scoring has been adopted from the industry standard that is based on a 1 (emaciated) to 5 (obese) scale as shown in Figure 2. Animals should be fed according to their body condition. ANY animal with a body condition score less than 2 should receive immediate attention to improve their body condition. Without improvement, the on-farm euthanasia plan should be implemented and the animal humanely euthanized in a timely manner.

While emaciated (body condition score 1) is a potential indicator of a pig's well-being, an obese pig also has increased risks to its health. Obese pigs should have caloric intake decreased. Pigs that are either too thin or too fat could be an indication of a management need and a cause for discussion with your advisor.

Pay particular attention to sows 14 days before farrowing as body condition at this time can be an indicator of how the sow might be able to handle the stresses of nursing. If needed, additional feed should be supplied after she is weaned to rebuild body condition. Pay close attention 14 days after weaning to assure that body condition is adequate or being corrected.

**Figure 2. Body Condition Scoring**

<table>
<thead>
<tr>
<th>Image</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Score</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Condition</td>
<td>Emaciated</td>
<td>Thin</td>
<td>Ideal</td>
<td>Fat</td>
<td>Obese</td>
</tr>
<tr>
<td>Detection of Ribs, Back Bone, “H” Bones and Pin Bones</td>
<td>Obvious</td>
<td>Easily detected with pressure</td>
<td>Barely felt with firm pressure</td>
<td>None</td>
<td>None</td>
</tr>
</tbody>
</table>

Taken from “Assessing Sow Body Condition” by R.D. Coffey, G.R. Parker, and K.M. Laurent (ASC-158; 1999)
BODY SPACE

For pig space to be considered adequate, and pending further research, the pig must be able to:

- Easily lie down fully on its side (full lateral recumbency) without having to lie on another pig and be able to easily stand back up.
- Lie down without the head having to rest on a raised feeder.
- Additionally, a pig 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. The pig must be able to easily stand back up.

In the case of stalls, it is important to make sure the stall size is appropriate for the size of the animal and does not cause injury to the animal. For the animal to perform all of the above mentioned criteria, the appropriate size of the stall will be dependent upon the animal’s physical size. Back-to-back, back-to-udder or udder-to-udder contact is appropriate as long as injury due to contact is not evident.

Group housing for pregnant sows is defined as a housing environment for more than one sow where, after confirmed pregnant, they have the ability to lie down and stand up unimpeded and to turn around.

Tables 3, 4 and 5 in the Swine Care Handbook give recommended space allowances for pigs in total confinement, pigs in pens with outside concrete aprons and pigs on pasture. However, production practices, such as group size, ventilation equipment and rate, and type of floors (partial versus total slats), have an effect on proper stocking densities. Discuss with your advisor the stocking density that meets the needs of your animals given the specifics of your production facility and intended uses.

ANIMAL EVALUATION

Animal evaluation will help verify that the other aspects of the well-being program have been successfully extended to the animals themselves.

Production Performance
The production performance of the pigs in your herd often can be an indicator of their well-being. Some production performance measures that can be tracked include average daily gain, feed efficiency, farrowing rates and mortality rates. When calculating mortality rates, be sure to include animals that die naturally and those euthanized. A change in any one of these measures can be a potential indicator of a change in the well-being of the pigs. These indicators may depend upon genetics and nutrition, so it is important to benchmark these performance measures in your herd over time to better understand the typical performance of your herd as well as to allow you to identify changes in the well-being of the herd.

Lameness
A lame pig is one that cannot bear full weight on one or more limbs. There are several factors that can contribute to lameness including bacterial infections, heredity, foot and leg structure, injury or trauma or nutrition. To detect lameness, pigs should be observed while they are standing or walking on a flat surface. Pigs that are diagnosed as lame should be treated, culled or humanely euthanized depending on the cause and degree of lameness.
Skin Lesions
If skin abscesses or wounds are present, count how often they occur and note their location. These factors provide important clues about their sources and ways to prevent them. Look for and note skin lesions on these areas:

- Main part of the body – the shoulder, belly, back, flank and limbs (both front and back legs)
- Hooves
- Head and ears – include the cheek, ears, snout, mouth and chin
- Tail and genital areas

Abscesses
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.

Deep Wounds
Deep wounds are defined as breaks that completely penetrate the skin, such as bites or other lesions that penetrate through the skin. Note the wounds and their location - for example, on the shoulder, vulva or other parts of the body - and work to identify the likely cause of the wounds.

Shoulder Sores
Shoulder sores are caused by pressure compressing the blood vessels supplying the skin and tissues covering the shoulder blade. This pressure interrupts the blood flow causing tissue damage and the formation of lesions. Sows that have a body condition score less than 3, are older parity or are lame, are more susceptible to developing shoulder sores. Abrasive flooring in farrowing and gestation housing can also have an impact on shoulder lesion development. Shoulder sores and lesions should be kept clean and treated according to veterinary advice. Placing rubber mats in the farrowing and/or gestation stall has been shown to reduce shoulder sores and reduce healing time.

Rectal Prolapses
Rectal prolapses are an eversion or the turning inside-out of the rectal lining. Common causes are pigs coughing or piling to stay warm. Docking tails too close to the body or the pigs' genetics also may contribute to the occurrence of rectal prolapses. It is important to isolate or treat these animals as quickly as possible to prevent further injury and to enhance the chance of full recovery. Your advisor can help you with a treatment plan but finding and addressing the contributing cause is also very important.

Hernias
Hernias, or ruptures, are the protrusion of the intestines through the muscles of the abdomen or groin. Pigs with large hernias that touch the ground or cause difficulty walking should be euthanized.

Tail Biting
Tail biting is a behavior that negatively impacts the well-being of the other pigs. Tail biting can result in open wounds, bleeding, infection and even death. Several factors may contribute to tail biting behavior including nutritional deficiencies, inadequate access to feed and water, high ammonia concentrations, excessive noise, uncomfortable temperatures or overcrowding. When an outbreak of tail biting behavior occurs, it is important to identify and correct the root cause of the behavior, though this can be difficult to accomplish because of the multi-factorial causes of tail biting. Injured animals should be treated, and the biter(s) should be identified if possible and housed separately.
Swine Behavior
Swine behavior will be reflective of the quality of the care received and suitability of the facilities. Swine that are repeatedly exposed to unpleasant handling and abuse will show evidence of fear in the presence of humans. Pigs that have repeated exposure to pleasant handling are relaxed around people and generally will be easier to move. Watching how your animals react to you or someone else can give an important indication of how they are being handled. Pigs are naturally inquisitive. However, they also are cautious. Normally, a pig may initially act fearful or excitable as a protective reaction but then relax and maybe even explore your presence by nosing you or biting at your legs or feet. The pig’s reaction also is affected by recent vaccinations, blood collection for herd, individual diagnostics, etc. Handling that reduces stresses during movement may have a direct impact on meat quality.

EUTHANASIA

Written Euthanasia Plan
Because every operation will at some time have sick or injured pigs that do not respond to care and treatment, it is important to have a written euthanasia action plan. The On-Farm Euthanasia of Swine brochure provides information to help you choose the appropriate method by considering the following:

- **Human Safety:** The method must not put you or others at unnecessary risk.
- **Pig Well-Being:** The method should minimize pain or distress on the animal.
- **Practicality/Technical Skill Requirements:** The method should be easily learned and repeatable with the same expected outcome.
- **Caretaker Compliance:** You and others must be comfortable with, and willing to perform, the chosen method when needed. Lack of compliance compromises the well-being of the pig.
- **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.

With this information, you will be able to identify the best methods to use in your operation. Be sure to complete the euthanasia plan in the back of the On-Farm Euthanasia of Swine brochure for each stage of production in your operation. The written euthanasia plan should be readily accessible.

Timely Euthanasia
Euthanasia is defined as humane death occurring with minimal pain or distress. Pigs that are not responding to care or are unlikely to recover must be euthanized humanely. The caretaker’s past experiences with similar conditions should be used to make informed decisions about the likelihood of recovery. Timely euthanasia, as well as using the appropriate methods and equipment, is critical to the well-being of these pigs.
**Timeliness**
Timely euthanasia will minimize animal pain or distress. The definition of “timely” is:

- Animals that have no prospect for recovery after two days of intensive care should be humanely euthanized.
- Severely injured or non-ambulatory pigs with the inability to recover should be euthanized immediately.
- Any animal that is immobilized and with a body condition score of 1 should be euthanized immediately.
- Pigs with large hernias that touch the ground or cause difficulty walking should be euthanized.

Events that call for timely euthanasia can happen any day of the week. Personnel trained in euthanasia should always be available to respond – including nights, weekends and holidays.

**Functional Equipment**
Any equipment used for euthanasia of pigs 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. Euthanasia equipment should be centrally located for use throughout the site. Caretakers trained in euthanasia methods must have access to this equipment.

**SAFE ANIMAL HANDLING**
Using best pig-handling and movement practices will contribute to good well-being of the pig and a safer work environment for the handler. When pigs are improperly handled, they become distressed, which can lead to several negative consequences such as physical injury to the pig, injury to the handler, decreased sow reproductive performance, increases in the incidence of non-ambulatory pigs, increased time to load and unload pigs and reduced growth rates. Additionally, improper handling also significantly contributes to carcass shrink, trim loss and poor meat quality. Improper handling and transport of pigs is one of the largest profit-reducing issues facing the pork industry today. Proper handling is best achieved by first understanding some general behaviors exhibited by the pigs, as well as understanding the pig’s physical characteristics such as how they can see, hear, smell, learn and remember experiences. The main instinctive behaviors of a pig that a handler should understand, and use to his or her advantage when possible, include:

- Flight Zone and Point of Balance
- Following/Herding Instinct

**Flight Zone**
The flight zone is an imaginary circle around an animal that it considers its individual space. This principle also applies to working the collective flight zone of a group of pigs.

- The size of the flight zone is determined by the pig’s familiarity with humans and will vary from pig to pig.
- A completely tame pig has no flight zone - a handler can walk directly up to the pig and touch it.
- Handlers should work with an animal from the edge of its flight zone.
- When a handler enters a pig’s flight zone, the pig will move away. If the pig does not see an escape route, it may attempt to turn around (if necessary) and run past the handler.
**Point of Balance**

The point of balance is located at a pig's shoulder. The pig responds to a handler's approach relative to the point of balance. If a handler enters a pig's flight zone, the pig will move:

- Forward if the handler approaches from behind the point of balance.
- Backward if the handler approaches from in front of the point of balance.

Because a pig's eyes are on the sides of its head, a pig's vision is approximately 310 degrees, leaving a blind spot directly behind it. This blind spot means that a handler cannot rely on a visual reaction to get a pig to move when standing directly behind it. Ideally, to move the pig forward, enter the point of balance from the rear, just inside the animal's flight zone. Moving in and out of the flight zone and behind the point of balance allows pigs to remain calm and move in an orderly fashion.

**Following/Herding**

Pigs instinctively group together to be in visual or physical contact with each other. This instinctive behavior also causes pigs to follow each other in order to maintain that contact. The caretaker can take advantage of this behavior when moving pigs of any age or size. Examples where this is effective include when a handler is moving pigs:

- Up or down a ramp or chute.
- Through hallways.
- Into or out of a pen or room.

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**A Pig’s Flight Zone, Point of Balance and Blind Spot**

![Diagram of a pig's flight zone, point of balance, and blind spot](Image)
When these concepts are not used or are used incorrectly, pigs can be injured when trying to escape, either through contact with other pigs or through contact with an object in their environment such as a gate, feeder or chute. Visual gaps between pens, alleys, ramps, gates, chutes or other places can appear to be an escape route to a pig and can result in injuries to the pig and/or cause balking.

**Environment**

During movement, a pig may come across unfamiliar or distracting elements within its environment. Pigs typically slow, stop or change direction when they encounter something new or unfamiliar such as changes in:

- Floor surface (i.e. transition from concrete alley to wooden chute).
- Footing/traction (i.e. wet, slippery chute or loose cleats).
- Temperature (i.e. moving from a warm building to an outdoor chute/ramp on a cold day).
- Lighting – pigs move best from dark areas to lighter areas.
- People, equipment, trash, other animals or objects in their path or peripheral vision area.
- Drafts or wind.
- Doorways that may change the width of the alley.

It is important to understand the potential effects human interactions have on pigs and pig behavior. A person's intentions are not always understood by the pig, which may create fear and/or a negative reaction to a handler. Additionally, pigs that have had regular, positive interactions with people will typically be less fearful and easier to handle.

Walking pens slowly on a daily basis will help pigs become used to positive interactions with people. This will train the pigs to quietly get up and calmly move away from the handler. Pigs can recall previous experiences, and if they have had a bad handling experience in the past, they may be more difficult to handle the next time. This previous experience may relate specifically to a human interaction or it may relate to a piece of equipment such as a loading chute.

Handlers should act calmly and avoid sudden movement, loud noises and other actions that may frighten or excite pigs. This includes shouting to other handlers when working as a team to move pigs. Calm pigs are easier to handle than excited, agitated pigs. Frightened pigs bunch together and will be more difficult to sort and move. Pigs should be moved at their normal walking pace. Aggressive handling must be avoided as it can lead to pigs becoming non-ambulatory due to injury, stress or fatigue. Research indicates that more than 20 percent of aggressively handled market hogs can become injured, stressed or fatigued compared to zero percent of those handled properly.

Aggressive handling includes:

- Overuse, or improper use, of electric prods.
- Loud noises and yelling.
- Grabbing and pulling ears and tails.
- Moving pigs too fast.
- Moving too many pigs per group.
- Overcrowding pigs in chutes, ramps and alleyways.
- Rough physical contact.
Willful acts of neglect or abuse are unacceptable. Willful neglect and abuse are defined as acts outside of normally accepted production practices that intentionally cause pain and suffering. Animal movement is a leading area where willful abuse can occur. The National Pork Board strongly advises anyone with knowledge of possible animal abuse or neglect to report these actions immediately to the proper responsible persons.

Handling Pigs of Various Types and Sizes
Basic handling techniques apply to all pigs, but specific requirements for certain sizes and types of pigs differ. Regardless of the size of pig being handled, worker safety and animal well-being should be top of mind. To protect yourself, be aware of and anticipate animal movements. Pay attention to your animals and your positions. Know when and where your hands, knees and feet could be injured. Avoid placing your arms and hands between the animal and equipment. Set up gates and alleys according to your farm protocols. Always have an escape route to quickly get out of the area, and be aware of the location of your co-workers so you do not direct the pigs toward them.

Handling Breeding Stock
Breeding swine (sows, gilts and boars) are the largest pigs a handler will work with, and handlers should use extra caution when moving these animals. A sorting board should be used when attempting to turn or stop a large animal. The handler should not use his or her body alone. If the animal appears aggressive or agitated, it may be safer for the handler to move out of the way than to risk potential injury. These large animals also can cause injury, to people or pigs, through sudden movement of their large heads or by pinning the handler between the pig and a fixed object such as a gate or feeder.

Breeding swine can be unpredictable. Boars are especially unpredictable when exhibiting mating behaviors, such as when they are being used for estrus detection. Boars are dangerous because their large tusks can cause injury. Handlers should use extra caution and never turn their back to a boar. Sows can be aggressive as well, especially when they perceive their litter is being threatened (e.g. during piglet processing or weaning). In addition to their natural behaviors, pigs of breeding age require extra caution just because of their body mass and strength.

Handling Piglets
Handling piglets can present a safety challenge to the handler. Piglets have sharp teeth and can bite the handler when picked up. The sow may also attempt to bite the handler when he or she reaches into the stall to grab a piglet.

Piglets can either be moved by herding, by picking them up and moving them by hand, or with a cart. Piglets should be picked up under the rib cage or by grabbing a rear leg above the hock, then gently setting the piglets into a cart, alleyway or pen. Piglets may squirm and wiggle when picked up, so care should be used so that they are not dropped. Piglets should not be tossed or thrown; this is considered mishandling. When being held for an extended period of time, piglets should be held under the rib cage next to the handler's body or by both rear legs using two hands.

Handling Nursery and Finisher Pigs
Nursery and finisher pigs grow rapidly and quickly become too large to lift or hold. When sorting and moving these pigs, it is often the best practice to work in pairs and have one person work the pen gate while the other sorts the pigs with a sorting board. This is especially true when finished pigs are being sorted for load-out as the first pigs may be reluctant to leave their pen mates.
Handlers should rely on a sorting board instead of their body to turn or stop large finishing pigs. A bi-fold panel is a particularly useful device as it creates a coralling effect, reduces an escape route for the pig and increases safety for the handler. If an animal appears aggressive or agitated, it may be safer for the handler to move out of the way than to risk a potential injury.

**Group Sizes**

Pigs should be moved in groups large enough to be efficient for the production system, but small enough to be safe for the pigs and the handler(s). Groups of finished pigs and breeding stock should be small enough so that the handler can always maintain control of the lead pig. In some instances, a difficult pig might need to be moved out of a pen with a pen mate. Once outside the pen, sort the unwanted pig back into the pen. Additionally, research indicates reducing finish pig group size from 8 to 4 pigs during loading significantly decreases the amount of time to load the trailer. The suggested group sizes in Table 4 are based on best industry practice but facility design, temperament of the animals or weather conditions may require adjustment to group size.

**Non-Ambulatory Pigs**

Non-ambulatory pigs are a challenge that a stockperson may face at some point. A pig that cannot get up or walk on its own is called non-ambulatory. A pig may become non-ambulatory due to injury, illness or fatigue. Determining the specific cause will help handlers identify the appropriate way to care for the pig.

Medical treatment is an option for a pig that is non-ambulatory due to injury or illness. When the likelihood of recovery is high, the pig should be moved to a pen where competition for feed and water is reduced and where the pig can be monitored and treated regularly. When pigs become non-ambulatory due to illness or injury and the likelihood of recovery is low, even with treatment, the pig should be humanely euthanized.

In the case of pigs becoming non-ambulatory due to fatigue, quietly and humanely move the pig to a pen and allow it to recover before attempting to move it again. Most pigs will fully recover after two to three hours of rest. Fatigued pigs can be recognized by open-mouth breathing, vocalization (squealing), blotchy skin, stiffness and muscle tremors. The best way to prevent the occurrence of fatigued pigs is to minimize stress by utilizing good animal handling practices.

The position of the National Pork Board is that any pig that is unable to walk or that is ill and will not recover should be humanely euthanized on the farm and not transported to market channels. When the likelihood of recovery is low, even with treatment, the pig should be euthanized. When the likelihood of recovery is high, the pig should be moved to a pen where competition for feed and water is reduced and where the pig can be monitored and treated regularly.

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**Table 4. Suggested Group Sizes by Pig Type**

<table>
<thead>
<tr>
<th>Pig Type/Size</th>
<th>Suggested Group Size</th>
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<tbody>
<tr>
<td>Weaned Piglets</td>
<td>20</td>
</tr>
<tr>
<td>Nursery Pigs</td>
<td>20</td>
</tr>
<tr>
<td>Finished/Market Pigs</td>
<td>3-5</td>
</tr>
<tr>
<td>Sows/Gilts</td>
<td>1-5*</td>
</tr>
<tr>
<td>Boars</td>
<td>1-5*</td>
</tr>
</tbody>
</table>

*Depending upon temperament and safety conditions, individual movement may be required.
Handling Equipment

There are many different pieces of handling and sorting equipment on the market, or that can be easily made on the farm, to help you sort or move pigs in a safe, humane and efficient manner. Handling equipment is effective by providing barriers or stimuli including:

- Physical barrier (i.e. sorting board).
- Visual barrier (i.e. matador’s cape).
- Auditory stimulus (i.e. rattle/shaker paddle).
- Visual stimulus (i.e. nylon flag).

Most of these tools are effective for a specific situation and should not be used for others. For example, a plastic rattle/shaker paddle may be effective for moving weaned piglets from the farrowing room to the nursery but is not a tool to use when moving a boar to his pen after estrus detection. The most versatile tool is typically the sorting board or panel. A sorting board can provide both a physical and a visual barrier.

Using an electric prod to move a pig is stressful and should not be the primary tool for moving pigs. It should only be used as a last resort.

- Numerous research studies have shown increased use of an electric prod increases stress in pigs, so use of electric prods should be avoided or minimized. If a pig is moving in the desired direction, there is no need to use the prod.
- Never prod a pig in sensitive areas such as eyes, ears, nose, genitals or rectum.
- If regular use of an electric prod is needed, evaluate your handling procedures and facilities.

If it is necessary to use a prod, it should be applied to the back of the pig behind the shoulder, and the duration of the shock should not exceed one second. The pig should be allowed time to respond before another shock is given. Electric prods should not be used when moving pigs from the pen.

Understanding pig behavior, including flight zone, point of balance, herding instinct and using proper handling techniques, can ease handling and decrease stress. Failure to properly handle pigs is a common cause of human injury within a production facility. Proper use of handling equipment (i.e. minimizing electric prod use, increasing use of sort board) can facilitate handling and reduce injuries to both pigs and handlers. These details should be the focus of caretaker training.
**WILLFUL ACTS OF ABUSE**

Willful acts of neglect or abuse are unacceptable and are not tolerable. Willful abuse and neglect are defined as acts outside accepted production practices that intentionally cause pain and suffering including, but not limited to:

- Intentionally applying prods to sensitive parts of the animal such as the eyes, ears, nose, genitals or rectum.
- Malicious hitting/beating of an animal.
- Purposeful failure to provide minimal food, water and care that results in significant harm or death to animals.

There are currently no national laws or regulations that dictate animal production conditions on the farm. However, most local or state governments have laws that address animal cruelty. Producers should familiarize themselves regarding such laws in their locations. The Swine Care Handbook and the Federation of Animal Science Societies’ Ag Guide define accepted animal care practices.

All caretakers should be familiar with what is considered willful acts of abuse and know that these are unacceptable and are not tolerable. If a willful act of abuse is observed, immediately intervene to stop the situation if reasonably and safely possible. Discuss the situation with the appropriate authority (owner, manager, law enforcement, etc.). The National Pork Board strongly encourages anyone with knowledge of possible animal abuse or neglect to report these actions immediately to the proper responsible persons.

The National Pork Board endorses adherence to the See it? Stop it! initiative and its principles.

See it? Stop it! enforces the perspective that willful acts of abuse are unacceptable and will not be tolerated.

See it? Stop it! empowers anyone working on a farm or in a farm setting where animals are being raised or transported, to immediately report any instances of animal abuse or neglect.

[www.seeItStopIt.org](http://www.seeItStopIt.org)
GPP #9
Provide Proper Swine Care to Improve Swine Well-Being.

SUMMARY:

- Record key events that contribute to good pig well-being. These include:
  - Establishment of a veterinary/client/patient relationship.
  - Administration of medication and treatments.
  - Documenting caretaker training events.
  - Daily observations.

- Plan for different types of emergencies by developing a written emergency action plan and having emergency backup equipment in place for the site.

- Provide feed, water and an environment that promotes pig well-being.
  - Manage facility ventilation to achieve desired air temperature and good air quality.
  - Evaluate pens, flooring, chutes and alleyways to ensure they are in a good state of repair and not causing injury to the animals.
  - Evaluate feeders and waterers to ensure they are in a good state of repair and allow for adequate feed and water delivery.
  - Assess body condition scores and manage nutrition to maintain good body condition.
  - Provide adequate physical space for the pig’s size.
  - Evaluate animals for signs of how well they are interacting within their environment. Areas to evaluate include production performance, mortalities, lameness, skin lesions, abscesses and wounds, rectal prolapses, ruptures/ hernias, tail biting and behavior.

- Use approved practices to euthanize, in a timely manner, those sick or injured pigs that fail to respond to care and treatment.

- Apply basic animal handling concepts, including animal instincts/behavior, the flight zone, point of balance, acceptable tools and handling aides, when handling and transporting pigs of various sizes/types.

- Recognize and report any incident of willful abuse or neglect.

NOTES:
Utilize Tools for Continuous Improvement.

GOOD PRODUCTION PRACTICE #10
Training Animal Caretakers

Advances in science and technology continually provide new opportunities as well as new products, equipment and techniques for the industry. To stay abreast of these changes, everyone from the most senior manager to the newest employee should be engaged in training and educational opportunities consistent with their responsibilities. An effective training program is vital to understanding and implementing the PQA Plus Good Production Practices (GGPs) for promoting food safety while improving pork production efficiency.

All new animal caretakers and other employees involved in the herd’s production must be trained in their duties. This training can come from training manuals, CDs/DVDs and videos, as well as from on-the-job training under the guidance of experienced employees. Training is not only essential for the workers’ safety but also for assurance that the animals in their care are treated humanely and in a manner that will not jeopardize the safety of the pork product. Other benefits of a formalized training program are increased productivity and efficiency, improved employee morale and retention, and greater sense of achievement and job satisfaction as the operation’s goals are met.

Throughout a training program, a technique called the PTSDR method may be used to train others. The steps below illustrate this technique that consists of five steps:

|------------|--------|--------|------|----------|

**Step 1: Prepare Stage**

The “Prepare” stage consists of the trainer preparing to train by focusing on the objectives and outcomes he or she wants to achieve within a training program. The prepare stage also consists of determining the time constraints needed for an individual to obtain a desired skill, as well as identifying any activities that should be implemented in the training program to enhance the knowledge and skills of individuals, then gathering the materials needed to carry out activities and the entire training program.

**Step 2: Tell Stage**

The “Tell” stage involves addressing the key points needed to obtain knowledge and skills. In this stage, the trainers share the information needed in order to complete the task. For example, when conducting a training session on animal handling, the trainer might discuss an animal handling brochure that covers specific information the trainee would need to know in order to properly handle or move pigs.

**Step 3: Show Stage**

The “Show” stage involves demonstrating how to complete a specific task. Continuing the example given above, this is the point at which the trainer would demonstrate how to properly handle or move pigs. This may take place in a barn with the animals.
Step 4: Do Stage
The “Do” stage enables the individuals to practice what they have been already told and what has been shown to them. In this fourth step, the trainee has the opportunity to practice properly moving and handling pigs, as they were told and then shown in the examples above.

Step 5: Review Stage
During the “Review” stage, the individual is evaluated on his or her performance of a desired task. After evaluation is completed, the individual is given feedback and recommendations for improvement.

Documentation of Training
Regardless of the type of educational program used for training, and regardless of how formal or informal the training event for the animal caretakers, documentation of the training is important. Training records should indicate the names of trainees and trainers, topic covered and the date of the training. Attention should be given to make sure the caretakers are trained and proficient in tasks before they perform them without supervision. Templates are provided in the Appendix of this manual to assist you in documenting training sessions.

Conducting Animal Well-being Assessments
Conducting site assessments on a regular basis is an excellent way to benchmark how the animal care practices are implemented and measure the animals’ well-being on your farm. You should be aware of your animals’ well-being every day. The success of your operation is dependent upon the well-being and productivity of your animals. Assessing animal well-being on a regular basis will help detect changes in the environment that could negatively affect your pigs.

A PQA Plus site assessment must be conducted by your PQA Plus advisor at least once every three years. A PQA Plus advisor is an individual who has been trained to perform assessments objectively and knows how to address problem areas found during the assessment. As a caretaker, you work with your herd on a daily basis and may become less aware of slight changes in the environment that could affect the well-being of the pigs. Having a second set of eyes observe your farm can be useful in detecting these changes. Additionally, your PQA Plus advisor is a useful resource for learning about new equipment, production practices and research that can affect the well-being of your animals.

Completing a site assessment more often than every three years will give you an even better tool to track changes in your production practices and operation that could affect the well-being and the productivity of your animals. Internal site assessments must be conducted annually between visits from your PQA Plus advisor. It is suggested that the results of the internal assessment be reviewed with your PQA Plus advisor to develop and implement an action plan for identified problem areas. These internal assessments and documentation of corrective actions made need to be kept for three years by the producer and will be reviewed by the PQA Plus advisor during his or her next PQA Plus site assessment.

Develop and Implement an Action Plan
The final step of conducting a site assessment is to develop and implement a corrective action plan for any area that needs improvement. A corrective action plan documents what actions have been or will be taken to correct the issue(s) identified during the assessment. This final step helps to demonstrate the industry’s commitment to continuous improvement to our industry partners, customers and the general public.

Some issues, such as written euthanasia plans or poor air quality, may be corrected relatively quickly. In this case, your corrective action plan should document how the issue was
corrected. Other areas, such as inadequate medication and treatment records or low body condition of pigs, may require extra capital or time to correct. In this case, your corrective action plan should document a detailed description of how you plan to correct the issue and a timeline for expected implementation.

Training or retraining of caretakers may also be part of the corrective action plan in efforts to correct the issue or prevent it from occurring again in the future. Your PQA Plus advisor can be a useful resource when developing and implementing your action plan. He or she can provide ideas or advice on how an issue may be corrected or connect you with other experts.

**Third-Party Evaluation**

Third party evaluations (audits) are a widespread, recognized and valued practice within the food production industry to bring transparency, credibility, assurance of process compliance and validity to production units. Performance of quality audits has become a skilled profession and a well-accepted process that will provide information that should be comparable across individual units being evaluated. Under most conditions, these audits are conducted at the production, processing or retail distribution centers by customers or professional audit companies/auditors at the request of customers or the audited site. The auditors have no personal or economic relationship or perceived conflict of interest with the units being audited, which enhances credibility.

Their role is not advisory, but rather to perform a reporting function using predetermined criteria observed during their audit. Audits may be regularly scheduled or “for cause” events. On-farm audits for fruits, vegetables and other agricultural products worldwide have been practiced for years. Customers and consumers may make purchasing or contract compliance judgments based on the results of these audits.

Animal production is beginning to be subjected to compulsory or involuntary on-farm production audits as a condition for sale of live animals. With animal welfare and other production practices under increased consumer scrutiny, that picture is changing. The PQA Plus program has been structured to provide customers and consumers with credible, affordable and workable information for all levels. The PQA Plus third-party verification component is designed to be an evaluation of the effectiveness and implementation of the PQA Plus program principles, not to audit individual production units for compliance. The results of the verification are used to identify areas for additional education and training. They also give customers a view of the implementation status of PQA Plus principles. To accomplish this, a statistically valid sample of sites is chosen at random from the database of PQA Plus assessed sites in the past three years. Completion of the PQA Plus site assessment process automatically qualifies your site as a potential candidate for verification. The aggregated data from these sites collectively demonstrate the level of adoption for the entire pork industry of the PQA Plus and We Care™ principles.

A few key points to remember about the verification process:

- The verification results are completely confidential and are intended solely for the purpose of improving the PQA Plus program.
- Producers cannot lose site status or certification as a result of participating in the verification process.
- The verification process can help producers learn ways to improve their operations and provide proof to customers that our industry works to continuously improve its practices.
- The verification process is crucial to the success of PQA Plus since it assesses producer implementation of the GPPs and recommended practices as identified in the site assessment.
When sites are randomly selected, an official notice is sent to the person noted as the verification contact at the time of the assessment. The third-party verifier will work with this individual to schedule a site visit and learn the biosecurity protocol with which they must comply.

During the visit, the third-party verifier will conduct an opening meeting to make introductions, discuss the scope and purpose of the verification, review the methods and techniques that will be used and discuss logistics of the verification such as facility layout, access to documents and escorts. The verifier will then conduct the verification per the PQA Plus guidelines and verification checklist. The site representative should accompany the verifier but not interfere with the verifier’s work. Your PQA Plus advisor may be present during the verification but should not interfere with the verifier’s work. Finally, the verifier will conduct an exit meeting to review the purpose and scope of the verification, explain their findings and allow for questions that clarify their observations.

After the visit, you are asked to work with your PQA Plus advisor to complete and submit a corrective action plan for any areas found to be “unacceptable”. The verifier will submit his or her report to the third-party database, and send a final verification summary back to the producer. You will also have the opportunity to provide feedback on the individual verifier and the process. This feedback is used to help improve the process in the future.

It is important to note that while an individual site may be selected to participate in the third-party verification process, that individual site is considered to be representative of the entire industry. Your participation in the verification survey will boost the credibility of the PQA Plus program as a whole and will benefit the entire industry. This program is vital in demonstrating the industry’s collective commitment to responsible pork production. Through full participation in PQA Plus, you show your customers that you share their values and that you are committed to professionalism, social responsibility and providing them with the best pork products possible.

**SUMMARY:**

- Perform ongoing training for all animal caretakers in their duties and in providing care for the animals, equipment and co-workers in the operation.
- Conduct and document regular site assessments to identify areas for improvement and benchmark progress towards continuous improvement.
- Develop a corrective action plan to improve areas identified during the site assessment.
- Implement the corrective action plan to demonstrate you are committed to continuous improvement.

**NOTES:**
ACRONYMS

AMDUCA = Animal Medicinal Drug Use Clarification Act (1994)
AASV = American Association of Swine Veterinarians
C & D = Cleaning and disinfecting
cGMPs = current Good Manufacturing Practices
CPG = Compliance Policy Guide
EPA = Environmental Protection Agency
FARAD = Food Animal Residue Avoidance Databank

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
TQA = Transport Quality Assurance®
USDA = United States Department of Agriculture

For a more detailed listing of pork industry acronyms visit
www.pork.org/newsandinformation/acronyms.aspx

GLOSSARY

Administration Techniques: Refers to proper delivery of medication by injection, water or feed.

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

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

Biological Hazard: These include microbiological or zoonotic agents, such as bacteria including Salmonella and parasites, such as Trichinella.

Chemical Hazard: These include natural toxins, drug residues, such as violative levels of sulfonamides or antibiotics, pesticides and unapproved use of direct or indirect food or color additives.

Drug Sponsor: The manufacturer of the animal drug.

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

Ethical Principles: U.S. pork producers’ commitment to produce safe food, protect and promote animal well-being, safeguard natural resources in all of their practices, ensure their practices protect public health, provide a work environment that is safe and consistent with their other ethical principles, and contribute to a better quality of life in their communities.

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 under a VCPR. Extra-label use is not allowed in medicated feeds.

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 all pigs and sanitation levels at packing plants.
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.

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.

Intramuscular (IM): Injection into the muscle tissue of the pig.

Intranasal (IN): Administration in the pig’s nasal passages.

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

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

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

Operation (also known as a system): A grouping of pork production sites/farms forming a complex or unitary whole. May consist of only one site or multiple sites.

Over-the-Counter (OTC): Animal health products that can be purchased lawfully without a veterinary feed directive order or prescription.

Physical Hazard: These include glass, metal or needle fragments.

PQA Plus Advisors: Veterinarians, animal scientists, university Extension specialists or adult ag educators that conduct producer training and on-farm assessments.

PQA Plus Candidate: An individual seeking certification in PQA Plus.

PQA Plus Certification: Recognition that an individual has completed PQA Plus education and training from a PQA Plus advisor.

PQA Plus Endorsement: Recognition that a PQA Plus certified individual has received additional training from a PQA Plus advisor and successfully completed an examination. It allows a producer to conduct a self-assessment of a production site along with a follow up conversation with an advisor.

PQA Plus Site Assessment: An educational site evaluation tool for pork producers to objectively assess records, facilities and the well-being of their pigs on-farm.

PQA Plus Site Status: Recognition offered to an individual site on which a completed on-farm assessment has taken place.

PQA Plus Trainers: Veterinarians, animal scientists, university Extension specialists or adult ag educators identified and trained by the National Pork Board that conduct advisor and producer training and on-farm assessments.

Prescription Drugs: Drugs that can be obtained only by the means of a veterinarian’s prescription.

Site/Farm: The location of an individual pork production facility. A site is defined by its premises identification number, which can be obtained by registering the site at the state level.

Subcutaneous (SQ): Injection under a pig’s skin.
Glossary, Continued

Third-party Verification Process (also known as survey): A third-party evaluation of the implementation of PQA Plus in the industry used to identify opportunities for improvement of the program’s information and delivery. Randomly selected statistically valid sampling of PQA Plus sites with site status.

Maximum Residue 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 FDA. This also is known as a tissue tolerance level.

Veterinary/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.)

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. FDA determines which drugs are VFD drugs. These drugs must be ordered by your veterinarian.

Violative Drug Residue: A drug remaining in animal tissue after harvest that exceed the levels allowed by the FDA.

We Care Initiative: A joint effort of the Pork Checkoff, through the National Pork Board and the National Pork Producers Council, which helps demonstrate that producers are accountable to established ethical principles and animal well-being practices.

Withdrawal Time: Length of time between the last day animals were given an animal-health product and their harvest.

FDA Compliance Policy Guide 7125.37
Proper Drug Use and Residue Avoidance by Non-Veterinarians (CPG 7125.37)

Background
This Compliance Policy Guide (CPG) 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 avoid illegal residues (See CPG 7125.06 (Sec. 615.100) for guidance on proper drug use by veterinarians).

Extra-label use of drugs by non-veterinarians in food-producing animals is a significant public health concern and a contributing factor in illegal residues in edible animal tissue. Such use of drugs is illegal under the Federal Food, Drug, and Cosmetic Act (the Act). Under the Act, virtually all drugs that are intended for use in animals are subject to extensive pre-market approval requirements. New animal drugs (those drugs that are not generally recognized as safe and effective for their labeled conditions of use) may not be legally marketed unless they are the subject of an approved new animal drug application (NADA). A new animal drug that has not been approved is “unsafe” under Section 512 of the Act and adulterated under Section 501(a)(5).

The pre-market approval process ensures that when animal drugs are used in accordance with the labeled directions (type of animal, medical conditions, dosage, route of administration and any other precautions or instructions for the safe and effective use of the product, including withdrawal and milk discard times) milk, eggs and the edible tissues of slaughtered animals
Appendix

FDA Compliance Policy Guide Continued

treated with a drug will not contain potentially harmful or violative drug residues. The withdrawal time is the period following the last treatment with the drug during which the animal may not be offered for slaughter and during which products from this animal such as milk and eggs may not be offered for sale. The length of the withdrawal period is based upon the time necessary for drug residues in the animal to deplete to levels that are shown to be safe.

The withdrawal period is based on residue studies conducted under the labeled conditions of use (type of animal, dosage, route of administration) to ensure that residues above levels that have been shown to be safe will not be present in animal products used as human food. Those levels, called tolerances or safe concentrations, represent the amount of drug legally permitted in the edible tissue of the animal. The withdrawal period enables the animal to metabolically reduce the drug level in its tissues to levels that are not of public health concern.

Policy
Use of Drug Products Contrary to Label Directions

A new animal drug is “unsafe” under Section 512(a)(1) of the Act and adulterated under Section 501(a)(5) when it is not used in accordance with its approved label directions. Therefore, use of an unapproved new animal drug or of an approved new animal drug contrary to label directions constitutes a violation of the Act.

Use by veterinarians and non-veterinarians (e.g., livestock and poultry producers, herdsmen, dealers, haulers, etc.) of veterinary drug products in food-producing animals contrary to label directions is illegal. Uses that are contrary to label directions would include ignoring labeled withdrawal times or milk discard times, using the product in a species not indicated on the label, using the drug to treat a condition not indicated on the label, administering the drug at a different dosage than stated on the label or otherwise failing to follow label directions for use and administration of the drug.

FDA, in the exercise of its regulatory discretion, allows veterinarians, acting in a valid veterinarian-client-patient relationship and in accordance with the conditions outlined in CPG 7125.06 (See Sec. 615.100) (“Extra Label Use of New Animal Drugs in Food-Producing Animals”) to consider the use of a new animal drug contrary to label directions when the health of the animal is immediately threatened and suffering or death would result from failure to treat the affected animal(s). This policy applies only to licensed veterinarians who administer, prescribe or dispense drugs in accordance with the policy guide and applicable state laws. If the veterinarian does not personally administer the drugs, certain labeling information is required, as explained in CPG 7125.06 (See Sec. 615.100). Also, no drug residues above permitted levels may be present in the final food product whenever a drug is used in an extra-label manner by a veterinarian.

Avoiding Drug Residues Through Proper Drug Use

The presence in food of a residue of a new animal drug above permitted levels causes the food to be adulterated under Section 402(a)(2)(D) of the Act. The ability of persons who produce and sell food-producing animals and animal products such as milk and eggs to have systems to monitor and control the use of animal drugs is an indispensable adjunct to providing appropriate therapy and is essential to avoiding illegal residues. Such systems also enable federal and state officials to monitor the food supply and ensure that it is free of harmful drug residues. Failure to establish and utilize such systems can result in adulteration of live food-producing animals, for reasons explained in the following paragraphs.
The Act defines food as “(1) articles used for food or drink for man or other animals... and (3) articles used for components of any such article.” 201(f). Food-producing animals, even though not in their final, edible form, have been held to be food under the statute United States v. Tomahara Enterprises Ltd., Food, Drug Cosm. L. Rep. (CCH) 38,217 (N.D.N.Y. 1983) (live calves intended as veal are food). More generally, courts have long held that unprocessed or unfinished articles are or can be food. See Otis McAllister & Co. v. United States, 194 F.2d 386, 387 (5th Cir. 1952) and cases cited there (unroasted coffee beans are food). Thus, FDA regards live animals raised for food as “food” under the Act.

Section 402(a)(4) provides that a food shall be “deemed” to be adulterated “if it has been prepared, packed, or held under insanitary conditions whereby...it may have been rendered injurious to health.” The phrase “insanitary conditions” in 402(a)(4) is not limited to filth or bacteria. Indeed, the courts have construed “insanitary conditions” in 402(a)(4) to comprehend a variety of conditions that may render food injurious to health. See United States v. Nova Scotia Food Products Corp., 417 F. Supp. 1364, 1369-70 (E.D.N.Y. 1976), rev’d on other grounds, 568 F.2d 240 (2d Cir. 1977); United States v. 1200 Cans, Pasteurized Whole Eggs, 339 F. Supp, 131, 140-41 (N.D. Ga. 1972). Thus, in the context of holding food-producing animals, FDA believes that “insanitary conditions” could include a lack of adequate controls concerning treatment of food-producing animals with drugs.

The “may have been rendered injurious to health” standard requires a reasonable possibility of injury. See United States v. Lexington Mill & Elevator Co., 232,U.S. 399, 411 (1914); see also Berger v. United States, 200 F.2d 818 (8th Cir. 1952). In FDA’s view, failure to maintain adequate controls with respect to use of animal drugs could result in a reasonable possibility of injury to human health because illegal drug residues often result from a lack of such controls and illegal drug residues could have adverse toxicological effect on consumers, ranging from acute to chronic reactions.

Under the circumstances described above, FDA may regard live animals raised for food as adulterated under 402(a)(4).

Persons involved in raising, handling, transporting, holding and marketing food-producing animals are encouraged to establish systems to ensure that animal drugs are used properly and to prevent potentially hazardous drug residues in edible animal products. These control systems should include the following measures:

A. Identifying and tracking animals to which drugs were administered, in order to preclude the sale of edible animal tissue, milk or eggs containing illegal residues (identification may be by specific animal identification, pen or lot, quarantine/segregation, or other means);

B. Maintaining a system of medication/treatment records that, at a minimum, identifies the animal(s) treated (individual animals, pens, lots, etc.), date(s) of treatment, drug(s) administered, who administered the drug(s), amount administered, and withdrawal time prior to slaughter (and when milk, eggs, etc. can be used, if appropriate);

C. Properly storing, labeling and accounting of all drug products and medicated feeds;

D. Obtaining and using veterinary prescription drugs only through a licensed veterinarian based on a valid veterinarian/client/patient relationship; and

E. Educating all employees and family members involved in treating, hauling and selling the animals on proper administration techniques, observance of withdrawal times and methods to avoid marketing adulterated products for human food.
Establishing and maintaining such systems should help producers avoid marketing milk, eggs or edible animal tissue containing illegal residues and avoid regulatory action based on Sections 402(a)(2)(D), 402(a)(4), or 501(a)(5).

Persons who do not administer medications but who purchase or lease animals for milking or sale for slaughter (such as livestock dealers) should also establish and implement a record-keeping system. This system should include information on the source of the animal and whether the animal has been medicated (when, with what drug, and the withdrawal period) to preclude marketing of edible animal tissue, milk or eggs, that may contain illegal residues.

Such persons also may be subject to regulatory action if they market animals containing illegal residues and have failed to take reasonable precautions to prevent the sale of adulterated food.

**Regulatory Action Guidance**

FDA investigators should determine the extent of the misuse of drugs in food-producing animals during the course of their inspections or investigations, such as when following up on an illegal tissue residue report from United States Department of Agriculture/Food Safety and Inspection Service or other information concerning improper drug use. The occurrence of an illegal tissue residue will be regarded as prima facie evidence of improper drug use and may be an appropriate subject for enforcement action. Of course, before recommending such action, FDA will also consider whether evidence of proper drug usage, as described under the “Policy” section above, exists to demonstrate that every reasonable effort has been made to preclude residues.

CVM is prepared to recommend regulatory action when drugs are misused as described above. If the misuse involves administration contrary to labeled directions, the drug itself is adulterated under Section 501(a)(5). If an illegal residue is involved, the food is adulterated under Section 402(a)(2)(D). Further, if an illegal residue is involved and inadequate control measures are documented, the food (edible animal tissue, milk or eggs) may also be adulterated under Section 402(a)(4). Except in egregious situations, a warning letter is ordinarily the appropriate action of choice. Compliance Program 7371.006, Illegal Drug Residues in Meat and Poultry, provides additional regulatory guidance for illegal residues. Drug residues in milk should be handled according to Compliance Programs 7318.003, Milk Safety Program and 7371.008, National Drug Residue Milk Monitoring Program.

*Issued: 7/9/93*
**GROUP TRAINING RECORD**

Trainer/Advisor: ___________________________ Company: ___________________________

Address: ________________________________________________________________

Phone: ___________________________ Email: _______________________________________

Class Date: ___________________________ Advisor ID (if available): ___________________

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### Individual Development Plan

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**Evaluated By:** ________________________  **Next Evaluation:** __________________________

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**Supervisor Signature:** ____________________________  **Date:** ____________________________

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</table>
## Daily Observation Log for Pigs on Farm

**Unit Location:**

**Premises ID Number:**

<table>
<thead>
<tr>
<th>Date (MM/DD/YY)</th>
<th>Caretaker Name/Initials</th>
<th>Time of Day</th>
<th>Comments – Optional</th>
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<tr>
<td>Date (MM/DD/YY)</td>
<td>Animal or Pen ID</td>
<td>Product Name</td>
<td>Amount of Drug Given (cc; water)</td>
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</tbody>
</table>

^{1} IM=Intramuscular; SQ-Subcutaneous; IN-Intranasal; Water; Feed
^{2} Sold; Recovered; Died
# Pen or Individual Pig Treatment Record

**Unit Location:** [Blank]

**Premises ID Number:** [Blank]

<table>
<thead>
<tr>
<th>Date (MM/DD/YY)</th>
<th>Animal / Pen / Barn ID</th>
<th>Body Weight</th>
<th>Reason for Treatment</th>
<th>Number Medicated</th>
<th>Product Name</th>
<th>Amount of Drug Given (cc;water)</th>
<th>Route(^1)</th>
<th>Initials of Who Administered</th>
<th>Preslaughter Withdrawal (Days)</th>
<th>Date Withdrawal Completed (MM/DD/YY)</th>
<th>Date and Treatment Results(^2)</th>
<th>ELDU(^3)</th>
<th>Advising Veterinarian</th>
</tr>
</thead>
<tbody>
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</tbody>
</table>

\(^1\) IM=Intramuscular; SQ-Subcutaneous; IN-Intranasal; Water; Feed  
\(^2\) Sold; Recovered; Died  
\(^3\) Veterinarian Name and Contact information for Extra-Label Drug Use
EUTHANASIA ACTION PLAN

Unit Location: ___________________________  Premises ID Number: ________________

Date: ______________  Drafted by: ____________________________________________

Employees Responsible for Euthanasia: ________________________________________

<table>
<thead>
<tr>
<th>Phase of Production</th>
<th>Euthanasia Method</th>
<th>Backup Method</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Farrowing Piglets</strong>&lt;br&gt; up to 10 lbs</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Nursery</strong>&lt;br&gt; up to 70 lbs</td>
<td></td>
<td></td>
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<tr>
<td><strong>Grow/Finish</strong>&lt;br&gt; up to market weight</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Mature Pigs</strong>&lt;br&gt; sows, boars</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Vaccination/Management Schedule: Non-Breeding Herd

- **Unit Location:** ____________________________  **Premises ID Number:** ____________

<table>
<thead>
<tr>
<th>Date Completed (MM/DD/YY)</th>
<th>Product Name</th>
<th>Dosage</th>
<th>Route¹</th>
<th>When Given / Age Done</th>
<th>Person Responsible</th>
<th>Preharvest Withdrawal (Days)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Nursing Pigs</strong></td>
<td></td>
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<tr>
<td><strong>Weaner Pigs</strong></td>
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<tr>
<td><strong>Grower</strong> (40-100 lbs.)</td>
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<tr>
<td><strong>Finisher</strong> (100 lbs - Market)</td>
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</tr>
</tbody>
</table>
### VACCINATION/MANAGEMENT SCHEDULE: BREEDING HERD

**PQAPLUS**

Our Responsibility. Our Promise.

**PLEASE PRINT**

**Unit Location:** ____________________________  **Premises ID Number:** ____________

<table>
<thead>
<tr>
<th>Date Completed (MM/DD/YY)</th>
<th>Product Name</th>
<th>Dosage</th>
<th>Route</th>
<th>When Given / Age Done</th>
<th>Person Responsible</th>
<th>Preharvest Withdrawal (Days)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gilt Prebreeding</strong></td>
<td></td>
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<tr>
<td><strong>Sows Prebreeding</strong></td>
<td></td>
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<tr>
<td><strong>Boars</strong></td>
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<tr>
<td><strong>Gilts Prefarrow</strong></td>
<td></td>
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<tr>
<td><strong>Sows Prefarrow</strong></td>
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</tr>
</tbody>
</table>
# Drug Storage Record Inventory Sheet

**Unit Location:** ___________________________  **Premises ID Number:** ____________

**Drug Name:** ____________________________

**Inventory Stored**

<table>
<thead>
<tr>
<th>Date of Purchase (MM/DD/YY)</th>
<th>Units, Cases, etc.</th>
<th>Size, etc.</th>
<th>Person Responsible for Storage</th>
</tr>
</thead>
<tbody>
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</tbody>
</table>

**Inventory On Hand**

<table>
<thead>
<tr>
<th>Date of Inventory (MM/DD/YY)</th>
<th>Units, Cases, etc.</th>
<th>Size, etc.</th>
<th>Person Responsible for Inventory</th>
</tr>
</thead>
<tbody>
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</table>

800-456-7675 | 109
CONIFIRMATION OF
NO MEDICATIONS ADMINISTERED

I confirm that no medications were administered to pigs marketed from

Premises ID Number: _______________ Barn: ________________________________

between the following dates:

Date pigs entered barn: _______________ Date last pig exited barn: _______________

Printed Name of Barn/Site Manager: __________________________

Signature of Barn/Site Manager: __________________________ Date: _______________
Premises ID Number: _______________ Farm Name: ________________________________

This letter is to confirm that a Veterinarian/Client/Patient Relationship (VCPR) exists for the specific premises indicated above. As part of the VCPR for this premises:

1. A veterinarian has assumed the responsibility for making medical judgments regarding the health of the animal(s) and the need for medical treatment, and the client (the owner of the animal(s) or other caretaker) has agreed to follow the instructions of the veterinarian.

2. There is sufficient knowledge of the animal(s) by the veterinarian to initiate at least a general or preliminary diagnosis of the medical condition of the animal(s).

3. The practicing veterinarian is readily available for follow-up in case of adverse reactions or failure of the regimen of therapy.

Veterinarian

Printed Name: ________________________________

Signature: ________________________________ Date: ________________

Producer

Printed Name: ________________________________

Signature: ________________________________ Date: ________________
EMERGENCY ACTION PLAN

- PLEASE PRINT -

SITE INFORMATION

Unit Location: __________________________ Premises ID Number: __________________________

Owner/Operator Name: __________________________

Unit Address (including Emergency 911 Address):

_____________________________________________________________________________

_____________________________________________________________________________

_____________________________________________________________________________

Rescue/Ambulance: Phone: _________________________________________________________

Hospital or Clinic: Name: ________________________________________________________

Phone: _________________________

Veterinarian: Name: ___________________________________________________________

Phone: _________________________

Electrical Company: Name: ______________________________________________________

Phone: _________________________

Fire Department: Phone: _________________________________________________________

Police/Sheriff: Name: __________________________________________________________

Phone: _________________________

Animal Abuse Reporting: Name: _________________________________________________

Phone: _________________________

Other: Name: _________________________________________________________________

Phone: _________________________

Name: _________________________________________________________________

Phone: _________________________

Name: _________________________________________________________________

Phone: _________________________

Name: _________________________________________________________________

Phone: _________________________

A tool to help you develop your personalized emergency action plan can be found at http://eap.pork.org
<table>
<thead>
<tr>
<th>Production State</th>
<th>Product Name &amp; Concentration</th>
<th>Route</th>
<th>Dosage (ml, g/ton, etc.)</th>
<th>Preharvest Withdrawal (days)</th>
<th>Drug Purpose²</th>
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<tr>
<td>New Stock Isolation</td>
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<tr>
<td>Breeding</td>
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<td>Gestation / Prefarrow</td>
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<td>Lactation</td>
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<td>Nursing Pigs</td>
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<td>Nursery</td>
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<td>Grower (&lt;100 lbs.)</td>
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<tr>
<td>Finisher (100 lbs. to Market)</td>
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<tr>
<td>Mix Date</td>
<td>Bulk Bin</td>
<td>Medication Name &amp; Concentration per Pound</td>
<td>Pounds of Concentrate Added per Ton of Mixed Feed</td>
<td>Final Medication per Ton of Mixed Feed (g/ton)</td>
<td>Who Mixed Feed</td>
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<tr>
<td>External Biosecurity</td>
<td>Yes/No</td>
<td>Comments for Improvement</td>
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<tr>
<td>Livestock facilities are located away from other livestock facilities and major</td>
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<td>transportation routes.</td>
<td>Y</td>
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<td>Livestock buildings are locked when unattended.</td>
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<td>Signs restricting entrance and giving instructions to report to designated point are</td>
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<td>posted.</td>
<td>Y</td>
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<td>There is a designated parking area for visitors.</td>
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<tr>
<td>Premise is fenced and driveway is gated to control entry.</td>
<td>Y</td>
<td></td>
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<tr>
<td>Farm adheres to written policy regarding requirements for employees, service</td>
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<tr>
<td>personnel and visitors.</td>
<td>Y</td>
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<tr>
<td>Boots and coveralls are supplied to all visitors entering animal areas.</td>
<td></td>
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<tr>
<td>Equipment brought into facilities is cleaned and disinfected.</td>
<td>Y</td>
<td></td>
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<tr>
<td>The sources of new animals are kept to a minimum.</td>
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<tr>
<td>New animals are from a known source, have been tested and found free of the</td>
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<td>diseases of concern.</td>
<td>Y</td>
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<tr>
<td>The isolation facility is located such that direct and indirect contact between the</td>
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<tr>
<td>animals in isolation and the rest of the herd is prevented.</td>
<td>Y</td>
<td></td>
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<tr>
<td>New animals are kept separated from the resident herd, monitored for signs of illness</td>
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<tr>
<td>and exposed to the resident herd in consultation with the herd’s veterinarian.</td>
<td>Y</td>
<td></td>
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<tr>
<td>Animals that have left the herd temporarily for exhibition are handled as new</td>
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<tr>
<td>animals upon re-entering the herd.</td>
<td>Y</td>
<td></td>
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<tr>
<td>Before being exposed to the herd, new animals are immunized against diseases known</td>
<td></td>
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<tr>
<td>to be in the herd.</td>
<td>Y</td>
<td></td>
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<tr>
<td>New animals receive treatments against parasites before moving to the herd.</td>
<td></td>
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<tr>
<td>Livestock trucks deliver and load-out animals at a site remote from livestock</td>
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<tr>
<td>housing units.</td>
<td>Y</td>
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<tr>
<td>Drivers of feed and livestock trucks are instructed not to enter buildings.</td>
<td></td>
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<tr>
<td>Feed delivery trucks are clean and do not enter animal areas.</td>
<td>Y</td>
<td></td>
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<tr>
<td>Livestock trucks are cleaned and disinfected before arrival for loading-out.</td>
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<tr>
<td>Water and feed are from uncontaminated sources.</td>
<td>Y</td>
<td></td>
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<tr>
<td>Supplies of water and feed are protected from contamination during storage and</td>
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<tr>
<td>distribution.</td>
<td>Y</td>
<td></td>
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<tr>
<td>Animals are denied access to flowing water such as streams and rivers.</td>
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<tr>
<td>In confinement facilities, contact with wildlife and birds is prevented by fencing</td>
<td></td>
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</tr>
<tr>
<td>and screening.</td>
<td>Y</td>
<td></td>
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</tr>
</tbody>
</table>
## Internal Biosecurity

<table>
<thead>
<tr>
<th>Biosecurity</th>
<th>Yes/No</th>
<th>Comments for Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health of the herd is monitored by observations, testing and production</td>
<td>☑️</td>
<td></td>
</tr>
<tr>
<td>records.</td>
<td>☑️</td>
<td></td>
</tr>
<tr>
<td>Disease control/prevention programs, including deworming, vaccination and</td>
<td>☑️</td>
<td></td>
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<tr>
<td>medication protocols, are designed in consultation with a veterinarian.</td>
<td>☑️</td>
<td></td>
</tr>
<tr>
<td>Animals are housed and fed in ways to minimize stress, crowding and</td>
<td>☑️</td>
<td></td>
</tr>
<tr>
<td>fighting.</td>
<td>☑️</td>
<td></td>
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<tr>
<td>Animals are housed separately by age groups and moved using all-in/all-out</td>
<td>☑️</td>
<td></td>
</tr>
<tr>
<td>pig flow.</td>
<td>☑️</td>
<td></td>
</tr>
<tr>
<td>Pens are cleaned and disinfected between groups.</td>
<td>☑️</td>
<td></td>
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<tr>
<td>Personnel duties are assigned in a manner to minimize the risk of spreading</td>
<td>☑️</td>
<td></td>
</tr>
<tr>
<td>diseases between groups within the herd.</td>
<td>☑️</td>
<td></td>
</tr>
<tr>
<td>Sick animals are immediately treated and/or removed from groups to</td>
<td>☑️</td>
<td></td>
</tr>
<tr>
<td>treatment areas to reduce exposure to others.</td>
<td>☑️</td>
<td></td>
</tr>
<tr>
<td>Any unusual illness is immediately brought to the attention of the herd</td>
<td>☑️</td>
<td></td>
</tr>
<tr>
<td>veterinarian.</td>
<td>☑️</td>
<td></td>
</tr>
<tr>
<td>Professional pest control services are used to prevent rodent and insect</td>
<td>☑️</td>
<td></td>
</tr>
<tr>
<td>infestations.</td>
<td>☑️</td>
<td></td>
</tr>
<tr>
<td>Building design and maintenance discourage the entry and harborage of pests.</td>
<td>☑️</td>
<td></td>
</tr>
<tr>
<td>Access to feed by rodents is minimized by storage in rodent-proof</td>
<td>☑️</td>
<td></td>
</tr>
<tr>
<td>containers and the prompt clean-up of spills.</td>
<td>☑️</td>
<td></td>
</tr>
<tr>
<td>Moribund and dead animals are immediately removed from the animal area.</td>
<td>☑️</td>
<td></td>
</tr>
<tr>
<td>Dead animals are disposed of promptly in an approved manner to prevent</td>
<td>☑️</td>
<td></td>
</tr>
<tr>
<td>spread of disease, cannibalism and the attraction of scavengers.</td>
<td>☑️</td>
<td></td>
</tr>
<tr>
<td>Access to manure by animals is reduced by timely cleaning and removal.</td>
<td>☑️</td>
<td></td>
</tr>
</tbody>
</table>

## Prevention of Foreign Animal Diseases / Agroterrorism

<table>
<thead>
<tr>
<th>Prevention of Foreign Animal Diseases / Agroterrorism</th>
<th>Yes/No</th>
<th>Comments for Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employees are trained to be vigilant and report</td>
<td>☑️</td>
<td></td>
</tr>
<tr>
<td>suspicious visitors, activities or materials.</td>
<td>☑️</td>
<td></td>
</tr>
<tr>
<td>Unusual or suspicious events are recorded.</td>
<td>☑️</td>
<td></td>
</tr>
<tr>
<td>Premises are well-illuminated at night.</td>
<td>☑️</td>
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</tr>
<tr>
<td>Premises are under electronic surveillance (video</td>
<td>☑️</td>
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<tr>
<td>cameras, motion detectors, alarms) at strategic</td>
<td>☑️</td>
<td></td>
</tr>
<tr>
<td>places to aid in safeguarding workers, animals,</td>
<td>☑️</td>
<td></td>
</tr>
<tr>
<td>facilities and equipment.</td>
<td>☑️</td>
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</tr>
<tr>
<td>The farm water system is protected from vandalism.</td>
<td>☑️</td>
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<tr>
<td>Pesticides, chemicals and fertilizers are secured.</td>
<td>☑️</td>
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</tr>
<tr>
<td>International visitors are required to have at least</td>
<td>☑️</td>
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</tr>
<tr>
<td>5 days free of animal contact before farm entry.</td>
<td>☑️</td>
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</tr>
<tr>
<td>International visitors must wear farm-supplied</td>
<td>☑️</td>
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<tr>
<td>clothing and boots.</td>
<td>☑️</td>
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<tr>
<td>Personal items that cannot be disinfected are</td>
<td>☑️</td>
<td></td>
</tr>
<tr>
<td>prohibited in the production areas.</td>
<td>☑️</td>
<td></td>
</tr>
<tr>
<td>Prevention of Foreign Animal Diseases / Agroterrorism</td>
<td>Yes/No</td>
<td>Comments for Improvement</td>
</tr>
<tr>
<td>-----------------------------------------------------</td>
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<td>--------------------------</td>
</tr>
<tr>
<td>Unnecessary animal contact by visitors is prohibited.</td>
<td>❑ Y ❑ N</td>
<td></td>
</tr>
<tr>
<td>Visitors are restricted to those with a verified need to be there. Visitors are always with an escort.</td>
<td>❑ Y ❑ N</td>
<td></td>
</tr>
<tr>
<td>Imported foods are prohibited.</td>
<td>❑ Y ❑ N</td>
<td></td>
</tr>
<tr>
<td>Job applicants are thoroughly screened; references and background are checked.</td>
<td>❑ Y ❑ N</td>
<td></td>
</tr>
<tr>
<td>New employees are closely supervised.</td>
<td>❑ Y ❑ N</td>
<td></td>
</tr>
<tr>
<td>Requests for tours and sensitive information are denied to people you don't know.</td>
<td>❑ Y ❑ N</td>
<td></td>
</tr>
<tr>
<td>The facility has an emergency action plan.</td>
<td>❑ Y ❑ N</td>
<td></td>
</tr>
<tr>
<td>Contact has been established with local law enforcement officials.</td>
<td>❑ Y ❑ N</td>
<td></td>
</tr>
<tr>
<td>Suspicious activities are promptly reported to appropriate officials.</td>
<td>❑ Y ❑ N</td>
<td></td>
</tr>
<tr>
<td>Unusual or severe animal diseases are reported to your veterinarian or state/federal animal health officials promptly.</td>
<td>❑ Y ❑ N</td>
<td></td>
</tr>
</tbody>
</table>
To be completed by Assessor:

Site ID: ____________________________
Assessor name: ____________________________
Date of visit: ____________________________

Description of area(s) that need improvement:

To be completed by Producer:

Please work with your PQA Plus® Advisor to document how the noncompliant issue has been corrected or that there is a plan in place to correct the issue. Describe how the issue(s) has been corrected or the plan and timeline in place for correcting the issue.