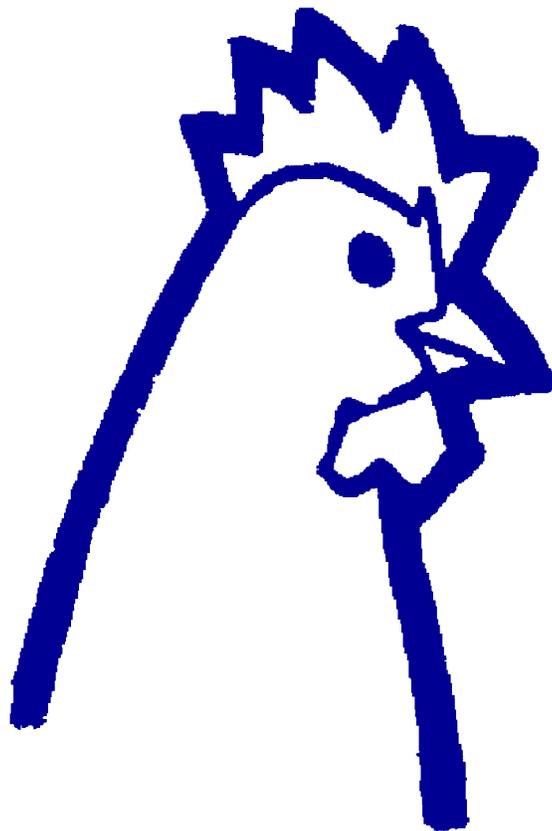


Judicious Use of Antimicrobials for
Poultry
Producers



**Principles of Judicious Therapeutic Use of
Antimicrobials (Antibiotics)**
Their Application for Producers in the Poultry Industry

Introduction

The principles of judicious therapeutic antimicrobial use were developed and approved by the American Veterinary Medical Association to serve as a guide for veterinarians to use therapeutic antimicrobials (antibiotics) in order to maximize therapeutic efficacy while minimizing the development of resistance. The AVMA defines therapeutic as use for the treatment, control, and prevention of bacterial disease.

Antibiotic resistance is a global problem that affects both humans and animals. The development of resistance is a consequence of the use of antimicrobials. Concerns about the use of antibiotics in food producing animals involve food safety issues because meat products from animals have been identified as transfer vehicles for food borne illness in humans. It is imperative that everyone involved in food animal production, veterinarians and producers, as well all human health care providers work together in minimizing the development of antibiotic resistance.

This document is written for use by producers of poultry. All producers involved in poultry production should familiarize themselves with the principles of judicious therapeutic use of antibiotics to insure that a cooperative effort is established by the producer and veterinarian in the control and antibiotic treatment of bacterial diseases of poultry.

The following principles of judicious therapeutic antibiotic use

should be considered by producers to maximize the benefits of therapeutic antibiotic use while minimizing the development of resistance.

Judicious Use Principles for Poultry Producers

Preventive strategies, such as appropriate husbandry and hygiene, routine health monitoring, and immunization, should be emphasized.

The foundation of the success in the poultry industry is through effective management practices that prevent disease. The foundation of biosecurity (preventative disease management) starts with the producer. Farms utilizing all-in-all-out production minimize the presence of multiple ages of flocks on farms to help in disease prevention. Biosecurity programs on poultry farms should be in place to help prevent the introduction of diseases. The appropriate use of coveralls, boots and head coverings prevents the introduction and spread of disease within and between farms. Producers should also work with veterinarians and health specialists to establish sound disease prevention programs based on vaccination strategies to reduce disease outbreaks in poultry. The poultry industry is the leader in novel procedures for vaccination of large numbers of poultry. Breeder and meat production flocks should be monitored for protective response to vaccinations. Serological monitoring of disease exposure forms the basis of strategic vaccination programs. An effective way of minimizing antibiotic resistance is to avoid antibiotic use through the prevention of disease exposure and/or vaccination to achieve protection against disease outbreaks.

Other therapeutic options should be considered prior to

antibiotic therapy.

Poultry producers should approach the treatment of diseases with antibiotics very cautiously. Because of the cost of disease treatment with antibiotics, therapeutic antibiotic intervention should be used only as one tool to treat active disease. Management adjustments should be made when disease outbreaks occur by reacting to environmental temperature, ventilation, and litter moisture to minimize the impact of any disease condition in flocks. Supportive therapy with vitamins and electrolytes may be utilized in some cases of disease outbreaks to help avoid the use of antibiotics. All management and non-antibiotic intervention strategies should be explored and a veterinarian or health specialist consulted prior to the use of antibiotics.

Judicious use of antibiotics, when under the direction of a veterinarian, should meet all requirements of a valid veterinarian-client-patient relationship.

A valid veterinarian-client-patient relationship (VCPR) must be established at any time prescription antibiotics are used or any antibiotic is used **not** in accordance to labeled directions. It is against federal law to use prescription antibiotics or antibiotics in an extra-label manner without an established valid VCPR. A valid VCPR means that certain conditions are met prior to the initiation of treatment:

- 1) **A veterinarian must be involved.** The veterinarian assumes responsibilities in making a clinical judgment and/or diagnosis in the flock. He/she is knowledgeable about the health status of the flock. The producer

agrees to follow the directions of veterinarian;

2) The veterinarian has sufficient knowledge of the flock, has recently seen the flock, and is knowledgeable with regards to the management of the flock;

3) The veterinarian is available for consultation and follow-up evaluation of the antibiotic treatment.

The VCPR should be established and followed in all flocks prior to antibiotic therapy. Poultry producers in integrated poultry companies should consult the company veterinarian prior to the initiation of any antibiotic treatment. Veterinarians should closely monitor antibiotic use in their poultry flocks. They maintain close contact with service technicians and managers related to the use of antibiotics. Antibiotics should always be used under the direction and knowledge of the company veterinarian or veterinary consultant.

Prescription, Veterinary Feed Directive, and extra-label use of antibiotics must meet all the requirements of a valid veterinarian-client-patient relationship.

At the present time, no feed additives are approved for prescription or by veterinary feed directive in poultry. If these products are approved in the future, strict compliance with regulations must be followed with the same policies set for other antibiotic use.

Extra-label antibiotic therapy must be prescribed only in accordance with the Food, Drug, and Cosmetic Act and its

regulations.

In 1996, the Animal Medicinal Drug Use Clarification Act (AMDUCA) amendments to the Food, Drug and Cosmetic Act became federal law. This essentially legalized extra-label antibiotic use by veterinarians (not for producers). It defined the valid VCPR as discussed previously. Veterinarians in integrated poultry companies strive to use antibiotics at labeled indications and dosage. When prescribing extra-label use of antibiotics, a veterinarian performs it only in compliance with AMDUCA and its extralabel drug use regulation.

Veterinarians should work with those responsible for the care of poultry to use antibiotics judiciously regardless of the distribution system through which the antibiotic was obtained.

Poultry producers are responsible for the production of poultry on their farms, however, information provided by live production managers, veterinarians and/or best management practices that have been established by the National Chicken Council and National Turkey Federation should be followed. Veterinarians should work closely with producers, service technicians, service persons, and production managers to insure responsible use of therapeutic antibiotics. A veterinarian, however, should always be responsible for the initiation and evaluation of antibiotic therapy.

Regimens for therapeutic antibiotic use should be optimized using current pharmacological information and principles.

Continuing education programs by the American Veterinary Medical Association, American Association of Avian

Pathologists and technical updates from pharmaceutical technical service veterinarians, keep poultry veterinarians and managers up to date on current information regarding antibiotic use. Producers should use these individuals as resources regarding current information on antibiotic use.

Antibiotics considered important in treating refractory infections in human or veterinary medicine should be used in animals only after careful review and reasonable justification. Consider using other antibiotics for initial therapy.

Poultry veterinarians and producers should recognize the importance of antibiotic resistance in both human and veterinary medicine. Important antibiotics used in both poultry and humans are to be held in reserve to minimize the rate of resistance development to these important compounds.

Use narrow spectrum antibiotics whenever appropriate.

Antibiotics usually are either broad or narrow in their spectrum of activity. A broad-spectrum antibiotic tends to be active against a broader range of bacteria including both gram negative and gram positive organisms (i.e., bacteria that causes colibacillosis, cholera, etc) while narrow spectrum antibiotics are active against either gram positive (for example *Staphylococcus*) or gram negative (for example *E. coli*). Broad-spectrum antibiotics tend to lead to the development of resistance in bacteria that are **not** the ones involved in the infection you are treating. To minimize the development of broad-spectrum resistance, narrow spectrum, bactericidal antibiotics should be chosen when culture and sensitivity results suggest therapeutic success. Veterinarians will advise the producer in the use of the appropriate antibiotics.

Utilize culture and susceptibility results to aid in the selection of antibiotics when clinically relevant.

Before antibiotic therapy is initiated, based on mortality and

morbidity, some typically affected birds should be humanely euthanized and samples taken for bacterial culture and sensitivity testing. This can be performed at regional State diagnostic laboratories, universities or in integrated companies' diagnostic facilities. This is common practice in the poultry industry today. A poultry veterinarian uses this information to make informed decisions regarding the appropriate antibiotic therapy to be initiated. This information should be kept by the producer and veterinarian as part of the flock and farm history to determine changes in antibiotic susceptibility patterns on farms.

Therapeutic antibiotic use should be confined to appropriate clinical indications. Inappropriate uses such as for uncomplicated viral infections should be avoided.

Viral, fungal and other non-bacterial infections should not be treated with antibiotics. Producers and veterinarians should pay special attention to disease outbreaks to determine if, and when antibiotic therapy is warranted. Every effort should be made to address disease outbreaks with other disease management strategies prior to the initiation of antibiotic therapy.

Therapeutic exposure to antibiotics should be minimized by treating only for as long as needed for the desired clinical response.

Due to the cost of antibiotic use in poultry and limited availability of antibiotics in poultry, producers should work with veterinarians and service technicians to closely monitor antibiotic treatments and minimize antibiotic therapeutic exposure in flocks. Producers should use antibiotics according to labeled indications that include the treatment period. Any extra-label

use of antibiotics should be in accordance with a VCPR and within AMDUCA regulations. Producers should avoid prolonged use of antibiotics but should treat for a period sufficient to achieve the desired clinical outcome.

Limit therapeutic antibiotic treatment to ill or at risk animals, treating the fewest animals indicated.

In a poultry disease outbreak, all birds are not infected at the same time with the disease to which antibiotic therapy is warranted. However, birds in the same house are “at risk” to the same primary disease that results in secondary bacterial infections. Only birds within the same house that are ill or at risk should be treated. Producers should not treat adjacent houses that are not clinically affected with disease. If therapeutic antibiotic intervention isn’t cost effective and a low number of birds are infected per house, the cost of treatment will usually dictate that no antibiotics be used at all.

Minimize environmental contamination with antibiotics whenever possible.

Every effort should be made to avoid environmental contamination with antibiotics. The cost of antibiotics generally ensures that the antibiotics be used specifically in the diseased flock and not introduced into the environment unnecessarily. Properly dispose of unused antibiotics.

Accurate records of treatment and outcome should be used to evaluate therapeutic regimens.

Record keeping is an integral part of the integrated poultry industry. Production records including medication costs,

evaluation and outcome are kept and placed in the history of the farm for future reference in determining any changing antibiotic susceptibility patterns. Producers should also maintain their own records of flock treatments (product used, date of use, duration of treatment, dosage, outcome of treatment, etc.) for future reference.

Conclusion: The overall goals of judicious therapeutic antibiotic use and the principles explained in the publication are: 1) to provide information to producers regarding the appropriate use of antibiotics in poultry; 2) minimize antibiotic resistance development; 3) minimize the transfer of resistant bacteria to humans; and, 4) provide insight and bring awareness to producers of the global problem of antimicrobial resistance. The producer and veterinarian should work closely when antibiotic therapy is needed in a flock and both must continue to work toward ensuring a safe food supply for consumers.

Other Sources of Information:

American Association of Avian Pathologists Guidelines for Judicious Therapeutic Antimicrobial Use in Poultry. American Association of Avian Pathologist. New Bolton Center. 382 W Street Road, Kennett Square, PA, 19348. Phone: 610-444-4282. (Also available at <http://www.avma.org/scienact/jtua/poultry/poultry00.asp>)

National Chicken Council Drug Management Guide. National Chicken Council. 1015 Fifteenth Street NW, Suite 930.

Washington, DC 20005-2905. Phone 202-296-2622

National Turkey Federation Best Management Practices.
National Turkey Federation. Suite 400, 1225 New York Ave., NW
Washington, DC 20005; Phone 202-898-0100



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