

# The Use of Antimicrobials in the Poultry Industry

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# AMU IN POULTRY

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- Therapeutic uses:
  - Disease prevention, treatment & control.
- Treatment:  
the administration of an antimicrobial to those animals within the group with evidence of infectious disease.
- Control (metaphylaxis):  
the use of antimicrobials to reduce the incidence of infectious disease in a group of animals that already has some individuals with evidence of infectious disease or evidence of infection.
- Prevention (prophylaxis):
  - the administration of an antimicrobial to a group of animals, none of which have evidence of disease or infection, when transmission of existing undiagnosed infections, or the introduction of pathogens, is anticipated based on history, clinical judgement or epidemiological knowledge.

# DRUG USE BY THE POULTRY INDUSTRY

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- Poultry industry vertically integrated.
- Poultry companies acquire breeders from primary breeders and produce their own chickens and turkeys.
- Poultry companies supply baby poultry to contract producers, they also supply feed, technical and veterinary support and at the end buy the poultry flocks from the producers.

## DRUG USE BY THE POULTRY INDUSTRY

- Contract producers are not allowed to give anything to their flocks unless approved by the poultry company.
- Poultry company veterinarians design vaccination and disease prevention and treatment programs and also visit farms regularly (VCPR).
- Poultry company veterinarians are called to check on sick flocks and also use assistance from field techs or allied industry veterinarians.

# DRUG USE BY THE POULTRY INDUSTRY

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- The majority of FDA-approved drugs used in poultry production are:
  - Antimicrobials
    - Antibiotics.
    - Sulfonamides.
  - The oral route is the most frequently used method of administration:
    - Drinking water.
    - Feed.
  - Rarely parenteral route or other routes like “*in-ovo*”.

# AMU IN POULTRY

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- Commercial operations have oversight by licensed veterinarians:
  - Develop health & disease prevention plans & oversee drug & AMU.
- Commercial poultry companies administer AFAs as per label instructions.
- Since 2014 poultry industry embarked in collaborative program with USDA-NARMS to assess AMU & AMR at the farm over time.

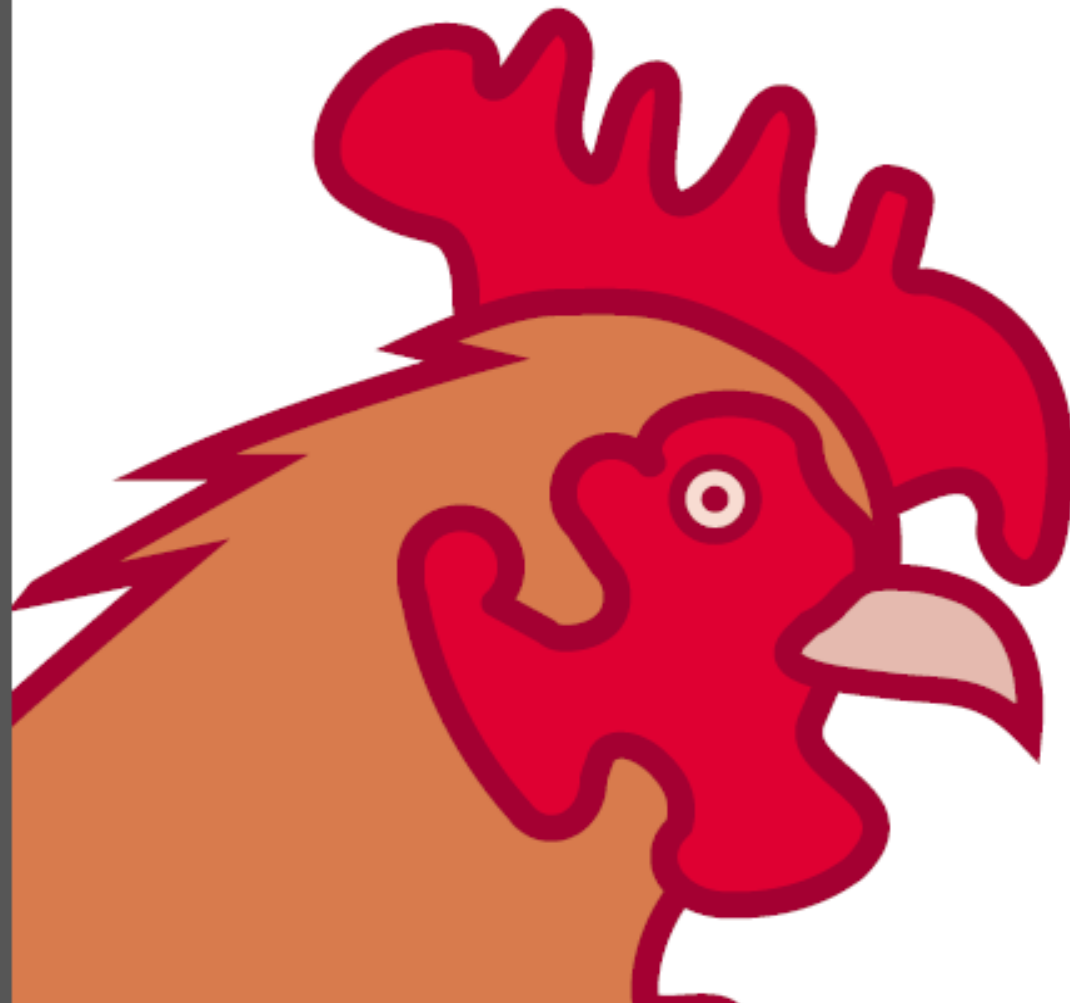
# AMU IN POULTRY

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- All MIAs are used only for disease treatment, prevention or control
- All MIAs are under strict veterinary oversight (Rx or VFD).
- The industry has been responsive to changing regulations and consumer concerns.



Judicious Use of Antimicrobials for  
**Poultry**  
Veterinarians



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## AAAP-AVMA Guidelines for Judicious Therapeutic Use of Antimicrobials in Poultry

The Principles of Judicious Therapeutic Use of Antimicrobials of the American Veterinary Medical Association (AVMA) are the framework for the Guidelines for Judicious Therapeutic Use of Antimicrobials in Poultry of the American Association of Avian Pathologists (AAAP). The purpose of this document is to provide information for field veterinarians on intervention strategies for common bacterial diseases of chickens and turkeys. This working document will be updated as needed by the American Association of Avian Pathologists Committee on Drugs and Therapeutics and the Committee on Food Safety.

Comment on  
this policy  
(AVMA Members Only)

The overarching goals of veterinary poultry practice are to address the health and wellness of poultry while protecting food safety and public health. When the decision is reached to use antimicrobials, veterinarians should strive to optimize therapeutic efficacy and minimize resistance to antimicrobials to protect public and animal health. Use of antimicrobials can be minimized through carefully planned and executed preventative practices, including vaccination programs, biosecurity, automated ventilation controls, and conventional poultry husbandry and management programs. These programs are the pillars of sound production practices, and antimicrobial therapy provides an important tool aiding veterinarians in maintaining animal health and welfare.

### Disease Prevention and Diagnosis

To ensure proper use of antimicrobials in poultry, focus should be placed on disease prevention strategies. The poultry environment should be managed to reduce morbidity and mortality rates. The birds' environment should be optimized at all times. House environmental conditions should be altered frequently and as needed based on the appearance and activity of the birds. Noninfectious factors that predispose birds to disease include chilling, heat stress, inappropriate humidity, high ammonia concentrations, wet litter, high dust levels, very short down time between flocks and unpalatable or unsanitary feed or water. Ventilation must be managed to minimize the negative impact from ammonia, dust, excessive humidity, or combustion gases on primary defense mechanisms in the birds. Likewise, ventilation should be optimized for litter moisture control to reduce bacterial exposure and control ammonia concentrations. To assess the progression of disease within a flock, removal of morbid birds may be required. Diagnostic testing and troubleshooting procedures should be initiated to identify the primary microbial challenge and any predisposing conditions. Strict biosecurity should be maintained to prevent spread to other houses on the same farm, and immunization should be used when warranted.

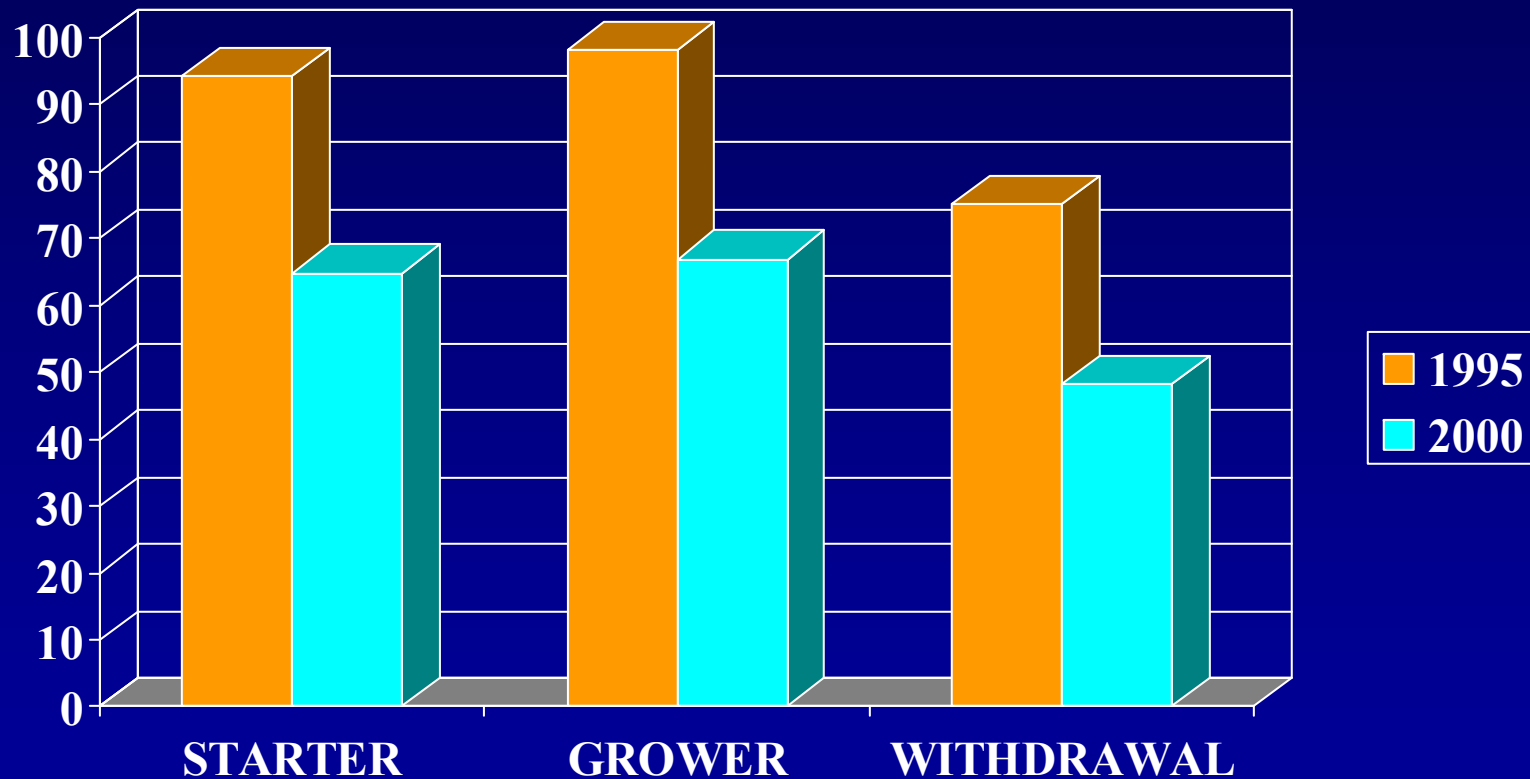
### Therapeutic Antimicrobials Available for Use in Poultry

The classes of antimicrobials (animal drugs given for the treatment, control, or prevention of confirmed bacterial disease and administered through feed, water, or injection) that are currently approved by the Food and Drug Administration (FDA)<sup>1</sup> for use in

ANTIMICROBIAL CLASS	MEDICAL IMPORTANCE (WHO)
Aminocyclitols/Coumarins	Important
Cyclic polypeptides	Important
Streptogramins	Highly important
Lincosamides	Highly important
Sulfonamides	Highly important
Tetracyclines	Highly important
Aminoglycosides	Critically important
Amphenicols	Critically important
$\beta$ -lactams	Critically important
Cyclic esters	Critically important
Macrolides	Critically important
Polymyxins	Critically important
Fluoroquinolones	Critically important

# DOCUMENTED DECLINES ON USAGE OF IN-FEED ANTIMICROBIALS

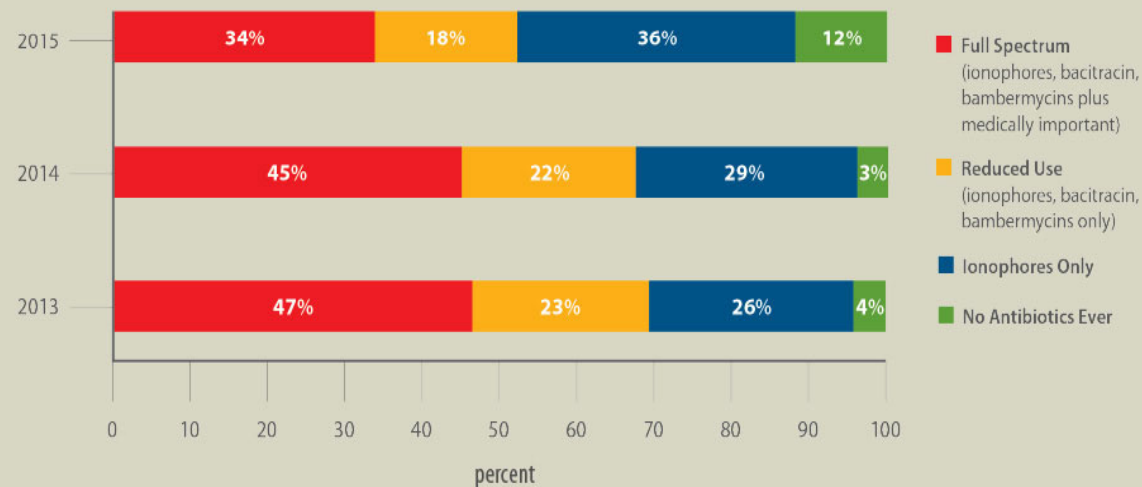
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Source: Chapman and Johnson, 2002, Poultry Sci. 81:356-364

# Programs that Restrict AMU in Broiler Production

Figure 1. US broiler-feed tonnage by program type, 2013-2015



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POULTRYHEALTHTODAY.COM

Trends: 2013 – 2015, G. Rennier, 2016.

# THINGS POULTRY PRODUCERS HAVE DONE TO REDUCE AMBU

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- Improved sanitation, biosecurity & best management practices at the breeder farms.
- Vaccinated breeders to transfer passive/protective immunity to the progeny.
- Improve sanitation at the hatchery.
- Improved sanitation, biosecurity & best management practices at the chicken & turkey farms.
- Vaccinated chickens & turkeys to prevent immunodepressive & respiratory diseases.

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# Antimicrobial Stewardship

## Definition and Core Principles

### Antimicrobial Stewardship for Veterinarians Defined

Antimicrobial stewardship refers to the actions veterinarians take individually and as a profession to preserve the effectiveness and availability of antimicrobial drugs through conscientious oversight and responsible medical decision-making while safeguarding animal, public, and environmental health.

Comment on  
this policy

(AVMA Members Only)

### Core Principles of Antimicrobial Stewardship in Veterinary Medicine

Antimicrobial stewardship involves maintaining animal health and welfare by implementing a variety of preventive and management strategies to prevent common diseases; using an evidence-based approach in making decisions to use antimicrobial drugs; and then using antimicrobials judiciously, sparingly, and with continual evaluation of the outcomes of therapy, respecting the client's available resources.



# ANTIMICROBIAL STEWARDSHIP

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- Definition:

The actions veterinarians take individually and as a profession to preserve the effectiveness and availability of antimicrobial drugs through conscientious oversight and responsible medical decision-making while safeguarding public, animal and environmental health.

AVMA, 2018



# ANTIMICROBIAL STEWARDSHIP

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- Core principles:
  1. Commitment to stewardship.
  2. Advocate for a system of care to prevent common diseases.
  3. Select and use antimicrobial drugs judiciously.
  4. Evaluate antimicrobial drug use practices.
  5. Educate and build expertise.

AVMA, 2018

## AAAP Antimicrobial Strategy for Stewardship Talking Points

1. AAAP has always been committed to the responsible use of antibiotics in poultry and other food-producing animals, and supports FDA's recently released 5-year plan strategy
2. AAAP has long promoted the effectiveness and availability of antimicrobial drugs through conscientious oversight and responsible medical decision-making to safeguard poultry, public, and environmental health. In fact, AAAP was the first organization to develop judicious use guidelines and the implementation of these principles among our membership
3. AAAP members involved with making antibiotic use decisions have had almost total control of antibiotic stewardship in poultry production due to the unique integration system under which the industry operates
4. AAAP is also committed to the collection and tracking of on-farm antimicrobial usage data; many veterinarians within our organization are assisting with a project to quantify on-farm antimicrobial usage within the U.S. poultry industry. Having said this, any correlation with on farm antimicrobial use and end-product microbial sensitivity results needs to be properly interpreted.
5. AAAP supports the concept of defined duration of use for water soluble antimicrobials that lack such label information, but we wish to retain our AMDUCA privileges for extralabel drug use based on our clinical judgement.
6. AAAP wholeheartedly endorses all forms of medically important antimicrobials be placed under the supervision of licensed veterinarians

# MOST IMPORTANT TRIAD (DAD)

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