Raising Awareness for Prudent Use of Antibiotics in Food Animals

Position paper of the global Alliance for the Prudent Use of Antibiotics (APUA)
Prepared by Mary Wilson, M.D. and Melanie Tam

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ANTIBIOTICS
- Therapeutic Use
- Non-therapeutic Use (e.g. Prophylaxis, Growth Promotion)

Agriculture
- Farm Dwellers: Contact with food animals
- Meat and Dairy Products
  - Wildlife
  - Soil
  - Fruits and Vegetables
  - Domestic Pets

Aquaculture
- Contamination: Spread of Feces and Manure
  - Wells/Rivers/Streams
  - Fish Products

PEOPLE
Figure 1 Post-therapeutic effects of antibiotic dispersion.

(a) While on antimicrobial therapy, the individual (e.g., person or animal) is a focal point for a high concentration of both antibiotic (red shading) and resistant bacteria (black dots) that are selected and generated from its use.

(b) Over time, resistant bacteria spread to local contacts and antibiotic enters the environment through waste and water disposal (for example, from animals) or sewage (from people). If several individuals are treated, however

(c), a higher density of antimicrobial and resistant organisms is established in the same environment

(d). The selective process is continuous, occurring both during and after therapy.
Antibiotic resistance genes have spread to more than a quarter of the world’s infectious bacterial species.*

Countries with higher rates of antibiotic use also have more antibiotic resistance bacteria.**

Human Health Consequences of Antibiotic Overuse in Food Animals

- Increased vulnerability to infections
- Increased severity of illness
- Increased likelihood of treatment failure

Defining Prudent Use

“the cost-effective use of antimicrobials which
• maximizes clinical therapeutic effect
• minimizes drug-related toxicity and
• minimizes the development of antimicrobial resistance.”

(World Health Organization, 2001)

The right antibiotic for the right condition for
the right amount of time.
Clinical Infectious Diseases

The Need to Improve Antimicrobial Use in Agriculture

Ecological and Human Health Consequences

A Supplement to Clinical Infectious Diseases
A Report by the Alliance for the Prudent Use of Antibiotics
Ensuring Prudent Use: Recommendations for Policymakers

- Antimicrobial agents should not be used in agriculture in the absence of disease.

- Use of antimicrobials for economic purposes such as growth promotion or feed efficiency should be discontinued.

- Antimicrobials should be administered to animals only when prescribed by a veterinarian.

Ensuring Prudent Use:
Recommendations for Policymakers

- **National-level quantitative data on antimicrobial** use in agriculture should be made available to inform public policy.

- **New risk assessment models** should be developed. **Regulatory agencies** should consider the **ecology of antimicrobial resistance** in assessing human health risk associated with antimicrobial use in agriculture.

- **National surveillance programs** to track antibiotic use and antibiotic resistance in food animal production should be improved and expanded.
Ensuring Prudent Use: Recommendations for Policymakers

- **Alternative infection prevention methods** should be instituted to reduce the need for antibiotics.
  - Improved hygiene and health management on farms
  - Use of probiotics or competitive exclusion products
  - Vaccination

Ensuring Prudent Use: Recommendations for Policymakers

- Introduce **pre-licensing safety evaluation** of antimicrobials.

- **Monitor resistance** to identify emerging health problems.

Antibiotics Should Be Given Their Own Drug Category

- Antibiotics are like no other drug category due to broad impact on the environment

- Individual misuse has consequences on society at large

- Allows special considerations for these drugs in terms of:
  - Incentives to industry to develop new drugs, e.g. extended patent life
  - Post-marketing surveillance to curb resistance, e.g. tax reliefs
  - Preservation of their efficacy through combined efforts of producers and consumers

Urgent Need for Action

Improved surveillance and national regulation is needed in both human medicine and food animal production to ensure that antibiotics are used prudently.

Because animals far outnumber humans worldwide, the misuse and overuse of antibiotics in food animal production has a broad impact on the environment.

National authorities, veterinarians, physicians, and farmers all have a role in “preserving the power of antibiotics®.”

For more background information, see APUA’s ROAR and FAAIR projects on www.apua.org