A Sea Change in the Perception of Antibiotic Use in Animal Agriculture in the U.S.

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Antibiotic Use in the U.S.

- Treatment of ill animals
- Control and prevention of disease
- Growth promotion

- ~40% of use is with non-medically important drugs
  - ~60% of drugs are considered medically important
- 97% of all use is without a veterinary prescription
  - Most under direction of diet formulator (nutritionist)
Perspectives

- Historical perspective of many:
  - Once the Food and Drug Administration registered a drug, it was considered safe unless proved otherwise
  - Decisions had to be empirically driven
    - Observed scientific evidence
    - Little consideration of values in policy making
  - Very much ‘anti-precautionary principle’
    - The precautionary principle viewed by some as the antithesis of sound policy making
Strength of Evidence

[Diagram showing evidence levels from bottom to top: Invitro "test tube" research, Animal Research, Ideas, Opinions, Editorials, Case Reports and Series, Cross Sectional, Cohort, Randomized Controlled Trial, Systematic Review/Meta-Analysis, at the top.]

https://perioatuit.files.wordpress.com/2013/05/evidence-pyramid.jpg
Perspectives

• Gradual change in perspective of the primacy of evidence in policy to preserve antibiotics:
  • FDA: To preserve the effectiveness [of antibiotics], we simply must use them as judiciously as possible
    • Consideration of what is judicious (or injudicious) is not solely evidence-based
    • A consideration of what is right and wrong
      • Establishes a new ethical framework of what is considered ethical veterinary practice
  • Societies trust in science/scientists seems to have also changed
Trust in Science

• Q: Why is society so distrusting of science?

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- **A:** We need to better educate society
• Q: Why is society so distrusting of science?  
  – A: We need to better educate society  
• HMS: ‘why [are] scientists inherently more trusting’?

Action

• Despite the uncertainty, it is clear action is needed (and society now demands action) to combat AMR

• Protect
  – Public health
  – Animal health
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Judicious Use or Stewardship

- Focus has been on establishing judicious use
- Realization that the antibiotics we have today are largely those we will have in for years to come
  - MDR in target animal isolates
- How do we protect antibiotic efficacy into the future
- Shift from thinking about judicious use to thinking about stewardship
Action

- FDA removed in-feed fluoroquinolones
- FDA limited ELDU of cephalosporins
- FDA developed plan to remove production claims medically important antibiotics
  - GFI 209/213 (Dec, 2016)
- FDA to put majority of medically important drugs under supervision of veterinarians
  - VFD, prescription
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Medically important drugs under the supervision and order of a veterinarian. The veterinarian must have a defined relationship with the farm.

Most under direction of diet formulator (nutritionist)
U.S. Actions

• The regulatory approach is too slow for some
  – OR does not meet their expectations
  – Or does not meet their clients’ expectations
In discussing FDA's GFI 209/213 ‘To preserve the effectiveness, we simply must use them as judiciously as possible’ – Joshua Sharfstein, Deputy Commissioner of FDA

- GFI 209 is not science based, it is about judiciousness – That is, an ethical framework of what is considered proper and improper veterinary practice

**Imperfect Science**

- **BUYING LOCAL**
  - We serve more local produce than any restaurant company in the U.S.
  - Learn more

- **GIVING THEM SPACE**
  - We’re serious about pasture-raised animals that have room to be animals.
  - Learn more

- **RESPECTING THE SOIL**
  - We partner with farms that prioritize the long-term health of their land.
  - Learn more

- **HEALTHY LIVESTOCK**
  - There’s no place for nontherapeutic antibiotics and synthetic hormones on the farms that produce our ingredients.
  - Learn more

**ENVIRONMENT**
In discussing FDA’s GFI 209/213 ‘To preserve the effectiveness, we simply must use them as judiciously as possible’ – Joshua Sharfstein, Deputy Commissioner of FDA – GFI 209 is not science based, it is about judiciousness – That is, an ethical framework of what is considered proper and improper veterinary practice

Imperfect Science
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100% all-natural Angus beef. No hormones and no antibiotics ever. Our proprietary Shack blend is freshly ground. All burgers are cooked medium unless otherwise requested, served on a non-GMO Martin’s Potato Roll. Add lettuce, tomato, pickle or onion – your choice! All you veggie-lovers, check out our ‘Shroom Burger which stars a whole portobello mushroom roasted low and slow.
From Discussion of Judicious Use to Stewardship

McDonald’s Global Vision for Antimicrobial Stewardship in Food Animals*

“Preserving antimicrobial effectiveness in the future through ethical practices today”

As the body of scientific evidence grows, and scientific consensus emerges, we recognize the importance of continuing to evolve our position on antimicrobial use. In 2014, McDonald’s assembled a team of experts from around the world to study, debate and comment on antimicrobial use in food animals. These experts represented veterinarians, physicians, academicians, clinical pharmacologists, epidemiologists, ethicists, animal health and welfare experts and other food animal production experts, and developed recommendations for antimicrobial stewardship in food animals, building on McDonald’s 2003 global policy on antibiotic use in food animals.

- Preserving antimicrobial effectiveness in the future through ethical practices today
  1. Prohibit ABX food animals that are by WHO definition “critically important” to human medicine, and not presently approved for veterinary use.
  2. Use in veterinary-developed animal health care program.
  3. Prohibit the use of any medically important antimicrobials for growth promotion in food animals.
  4. Utilize animal production practices that reduce, and where possible eliminate, the need for antimicrobial therapies.
Summary

• Rapid change in the U.S. over the past 5 years
• Antibiotics continue to be critically important for animal and human health
  – Few new classes in discovery and development
• A growing desire to become better ‘stewards’ of the ones we have
  – Ought to find ways to use less (but zero should never be mandated [from HMS])
• A careful balance of science and moral/ethical values is needed to achieve goals and avoid unintended consequence
• ELIVIA
• Organizers of SteakExpert
• Contributors
  • Patrice Arbault, Mike Apley, Morgan Scott, etc.
• Texas Tech team
• Funding
  • Beef Checkoff
  • Various USDA grants and cooperative agreements
• Industry partners
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