



Foundation for Food and Agriculture Research (FFAR)
Antibiotic Stewardship Workshop
November 2, 2017. Dulles Hyatt Regency.

Discussion Worksheet Outcomes

What research goals or questions could be addressed through a pre-competitive research consortium?

1. Prescriber tools

- Decision trees
- Appropriate use for prevention purposes
- Clinical guidelines, case studies, rapid diagnostics and additional data (PK, PD, MICs, and clinical effectiveness) to support veterinary decision-making
- Antimicrobial susceptibility testing and breakpoint setting
- Use of vet diagnostic lab antimicrobial sensitivity testing (AST) reports by practitioners to choose Abx
- HACCP-like guidelines for specific scenarios/commodities

2. Innovations

- Rapid diagnostics: specialized, fast, easy/advanced sampling, ideally pen-side or animal-side
- Alternatives--- phages, probiotics, etc.
- Cecal isolates→ what's in there? Genome sequencing
- Vaccines (especially "one shot vaccines")
- Immunopotentiators
- How do you to bring alternatives to the farmer/veterinarian?

3. Epidemiological/Biological Questions

- How to avoid unintended effects in the gut
- Animals as an amplifier of human MDR bacteria?
- A better understanding of immunology, especially in poultry
- Development of common metrics
- Impact of early life treatments
- If antibiotic use is reduced, what are the impacts on animal health and welfare, and how does that impact food safety & economics of production?
- How to best quantify impact on animal health in welfare, and human health
- How quickly can resistance change?
- How does ABF production impact resistance/resistome?



- Could resistance genes be deleted?
 - Co-selection not well-understand
 - Microbiome: host, environment, disruption (not just due to antibiotics treatment)
 - Mitigation processes to further minimize contamination of food animal products with bacteria or other microbes
 - Waste (manure, water, etc.) management interventions/ mitigations
 - Are there ways to inactivate drugs in the gut?
4. Economics and behavioral sciences
- Why are antibiotics are used, or not used, in different scenarios?
 - How do you incentivize behavior change?
 - Determine best practices (quality assurance programs are an example) and economic impacts of best management practices
 - Possibly compare and contrast companion animal and livestock prescriber behavior
 - Outreach to producers to help understand benefits of recommended changes
 - Use Ag extension services to educate public
5. Other considerations regarding coalition-building
- Ensure a One Health approach and collaboration
 - Timeline & Priorities
 - Focus on resistance itself, rather than just reducing antibiotics
 - Drug labels are old and guidance may need to be updated. Do they work as intended?
 - How can social media/influencers be used to advance the effort?
 - Refer to EU RONAF report (Reduction of Need for Antibiotics in Food Animals) for potential approaches
 - Use risk assessment approach to align all research
 - Utilize existing public-private partnerships if possible
 - Consider existing models of consortiums that have been effective
 - Focus on the most immediate impact to demonstrate results. For example, diagnostics is a faster way to show reduction in use, so anything that can be done to facilitate point-of-care diagnostic information
 - Organization, governance, “membership” requirements, management, operations, expectations and funding need to be outlined to engage participants.
 - What is the “win” or “incentive” for an institution and its faculty to participate or for a company to support it? Confidentiality, patents, etc. also come into play.