“Improving Antimicrobial Use in Food Animal Production: Alternatives, Options and Incentives”

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Reports from the Working Group

Working Groups

Beef Cattle  Dairy  Pork  Poultry
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Poultry: Perspective from those outside the poultry industry

Group not clear about what antibiotics are being used in the industry

1. What are the most obvious/ specific targets for intervention for your industry – e.g., where a change in food production practices can make a significant, positive impact on both animal health status and antibiotic selective pressure? (and is compatible with implementing FDA Guidance 209, 213 and VFD) challenging area- smaller producers do not have all the capabilities of large producers; focused on low-dose & chronic use and not other scenarios

   Aim is to reduce antibiotic need and use
   That they would not be drugs used in human health
   There would be a reduction in resistance rates; have to correlate with specific industry

2. Identify two alternatives: consider criteria: impact on the emergence and spread of antimicrobial resistance; shared health of humans, animals and the environment, economic viability, sustainability, feasibility and likelihood of implementation

   Didn’t offer any alternatives – save for individual treatment.
   • Minimize overall the use of antibiotics to optimize factors such as minimizing the need for growth promotion uses.
   • Maximize the use of biosecurity, targeting the use of these antibiotics and vaccines

3. What are some of the barriers/opportunities available to promote a specific alternative? What incentives – economic or regulatory-- can support/promote successful implementation?

   Area that would be challenging: dealing with smaller producers, and them being able to operate the same way when limiting the use of antibiotics- this can be market driven
Smaller producers will not have all the capabilities of larger integrators; will not be able to operate in the same way in terms of avoiding the need for antibiotics; how to incentivize will be a challenge; perhaps they can distinguish their product — so that they can make a living.

4. What priority, measurable improvements would you target in a 1-year plan? 3-year plan? What evaluation measures would you use?

Overall target
- Focus on phasing out medically important drugs used for growth promotion to the extent that those drugs are being used for growth promotion purposes
- Non re-use of bedding — how you would evaluate — the group discussed the best metric; look at decreases in overall use or absolute amount of drug being used; best indicator; if there were metrics that would indicate impact on core issue, which is contribution to resistance — that would be the better measure. Group said couldn’t speak on behalf of the poultry industry, as the participants hail from other stakeholder groups (government, veterinary association, animal welfare and academia).

**Pork Industry:** Chandler Goule

*Disclaimer — no one in this working group is involved in the U.S. pork industry; EU colleague has experience*

1. What are the most obvious/ specific targets for intervention for your industry — e.g., where a change in food production practices can make a significant, positive impact on both animal health status and antibiotic selective pressure? (and is compatible with implementing FDA Guidance 209, 213 and VFD)

In the U.S. piglets are weaned around 21 days, increasing that to 28 days would be good and can do intervention
- Replacement animal evaluation to make sure that they are not bringing additional bugs
- All in-all out, batching, possibly keep pigs together all the way up to slaughter
- Reduce cross fostering — when you take piglets from one sow and give to another (only so many spigots)

Auction houses are problems:
- Do more online or video auctions to reduce co-mingling (more a beef issue, but it does occur)
- More individual direct contracting for replacements from one or the same source
- Vaccination on sows for piglet health

Experience with information technology (IT)/aging producers if we are to go online
- Cost to feed, supplemental food programs
- Cost of housing conversion
- Logistics of online business trade structure
- Education, language barriers (and immigration), husbandry educator, increase employee retention rate (and educate them); there is a large turnover — institutional knowledge is going out the door; trained to recognize clinical forms of disease

2. Identify two alternatives: consider criteria: impact on the emergence and spread of antimicrobial resistance; shared health of humans, animals and the environment, economic viability, sustainability, feasibility and likelihood of implementation

Reduction in antibiotic use
- Record actual use
- Develop and actual baseline (to know how much antibiotics your are truly using)
• Increase employee education/and retention

Discussion: Joann asked about the problem of employee retention

Mike Lormore: Hispanic labor handles 85% of work in dairy industry- lose people- better offer up the road; immigration a true issue & will have a significant impact in this country

Chandler Goule: education is becoming more and more important

3. What are some of the barriers/opportunities available to promote a specific alternative? What incentives —economic or regulatory— can support/promote successful implementation? —

4. What priority, measurable improvements would you target in a 1-year plan? 3 –year plan? What evaluation measures would you use?

3 year goal:
• Return to same number of days to market, before we reduced antibiotics and the same number of weanlings per sow before the reduction

Beef/Cattle Industry: Mike Apley

1. What are the most obvious/ specific targets for intervention for your industry —e.g., where a change in food production practices can make a significant, positive impact on both animal health status and antibiotic selective pressure? (and is compatible with implementing FDA Guidance 209, 213 and VFD) (melded q. 1 and q. 2)

The primary antimicrobials used are the ionophores — salicin or monensin, bambermycin, which are not considered of primary concern to human medicine. As far as the growth promotion aspect, there is really minimal to be gained there.

• Beef-cattle respiratory pathogen ecology and interventions
• Pre-feedlot immune intervention
• Alternate systems —grass based systems; caveat — the actual dollars- add another year on to harvesting; it can be done —a different economic model.
• Continued advancements in nutritional management
• Genetic selection for disease resistance
• Unique challenge: Not vertically integrated; the challenge is to vertically integrate based on data, not economics.

2. Identify two alternatives: consider criteria: impact on the emergence and spread of antimicrobial resistance; shared health of humans, animals and the environment, economic viability, sustainability, feasibility and likelihood of implementation.

Growth promotion aspect: minimal impacts on human health
Where you can generate a price signal is in backgrounded calves —they either go through a facility or an owner keeps them for 30-35 days and trains them to eat out of a bunk; vaccinates them, boosts them;

Morgan Scott: commented on modifying group treatment/metaphylaxis treat individual sick animals?

3. What are some of the barriers/opportunities available to promote a specific alternative? What incentives —economic or regulatory— can support/promote successful implementation?

Incentives
• A demonstrable efficiency gain and return on investment to the producer, e.g., any dollar investment would be offset in a decrease in antibiotic use and an increase in productivity – an obvious win-win deal
• A consumer price signal

Opportunities/barriers
• Preventive uses: metaphylaxis of a subset, not the whole group
• Barriers: need demonstrable efficiency gain (for the producer), or a consumer price signal

4. What priority, measurable improvements would you target in a 1-year plan? 3–year plan? What evaluation measures would you use?

Goals:
• Efficiency for profit to the producer
• Measurable output: specific drug pathogen interactions- would require a monitoring system to represent the prevalence. The impact on human health – is the final output and why we are here today. The output is to decrease disease (in humans and animals). (Stuart: This is reminiscent of poultry industry group- looking at commensals)

Dairy Industry: Mike Lormore

1. What are the most obvious/ specific targets for intervention for your industry –e.g., where a change in food production practices can make a significant, positive impact on both animal health status and antibiotic selective pressure? (and is compatible with implementing FDA Guidance 209, 213 and VFD)

They use ionophores in lactating cows and growing animals. They have a significant economic incentive to keep antibiotics out of lactating herds, because they have to throw all the milk out.
• Economic incentives are well aligned for limiting the risk of disease and use of antibiotics
• Targets for intervention: intramammary for mastitis; and parenteral applications in early lactation.
  o Education on disease identification and implementation of treatment protocols, disease prevention protocol, motivation to clean up drug residues in dairy cull cows. They are learning a lot about consistent treatment protocols. Where they are able to do this and do it successfully, they can significantly decrease the number of interventions made and improve outcomes. This/education is driven by primary care veterinarians and the herd health staff.
  o Ongoing access to a lot of vaccines- constantly work on coming up with better treatment protocols and better vaccines.
  o Management of cull cows (20% need treatment), residue avoidance (penicillin). 2.5 million go to beef market every year. 20% had pressure which landed them in the beef market when they did. Some of these animals have been treated shortly before ending up in the beef market. They have to do a lot to minimize the risks. The number one challenge from a residue standpoint is penicillin- which constitutes 30% - 40% of drug residues in cows. None of the penicillin used is on label. One of the things they learn at veterinary school is that penicillin does not work at the label dose.
  o They are putting animals in a 30 day feeding pen – working well.
2. **Identify two alternatives: consider criteria: impact on the emergence and spread of antimicrobial resistance; shared health of humans, animals and the environment, economic viability, sustainability, feasibility and likelihood of implementation.**

Need to have same industry standard, protocols
Labor specialization: better health, better outcomes, better productivity
They have as many herds as they did 10-12 years ago—much consolidation has occurred in labor specialization.

3. **What are some of the barriers/opportunities available to promote a specific alternative? What incentives—economic or regulatory—can support/promote successful implementation?**

Herd size (smaller herds have harder time of implementing protocols) not a fan of letting small herds go— to create problems for the rest of the market.
Experience and knowledge of handlers/herdsmen—doing things the same way their parents did
Incentive for doing this right (milk quality and residues); a big disincentive not to get it right—Economic pressure created

4. **What priority, measurable improvements would you target in a 1-year plan? 3–year plan? What evaluation measures would you use?**

One year plan:
- Continue recent efforts, education and training producers and processors on treatment protocols and avoidance of residues
- Improvement measure outcomes; can measure improvement in outcomes using treatment protocols. Most of dairy cattle go through 3 facilities—35-40 contaminated carcasses. In 2011, only 2 adulterated carcasses in a 12 mo. period of time. They are moving in the right direction.