

**Animal Health Institute  
Capitol Hill Antibiotics Briefing  
July 20, 2010**

**Audience Q&A**

**Q: I'm Matt. I'm from Congressman Cox's office. I was curious about – I'm not skilled in the medical community, but our drugs that are prescribed for something like salmonella for animals, but not for humans would those – ?**

*A: You know for those of you who may not have heard the question in the back. The question that we've been checking on is when an antibiotic is given to food animals and selects for resistance then can that be transferred into human infections. I think that is the overriding theory that that halfway is available. The real question is not so much the possibility, but the probability on that, so we need to look at all the steps that connecting those two points has to encounter and it's quite a number and that is again coming back to the risk assessment because one way to think through that in a very logical progression. What has to happen for that ultimate eventuality to occur? Does that answer the question?*

**Q: I was wondering if you could talk about your reaction, one, to the new draft guidance and to the bill that is out there [INAUDIBLE] to [INAUDIBLE]. Can you talk a little bit more about the policies of your discussion where you stand on those and what you think about them?**

*A: So look let me mention a word or two about the legislation and then Rich, you can talk about the guidance. I think those are the two things you asked about. Obviously you know the AHI and our members are opposed to a passage of the legislation that has been proposed PAMTA and certainly one of the reasons for that is what you've heard today is that there are many activities, programs, layers of protection that are in place that we believe are working. FDA as Rich will talk about in a moment and as you've heard this morning with the Guidance 152 and the new guidance. The FDA is on top of this and paying attention and keeping up with the science and finally these risk assessments that Tom described obviously you know there is a lot of products that would be included in – that would be removed from market as a result of that, which these risk assessments have shown have very little or no risk, so those are some of the reasons we would be in opposition to the legislation and I'll let Dr. Carnevale talk about the new guidance.*

*And the new guidance is guidance for industry 209. I think is the number the FDA put on it. This is quite different than what PAMTA would propose and the FDA is focusing in on two specific areas of concern they have with currently approved feed antibiotics. That is one is their concern about growth promotion or weight gain feed efficiency claims not being judicious in their minds and also the fact that a number of these products are available over the counter and they would like to increase the veterinary control of the decision making about the use of those products. PAMTA obviously takes a much broader approach to these products. They include anything that might be in the prevention and control category whereas the FDA is very supportive of prevention and control uses, so we think the FDA is probably on the right track. We have worked with them over the years on this issue and we continue to want to work with the agency. I think*

*Dr. Sharfstein at the hearing last week the Deputy Commissioner said that he wanted to collaborate with the industry to try to deal with these issues that they have a concern with and where he simply pointed out that some of these claims are not judicious. So again, I think it's a different approach than what the Preservation for Antibiotics for Medical Treatment Act would take. It's a much more science targeted approach and so we appreciate the FDA putting that guidance out. We appreciate their willingness to collaborate with us on working through their concerns.*

**Q: Hi, I'm James and I work in Congressman [INAUDIBLE] office. When using data, collecting data for estimating [INAUDIBLE] on logistic models for risk assessments aside from NARMS where does the actually come from? Are they in house studies or are they in the field or what kind of experiments [INAUDIBLE]?**

*A: The question was around the source of data for conducting the risk assessments mostly on a quantitative basis. It's best to use published literature where available to derive the information. That way there is at least something quality insurance with the types of inputs that you're providing. NARMS data has certainly been used. Although we can certainly use some enhancements to the NARMS program that data has been used as a good source. We can also look at other government data sources for relative amounts of meat contamination. We look to [INAUDIBLE] sources depending on what is in the risk assessment for say usage data. We can look to animal population numbers if you want to go there. Looking at human health consequence data you almost have to go to published literature or some of the CDC databases. There are very few other sources that you can go to for that information, so by trying to scour the literature, doing some networking and looking at online available resources. Those are really the main places to get that information. The key is synthesizing it all and making a story that goes all the way from the farm to the food to the failure.*

**Q: Bill with Competitive Enterprises Institute. I wanted to thank you all for a very informative presentation. For the one, the \$64,000 question that you all haven't really addressed today is why are we using antibiotics in livestock in the first place, particularly for growth promotion. You know If you listen to the concerned scientists it's because livestock operations are greedy and mendacious and then if we just move to free range and organic operations you know we would get rid of all disease, there would be world peace and it would always be 72 degrees and sunny. So what is it that we're getting out of this is I think something that we all would benefit from hearing?**

*A: And that would be answered by you know folks who are raising those animals and caring for them, but I also invite you know any members of the panel to weigh in on that.*

*So I'd like to at least first talk about the therapeutic uses because it's very clear. Animals get sick. Animals get sick just like humans get sick and yet they with antibiotic treatment they can get well and can be well enough and be healthy to enter the food supply. Whether animals are grown organically or whether they're grown in productions systems animals will get sick and so the concern for antibiotic use is in the treatment, prevention, control and that's a part that I think we'd like to really focus on and emphasize here. So very clearly there is a medical need, a*

*veterinary medical need for antibiotic use in livestock and with veterinary involvement, which I think is what the guidance for industry 209 is talking about, with veterinary involvement the AHI's emphasis on – sorry, the FDA's emphasis in that proposed guidance it really is the emphasis on treatment, prevention and control uses to make sure that we are maintaining our animals in a healthy and humane fashion and at this point I think it is probably not relevant for us to talk about organic versus conventional farming in terms of you know sustainable agriculture. That certainly is probably a very different topic for another day.*

*You know I'll pick up on that \$64,000 question relative to the performance uses of growth promotion so called. Typically what we've seen is those durations and concentrations there is a component of disease prevention that is associated with that usage, so that is one benefit if you will is to prevent disease rather than wait until later when you have to use therapeutic antibiotics to go in and rescue if you will. Another benefit that has been ascribed to that use has been decreased feed and water usage obviously. Today's market environment for cattle farmed [INAUDIBLE] anything you can do to save on the farm by decreasing expensive feed costs is a value and then obviously having less feed in what – There will be less manure and waste to dispose of as well, so that's one of those environmental benefits that one could also talk about. And finally what is the rush to get the animals to the market, why do we need to speed them faster and really what this can be looked at is when you're trying to establish carcass uniformity, same size of the animal's carcass, so that when they go into the slaughter bin all the machinery, all the people are geared for pretty much consistent product. Why is that important? Because as those animals are going through all the processes that they do they want to prevent gut contamination. The animal is going into this large bin. Their meat is sterile. It's only contaminated if there is a gut break of some sort and if you have an oddball animal, different size, what have you, it increases the likelihood that you're going to get that gut break and some contamination, so all of the rest of the animals that are in that process going behind it may also be contaminated. So there is one other value in food safety that sometimes is overlooked and which I don't say is very important and it's very difficult to actually measure that. Yes, it's more with diseased animals, not so much with the antibiotic treatment per se, but certainly there has been a correlation where those animals that have some sort of disease whether it's intestinal adhesions or that sort of thing have been shown to have higher campylobacter counts on their carcass, so there is some evidence in the literature.*

**Q: My name is Jessie from Congressman Ingle's office. In the past years you have seen that animals have been growing at a much quicker rate and have been growing much larger, which means sicker and more susceptible to disease, so wouldn't you think that all these growth hormones are in fact just spurring all these diseases instead of making a – ?**

*A: First of all and I don't know that there is evidence available of animals being as you said larger and more disease susceptible, any evidence of that there, so somebody want to start? Rich you want to start off with it, antibiotics versus hormones?*

*Well yeah, antibiotics and hormones are quite different. Hormones have been approved only for beef cattle and to enhance the growth rate of beef cattle. Antibiotics are not – I mean hormones are not used in other species of animals. Yeah, I think Ron is right. I don't know that*

*there is evidence that animals are growing faster. I mean clearly genetics have had a big affect on improving the productivity of animals and if animals are bigger a lot of it is due to breeding, selective breeding and genetics that have produced some of those larger animals. All these drugs have been evaluated by FDA, as safe and effective. Any adverse affects that come out of the use of those antibiotics the FDA sees because companies have to report those, so I think to make an assumption that it's caused increase animal disease or animal illness I think is false because I don't think there is evidence to prove that. I mean I don't think that if animals do get sick, if they get sick in the normal course of raising them these antibiotics can only help to make them better. I don't know that there is a lot of evidence out there that shows that they necessarily lead to increased animal health problems. In fact, producers wouldn't use them if they increased animal health problems.*

*I think if you look at – If you look at the U.S.D.A. data on diseases in for example cattle the disease rates have remained relatively stable for several, several I'd say I'm not sure decades, but at least several years and so I would also contest that bigger animals mean more disease. We go back to look at you know since 1950 you know we have been able to produce essentially 50% more beef on the same acreage because of increased genetics and improved management and so forth and if you translate that and say what would that have cost us in terms of acreage to produce the same amount of beef for the United States in the fashion that was made 50 years – 50 or 60 years ago it would essentially have taken several more states full of corn to have produced the amount of grain necessary to produce that many more cattle, so the fact that we are producing more beef per head of animal, the fact that we're producing more milk per head of dairy actually is doing a great job for us in terms of preserving the environment and there isn't any evidence that says that disease is more prevalent than it was 50 or 60 years ago. It is a fact that the types of diseases have changed and if you put an animal on pasture you get a different spectrum of disease than you get if you put an animal in a confined operation, but in terms of the incidence of disease it's remained remarkably stable.*

**Q: I was just wondering if you could clarify some things, the critically important antibiotics. Particularly when you were talking about salmonella you focused on the FDA critically important antibiotics, but I know with salmonella Typhimurium DT104 to be five main resistances are all listed as important, highly important or critically important under World Health Organization guidelines and [INAUDIBLE] about that.**

*A: So I think the question is you know compare and contrast what is considered critically important by the FDA as opposed to WHO or other organizations. You will find some slight differences here and there, but you'll find very broad consensus across those that third and fourth generation cephalosporin, fluoroquinolones, macrolides, Trimetropin Sulfa are considered to be those critically important ones. You mentioned you know the five resistances with DT104. That is one component of determining whether they're critically important is whether there is a resistance profile on salmonella. The other component is whether – whether there are other alternatives that can be substituted in and particularly for serious diseases and so that is why you just have a little bit of a difference between what is considered critically important and the five resistances that you see with DT104 as an example. Across the organizations you'll find a little difference here or there. I'd say that there is not unanimity, but there is broad consensus.*

**Q: Dan from Congressman – antibiotics to help animals cope with GMOs and other genetic, basically other products that are being used for animals to produce more and more.**

*A: I can't comment for other companies, but I can say that we do not use – we do not factor in GMOs at all in our evaluation of whether a particular new therapeutic area is important for us or not. It's not a factor at all in terms of determining what we consider to be a new therapeutic agent or a new medicine for animals.*

**Q: Yeah, from the pharmaceutical production standpoint as far as with Pfizer is there – ? I imagine there would be current research that is going on for new antibiotic classes of drugs that are used solely on animals and I was kind of just wondering what the timeline from the Pfizer standpoint or other pharmaceutical companies as far as what you envision in the future and that timeline that you envision new antibiotic classes to be made if ever?**

*A: Well I guess if had a crystal ball I'd be investing in the stock market a lot differently. The simple answer is as an animal health pharmaceutical company it is remarkably difficult for us to justify the investment in finding a new class because that is looking for needles in haystacks and that is a multimillion dollar discovery investment potentially with zero benefit, with zero assurance of success. That is why virtually all of the antibiotics that are used to treat bacterial diseases in animals come from classes that have been discovered and developed in human medicine because as a small market it's very difficult for us to justify that significant investment. That's number one. Number two is if we found a new class quite honestly I think it would be presumptuous of us to limit it to animal health issues if there was an application for human medicine, so we work collaboratively with our other organization to make sure that there – if there is something new that is discovered that we know isn't applicable to human medicine first and foremost or is applicable to animal health what I would say is that we are looking to try to find antibiotics that are from existing classes or perhaps classes that we know have safety concerns in human medicine and see if there is application in animal health. Now in terms of timelines if we're starting from that concept it's probably in the 10 to 15 year range before we would have a successful outcome and we brought it to the market and that is assuming that things went well.*

**Q: If you don't mind if I could follow up too, as far as the ionophores, are there derivatives of ionophores that are currently being looked at as part [INAUDIBLE] ionophores are strictly used from a cattle, swine, poultry standpoint and not used in human medicine? Is there a future in a derivative of an ionophores that can be used to treat many of the same diseases that we use it for today and could we replace current antibiotics we're using in human medicine?**

*A: The ionophores have a very unique mode of action. It's more a physical action than a metabolic action, so basically what that means is it's disrupting the osmotic balance and the cell basically bursts. It's very [INAUDIBLE], so it's got a very unique mechanism. That same target, usually coccidia, which is a parasite, is very closely related in terms of its membrane structure human cells, so you've got a very narrow therapeutic window to separate in animal use and human use. You get into some tox issues regarding [INAUDIBLE]. I'm not optimistic that any*

*animal [INAUDIBLE] would actually fund something to extend widening that window for therapeutic use just based from what I've seen and how that molecule works, so at this point in time the ionophores do seem to be a very unique class that is quite applicable to animal health and not so applicable to human health going forward. Does that answer your question?*

**Q: I noticed that you've definitely focused on the food safety and [INAUDIBLE] your testimony. Sorry, I apologize, but all the barriers to transfer that you're talking about. What about studies that suggest farmhands have incredibly increased risk of carrying resistant bacteria from the animals?**

*A: That is a good question and we have been talking about food safety and that is what the guidance is designed for. I can tell you, you know the role of – that I have, which looks at safety for the user or the handler that is exactly where that would fall into and it's clear that FDA considers that as part of user, handler safety and although I'd have to say that there is not a guidance that has been identified for that. It is a component that they consider when looking at safety from the user or the handler and it's separated because if you think about user or handler that is a specific subset of population. It's essentially an occupation if you will and so unlike food safety, which affects the entire consumer base the concerns for the user or the handler are more focused on that particular population, so the risk estimations become different. The models for risk and for transfer become different, but it is something that is considered.*

**Q: I'd like to just expand the question. How are the, I guess the handler relationships, but also the environmental – how is the animal reservoir evaluated in that with the environmental impacts?**

*A: I'll try and answer your question, but I'm not certain I understand it very well. For environmental assessment it is looked at, the resistance is looked at as well as what is happening, the toxicity of organisms and so forth looked at from the time the drug leaves the animal through the time that it goes into the environmental area around the animal, so you look at manure. You look at urine. You look at waste [INAUDIBALE] and does the drug – does the medicine go into the aqueous component or does it go into the soil component and yeah, it's looked at as much as possible. It's looked at before the approval and the estimations are done based upon in vitro microbiology assessments and so forth. Clearly there is a post approval approach as well that is done and that is something that is being monitored as well and that is a factor that comes into the microbial safety assessment because we know that some of these zoonotical organisms can survive in the environment for a period of time as part of the assessment of does the bacteria transfer from the animal to the human being. We talked about it as part of the food supply, but there is that concern about it in the environment as well and that is part of what is factored in, in that exposure assessment.*

**Q: If something is labeled organic or free range does that mean that it is free of all antibiotics or just those that are non therapeutic?**

*A: So there have been a number of published studies comparing organic meat with conventionally produced meat. Rich, you want to take a crack at that one?*

**Q: If something is labeled organic or free range does that mean it's free of all antibiotics or just those that are non therapeutic?**

*A: So does organic mean it doesn't have any antibiotics in it, so you might talk about residues versus resistance as well as what those labels may or may not mean.*

*Well I mean theoretically – theoretically the organic – If it's operated under the organic standards program of U.S.D.A. they have specified what products can be used in that animal and what can't be. Whether they allow any quote, antibiotic type substances or not I'm not really sure. I don't know what the whole list looks like. I know in some countries there are antibiotics that are allowed for use in organic production and they still call it organic. I think the U.S.D.A program is probably stricter than that, so theoretically they wouldn't allow the use of any antibiotics in that product. Does that mean the food would always be free of antibiotic residues? Not necessarily because there may be – have been antibiotics on the farm used before that, maybe some uptake in the soil. It's not sure. It's likely that there wouldn't be any residues, but then again if you compare – if you compare organic with conventionally produced food you find very few residues in conventionally produced meat and poultry as well from U.S.D.A. The National Residue Program finds extremely low incidence. Is it zero? No, but it's quite low, so I guess the answer to your question is I don't know for sure whether it would be free of total residues, but I mean they would restrict the use of antibiotics in organic production. I don't know if that answered your question entirely, but.*

*So the organic label really has to do with what's allowed in the production practices on the farm. That is what refers to, not necessarily has anything to do with the microbiological profile of the meat or how much bacteria or resistant bacteria it may or may not be.*

*I don't think she was asking about that. That's right. That's right. The antibiotic resistant – The bacteria on that organic food wouldn't necessarily be any different than conventional food.*