SENATE COMMITTEE on FOOD and AGRICULTURE

Senator Dean Florez, Chair

Addressing the Public Health Impacts Resulting from the Non-Therapeutic Use of Antibiotics in Our Food Supply: Are We Creating a "Superbug"?

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SENATOR DEAN FLOREZ: I do want to thank everyone for being here. I know people have traveled some great distance so we're going to try to change the format a bit for the hearing. Normally we just begin at questions, so we're going to allow a little bit of public testimony prior to the witnesses. So if there are some statements that people would like to make, I understand, we'll absolutely love to hear that.

I do want to thank Senator Maldonado. I do know members will be joining us as the hearing progresses.

And let's begin.

I do want to thank, particularly, those who have visited me in my office—given me some perspectives on this antibiotics hearing.

Most of you know that today we live in a society where the use of antibiotics is tightly regulated. Folks can't simply walk into a drug store and purchase antibiotics when they are sick. Instead, they must visit a doctor who provides a case-by-case evaluation and who then issues a prescription for antibiotics only when medically necessary.

The situation is completely different when it comes to antibiotic use for animals and our food supply. It seems that the practice on the farm is that

there is no prescription from a veterinarian is necessary. In fact, an animal doesn't even have to be sick in order to be given antibiotics. Instead, a producer can just decide to give them antibiotics for any reason at all.

Antibiotics in feed is something that we will be talking about at great length today. And I do know that some argue that antibiotics are provided in low doses to prevent animals from getting sick, while others argue that animal feed antibiotics, in essence, promotes quicker growth. The fact is, that antibiotics are often already included in feed that a grower purchases. That's somewhat telling. I'd like to begin some discussion on that.

I would bet if antibiotics led to weight loss, we wouldn't be having this discussion today.

I think that one study estimates that 70 percent of antibiotics used in the United States are given to healthy livestock. This livestock, in essence, means that they're not sick all the time, yet they receive these drugs.

The rampant and unregulated use of antibiotics in the agricultural industry has resulted….and in some minds in terms of it providing for a serious public health concern, was noted by scientists and health care professionals in this country.

In a time where the United States sees an increase in the amount of antibiotic resistant bacteria infections (we've had many hearings in the state Senate on MRSA, for example), some question whether the non-therapeutic use of antibiotics in livestock has contributed to this increased public health crisis. One of the purposes of this hearing is to talk about that, to see, if indeed, that is the case.

I do know that we have a continuing practice that seems to be somewhat questionable when you look at countries across Europe and South Korea who have already banned such antibiotic use in the animals. With this in mind, the Committee tends to take a critical look at the use of antibiotics in California livestock and to determine the appropriate level of regulation necessary to protect public health.

I would like to, again, thank everyone for being here. Let's go ahead and begin with Panel 1, which is the veterinarian doctors, the Poultry Federation and cattle producers. Come on up: Mike Apley; Scott Hurd; Mark Bland; Michael Boccardoro, who is from the California Poultry Federation; David Daley; Noelle Cremers, from the California Farm Bureau. If I've missed anyone else, just come on up and introduce yourself as you begin.

Thank you all for joining us. Who would like to begin?

DAVID DALEY: Thank you, Senator Florez. My name is Dave Daley. I'm a cattle producer from the north state, Butte County.

SENATOR FLOREZ: Thank you for joining us.

MR. DALEY: A fifth generation rancher. I know you want these comments very brief and I'll try to do that.

I think it's important for me to begin to emphasize that part of what we do is we are a family business and that's really critical. We're fifth generation ranchers and we take producing food for Californians very seriously. We believe that we do that ethically, humanely. We care for livestock.

There's extensive training in the cattle industry, beef cattle industry in particular, at the producer level called "quality assurance training," which we expect all our producers to participate in and that includes education regarding the use of antibiotics and the appropriate use those. It is discriminate; it's judicious; it's appropriate _____ that we address that issue. We're very careful.

In my particular operation, it's an extensive operation based on rangelands, we don't use antibiotics except when necessary and it's for the good of the animal. My family has been involved in this business a long time.

Of all the people in this room—I told some folks this morning—I am the one who may be the most directly impacted at some point with what occurs with this kind of proposed legislation. Essentially what happens, is those existing additions to what we do in practice and our ability to try to track those, become difficult for us to manage. And at some point…

I brought my sixth-grade son—as a lesson in democracy—the sixth generation, whether he'll have the opportunity to continue in California agriculture? And he does have alternatives and the alternatives, unfortunately, are ones that I'm not really pleased with. It's to sell and develop open space. Clean water. Clean land. Land that we've had stewardship for, for 150 years. And I'm worried whether he'll have the opportunity, if he chooses—sometimes agriculture chooses you; it's not an easy business. Maybe he'll be bright enough to find another profession. But if he really has it in his heart to go back to the land, I wonder whether that open space will be available for the next generation.

Thank you.

SENATOR FLOREZ: Great. Thank you. And let me just ask. I do have some general questions for the entire panel. But you said you were from a small family?

MR. DALEY: It depends on how you classify it. My family came here and I grew up on a very traditional small cow/calf program—a couple of hundred mother cows which we would call "small." A kind of a hard scrabble of the way we grew up with nature and we thought it was pretty normal. We've tried to expand that since that time and we actually now have 4- or 500 mother cows on rangeland but it's rangeland we're really worried about protecting as open space and keeping for ourselves, for nature, for open space in general.

SENATOR FLOREZ: Okay. And when you say you don't use any antibiotics in your (quote) "when necessary," does that mean you don't buy any feed with antibiotics in it?

MR. DALEY: Actually, we don't buy much feed. If we'd done our business correctly…

SENATOR FLOREZ: Well, how much is much?

MR. DALEY: Well, we buy no grain for our operation, so we buy no mixed feeds whatsoever, because they are managed on grass. We do buy hay as a winter supplement, as a roughage, and, obviously, that's not going to have antibiotics within it.

SENATOR FLOREZ: All right. And is your operation similar to other operations in California? You do grass. I mean, is this something other folks are doing in terms of cattle?

MR. DALEY: Well, it's pretty typical with my segment of business, which is the cow/calf sector. That part of the business runs on grass. That's the expectation. It runs on grass and open space and converting grass to protein. That's what we do. And so, we do not typically rely on stored feed stuffs other than hay through the winter months. And that is typical of all of the open rangeland operations in California. They will, then, sell their product to the next segment of the business.

SENATOR FLOREZ: And what is the next segment of the business?

MR. DALEY: Typically, that would go to the feedlots both in California and out of state.

SENATOR FLOREZ: Okay. So you're not a feedlot; you're just kind of the window into that next segment?

MR. DALEY: Well, we are the base that starts the process. Without that base, then, in our local community, the feed store, the parts store, the tire group, without that business….we are the starting point and the stopping point for anything that occurs to the cattle business in California.

SENATOR FLOREZ: Until you get to the feedlot?

MR. DALEY: Well, anything that impacts it, absolutely, or, to go anywhere. And essentially, we'll move some of those cattle to the next phase. But when we deal with the cow/calf operation, we're based on rangeland.

SENATOR FLOREZ: Okay. And how long are they on the feedlot?

MR. DALEY: I think we can go ahead and talk to our feedlot experts as they deal with that. And it's going to vary depending on the operation. It will depend on the size of the cattle, the weight of the cattle, the genetics.

I guess I would also make the comment; we have really changed what we do in our business in terms of management in such a way that we have great vaccine technologies. We have nutrition. We really value our animal health practices. We work with veterinarians. It's not my intent to go out and just

use antibiotics as a routine practice and I don't think you'll find any producers that I know of, who do so.

SENATOR FLOREZ: Even on the feedlots?

MR. DALEY: Again, we'll transfer to the feedlots. But rather me answering that question, because they have that expertise. But at least the cattle that I send to the feedlot, the answer is….if I call them and ask, they're going to say, "Hey, we want to keep all treatment levels to a minimum; that's our expectation." If we provide animals that had the right mineral nutrition, the right….in general, they will not have very many to treat.

SENATOR FLOREZ: Okay. Let me continue, since you're the bridge into the feedlot. So given that you don't use antibiotics until necessary, I mean, should feedlots, then, not continue with antibiotics given that you've given them this great start?

MR. DALEY: I think, again (we're going to address this with the feedlots), but many of them don't. Again, I believe we need to move to the folks who are here to talk about the feedlot business because that's not my expertise. But I know the feedlots that I deal with; it's not their intent either, to use them indiscriminately.

SENATOR FLOREZ: Got you. So you're telling us that you don't think that many feedlots continued with antibiotics after your…

MR. DALEY: I think it's a case-by-case basis and it really depends a lot on the cattle. Again, you have experts here that can address that issue.

SENATOR FLOREZ: So do you see a problem with banning antibiotics given your system?

MR. DALEY: Yes. I think what it does is it puts us at a competitive disadvantage throughout the chain because, essentially what happens, we already are in California trying to market in an interesting climate with significant regulations…

SENATOR FLOREZ: Do you think there's middle ground given that you don't do it unless it's necessary?

MR. DALEY: I think it's a safe, wholesome, well tested, scientifically proven useful tool. It's not *the* tool in the toolbox but it's one that if you take it away, it's going to hamper what we do at my level and the jobs in my community

SENATOR FLOREZ: Okay. Thank you.

MR. DALEY: Thank you. I appreciate that.

SENATOR FLOREZ: Okay.

MIKE APLEY: Chairman Florez and Members, thank you for the invitation to be here. I'll give you a little bit about what I do. I'm Mike Apley. I'm a veterinarian with a PhD in board certification and clinical pharmacology. My pharmacology area focus is food animal production, especially beef cattle and swine. My continued area of clinical work is in the beef feedlot industry, where I still serve as a consultant a little bit with the veterinarians and yards I work with. I'm here today to make myself available for your questions. There's a few key points I hope that will come out in the discussion that I hope to prompt a little bit.

I think there's a real need for definition of terms that are commonly used in discussion of resistance. And one of the terms I have a little concern with and would like to talk about later, is the term "sub-therapeutic," or "non-therapeutic" and how we define the uses. And I'd also like to be sure, today, we make it clear, just as Dr. Daley mentioned, that we commit extensive resources to non-antimicrobial disease preventions, including vaccines, animal biosecurity.

In my written statement I've submitted, I talk some about backgrounding systems, etc, where we're trying to make the cattle as healthy as possible.

And I'm sure we'll all agree that the decisions should be empowered by peer review data that is deemed sound and based on principle statistics, epidemiology, pharmacology, medicine, biological relevance, risk assessment.

Chairman Florez, in your opening comments there was one figure I hear thrown around quite a little bit that I hope we have the opportunity to address today and that's the 70 percent of antibiotics produced in the United States are

sold, used. That comes from the hog ___ report where they claim, that again, 70 percent of antimicrobials in the U.S. go to non-therapeutic uses. But their weight estimate for that use exceeds the total amount of veterinary drugs sold in 2005 and there are some real issues with that data.

SENATOR FLOREZ: So what is the number?

DR. APLEY: You know…

SENATOR FLOREZ: Is it better that you don't know? That makes me a little more nervous.

DR. APLEY: Well, there's groups working on coming up with better numbers but for me to give a number would be no better than the 70 percent. I can tell you…

SENATOR FLOREZ: Is it higher; lower?

DR. APLEY: It's lower.

SENATOR FLOREZ: Then what is it?

DR. APLEY: If you look at the animal health institute data that I've referenced in my written comments, they give a total of 25 million pounds marketed in 2005. I'd have to go back to that actual reference to look at that. But almost a third of that was antibiotics that were like the ionophores, which have no relation to use in human medicine. So the other danger with those numbers is lumping all those pounds together as if they were the same type of antibiotic. And the ionophores are one that are very heavily used. They're used in poultry and they're also heavily used in cattle to prevent coccidiosis.

SENATOR FLOREZ: So who knows, then, the answer of how much antibiotics we are putting in to the system?

DR. APLEY: I don't know. I can't give you the number.

SENATOR FLOREZ: Okay. Should I amend my bill to make you guys tell us?

DR. APLEY: The FDA is working…

SENATOR FLOREZ: I'm just trying to wonder, I mean, why wouldn't we know?

DR. APLEY: The sales data is total sales and some of these drugs have different uses.

SENATOR FLOREZ: Okay. How do we find that information out?

DR. APLEY: The FDA has been discussing that; working with that. I don't have the answer to that.

SENATOR ABEL MALDONADO: Would it be through the feed stores or feed companies, because they're the ones that put it in the feed, correct?

DR. APLEY: You're getting into a point of sale issue and going out and looking at that…

SENATOR MALDONADO: No, I'm just asking you a question. Is it getting into the feeds?

DR. APLEY: It gets into the feed through licensed feed mills or through food stores.

SENATOR MALDONADO: So would licensed feed stores, licensed feed mills know how much antibiotics are going into the feed per year?

DR. APLEY: They would have records.

SENATOR MALDONADO: Okay.

SENATOR FLOREZ: I think that might be something that we would like to know. I think, obviously, you said that the 70 percent I threw out, in your terms, is incorrect but yet we don't know what the number is, right?

DR. APLEY: Yeah.

SENATOR FLOREZ: So how do we know it's incorrect? I'm just trying to figure that one out. Yes.

SENATOR DENNIS HOLLINGSWORTH: Mr. Chairman, I guess the question I would have in response to that is sort of like the initiatives that were passed in the early nineties on plant crops and pesticide usages—what are you going to do with the information after you get it? I mean, we could foist a huge mandate, California specific, on agriculture as we did it then and have the information sit on a shelf not being useful at all. It doesn't really get us anywhere except to make us less competitive as the previous witness had said. I mean, we're looking at the…

SENATOR FLOREZ: Well, let me ask the veterinarians; would it be good to have that information?

SENATOR HOLLINGSWORTH: I guess if we're looking at the human health impacts of this type of use of antibiotics, the best thing is to find out are there human health impacts? If so, what is the risk? Not just to find out numbers that take a lot to get to.

DR. APLEY: Absolutely. And I think that's the key issue. And Dr. Hurd is the one here to speak best to the risk assessments.

SENATOR FLOREZ: Let's just get to that one real quick. So are you telling me there is no connection and no risk at all? Why don't you answer that directly? I'd really like to get that on the record.

SCOTT HURD: If I understand the specific question; is there a public health risk from the appropriate use of antibiotics in food animals?

SENATOR FLOREZ: No. Is there any risk at all?

DR. HURD: No.

SENATOR FLOREZ: None?

DR. HURD: There is virtually no risk for the specific antibiotics that have been studied. And that's an important point. And even back to your question about data available; this question has to be answered for every bug, every drug combination. So we can't just say how many tons of antibiotics are used, period, and say that's good or bad, because every bacterium has a different response to different antibiotics. So for those specific risk assessments that have been done, the risk has been demonstrated to be extremely low. You're more likely to die from a bee sting than you are to have a few extra days of diarrhea from one of the most commonly used antibiotics in food animals. And those are scientifically based.

SENATOR FLOREZ: And if you're using the appropriate amount—let's qualify that—correct?

DR. HURD: That's very important.

SENATOR FLOREZ: But we don't know what the appropriate amount, though, is?

DR. HURD: Well, yes, we do.

SENATOR FLOREZ: We do?

DR. HURD: And veterinarians should know how it should be used. You mentioned the possibility of people just pouring antibiotics into the feed and that sort of thing and that's not what the veterinary profession supports; that's not what the pharmaceutical drug companies support—is inappropriate use. So I think that's a key thing. The risk that we're talking about is appropriate veterinary supervised use of antibiotics.

SENATOR FLOREZ: Okay. We're going to get through some more of that as we get through the testimony. Did you want to continue?

DR. APLEY: I just had one. Actually, one of the points Dr. Hurd made about grouping all antimicrobials and all bacteria together in a broad category for legislative action, I believe, creates a risk because of what we talked about, the different groups, different uses and I think that risk is removing valuable tools for controlling animal disease and promoting animal welfare while at the same time providing possibly no benefit to human health or possibly increasing human health risks.

And with that, I thank you, again, for the invitation to be here and welcome questions and discussion.

SENATOR FLOREZ: Thank you. Yes, Senator Hollingsworth.

SENATOR HOLLINGSWORTH: First, I guess, for Mr. Daley. I guess a question would be; these are fairly expensive products, fairly expensive to incorporate into the feed. If there is a benefit in terms of animal health and animal meat production and increase in growth rates, beyond at what point, rather than just dumping expensive ingredients into the feed, is there a diminishment? I mean, if the concern here is that farmers are just dumping and dumping and dumping more and more into this feed; it's fairly expensive; there's a rate of diminishing return if that's all you're concerned about is growth rates. You're not dumping it indiscriminately into the rations, correct?

MR. DALEY: No, that's correct. And again, I'm going to defer to the gentleman in the front row to address that issue. But it is an economic issue,

obviously. We do it because of animal well-being and care. But we also recognize that, why would you purchase something you don't need if you can do a better job through genetic improvement, through planning, through herd health? And you can't just go and say, "Well, I'm going to dump a lot more into the feed here," and all of a sudden we have this ration which would be prohibitably expensive and also not legal. It's not going to occur at feedlots and it's certainly not going to occur on the cow/calf sector.

SENATOR HOLLINGSWORTH: And for Dr. Apley, if I could. On that issue, and if you could address the issue of the down side or the unintended consequences if we were to follow down this path of banning this use, what types of things are we looking at? Are we looking at more animals having to be….more animals per acre; are we looking at grazing impacts on the environment of….people are going to have to put more animals on range; are they going to have to put more animals on feedlots in order to meet demand for production? What are the impacts?

DR. APLEY: Well, the uses we're talking about involve everything from prevention of disease, to control of disease by label, to promotion of feed efficiency, increasing feed efficiency, to increasing rate of gain, to go faster, allows to us less resources to produce them. And again, I'd like to highlight the ionophores, one of the most prevalent antimicrobials that's fed to cattle in feedlots and that's one that helps us reduce the possibility of bloat, helps prevent coccidiosis and increases feed efficiency. That would be a lot of the pounds listed for cattle and I have yet to see a proposed link of any resistance issues with that related to cattle.

SENATOR HOLLINGSWORTH: So that one is pretty much off the table. There's no question…

DR. APLEY: That one should be off the table and that's what I wanted to talk about with sub-therapeutic, is we need to talk about specific uses and specific drugs. As far as costs, there are environmental costs. Dr. Hurd, I know, has been part of a study that relates to pathogen load, pathogen load going through—that I'll let him speak to—would be one of them that I'd refer to.

SENATOR HOLLINGSWORTH: Well, more specifically, if we're talking about increased death rates, correct; we saw that in other countries when they went down this road banning preventative use, that they saw death rates increase 13, 14, 15 percent in certain production. So you have an increased death rate, you have a lowered growth rate, and you have an increase, actually, in the use of antibiotics because you're not getting on top of these diseases. So I guess, has anybody studied, or are there credible studies as to other countries that have done this, what's the increase in grain usage that they have to, then, do? So we're talking about the production of grain has to go up. We've already seen shortages when we have skewed markets because of alternative fuels taking corn out of the marketplace; that increases costs; that increases costs for all types of other commodities. So if we were to do this and we increase the utilization of, say, corn and other crops, how much more open space and land are we going to have to plow under for crops to feed animal agriculture; how much more diesel are we going to have to use to bring those crops to animal agriculture? But has anybody taken a look at that aspect of this policy?

DR. APLEY: There have been some studies done that compare a system that uses antimicrobials in it and systems that don't. And on the feedlot side, we find that our cost of production, which could be used as an indicator for resources coming in, increases by about 20 to 30 percent.

SENATOR HOLLINGSWORTH: Twenty to 30 percent increase in cost of production.

DR. APLEY: Cost of production which is based on the year, it could be one thing being used more than the other but it's…

SENATOR HOLLINGSWORTH: So a combination of more antibiotics being used in a disease….actual trying to get on top of a breakout.

DR. APLEY: I'm talking to specifically to a system, sorry. And we're talking specifically to a system that either does use antibiotics or does not.

SENATOR HOLLINGSWORTH: If it does not, you have an increase in cost of about 20 percent—both feed inputs and other medicines?

DR. APLEY: Yeah, total cost.

SENATOR HOLLINGSWORTH: Thank you, Senator.

SENATOR FLOREZ: Let me default to Senator Hollingsworth question. You mentioned one of these helps with feed efficiency.

DR. APLEY: Yes.

SENATOR FLOREZ: Tell me why that's important so I can understand that.

DR. APLEY: Well, the ionophores, the two we most commonly use in feedlots, one has a label for just increasing feed efficiency and one has both feed efficiency and increasing gain. Right now…

SENATOR FLOREZ: So one is for feed efficiency…

DR. APLEY: Only.

SENATOR FLOREZ: And the other is for feed…

DR. APLEY: Is feed efficiency and rate of gain.

SENATOR FLOREZ: Rate of gain meaning?

DR. APLEY: How many pounds they put on per day.

SENATOR FLOREZ: Putting pounds on?

DR. APLEY: Yeah.

SENATOR FLOREZ: Okay. So one is putting pounds on and the other is feed efficiency. What's the difference?

DR. APLEY: The feed efficiency one; they gain the same but they eat about 10 percent less feed to do it so we cut our feed usage down and, therefore, you're going to have less manure output also. And it acts by….one of the ionophores…

SENATOR FLOREZ: So they gain weight without eating as much?

DR. APLEY: It shifts the rumen flora.

SENATOR FLOREZ: It sounds like a steroid.

DR. APLEY: Well, no, it's different.

SENATOR FLOREZ: It doesn't sound like it is.

UNIDENTIFIED: It's more like yogurt.

DR. APLEY: It's a good analogy. It's more like yogurt. It changes the balance in the rumen. See, cattle don't absorb sugar directly; it's switched in their liver, and so, it makes that more efficient. And then, it also prevents coccidiosis, which is a real serious disease that when let run, can cause other diseases.

SENATOR FLOREZ: Okay. Let me ask—for the panel—you mentioned the feed efficiency (and we've broken this down to feed efficiency and feed efficiency and gain) and I think you might have heard me mention in my opening statement, is this all about, this antibiotic debate, all about gain—weight gain? You just mentioned, "eat less, less manure, but yet, more gain." That was your quote not mine. The other was the fact….is this what this is about, these antibiotics? Is it really not about the welfare of the animal but yet the gain, the feed efficiencies, these issues?

DR. APLEY: Well, the ionophores have both. They do the efficiency and they also prevent coccidiosis, which is a disease that can lead to a lot of others. The other antibiotics in cattle, for example, and, again, I have listed in my written testimony, you can go down to as little as half a milligram per pound per day of chlortetracycline in the feed for range cattle to prevent anaplasmosis during our vector season.

SENATOR FLOREZ: Can you get one of these that doesn't promote any gain at all and yet simply gets to the therapeutic use, meaning, the protection of the animal?

DR. APLEY: When you prevent health problems, healthier animals gain better, so it's hopelessly intertwined.

SENATOR FLOREZ: Gain better or gain more?

DR. APLEY: Well, better would mean more—more efficiently. Disease is a drag on production, as well as an animal welfare issue.

SENATOR FLOREZ: Okay. I get it now. But I'm focusing on feed efficiency, not normally a term I hear in terms of the welfare of the animal. It's more an issue of, feed efficiency means bigger gain. You mentioned less resources and that sounds to me a bit different.

The big picture; are there any other alternatives to this out there? I mean, is this is the only way, no alternatives to therapeutic use of antibiotics? You mentioned DNA and some others, I think. Are these other things that…

DR. APLEY: We have genetic selection. I just participated in a study where we were looking at genetic markers for disease and we're moving along on that. We have extensive vaccines available and in development. In cattle, we have what's called "a backgrounding system" where we move them into small groups first; let them acclimate and then move them into a larger feedlot. So we have a lot of systems like that. And swine, you have all in-all out. One of the biggest things they do is manage what's called "pig flow," on how they move. So we have a lot of other things.

And one of the things I'd like to really emphasize, is when we sell a finished animal out of the feedlot (1,200 pounds) and, say, the market is at $1 a pound, if you look over 20 years history, we average making $10 to $20 per animal. Right now, cattle that are going out of feedlots in Kansas are losing $200 to $300 a head and that's with about 150 days in the feedlot. These antibiotics are expensive, so we don't easily make the decision to include them.

SENATOR FLOREZ: Okay. And I'm just trying to understand, very quickly, on the big picture of this in terms of non-therapeutic use of antibiotics. Because for humans (and you can shed some light on this, you're both veterinarians) but in terms of….it's not a common practice, is it, to give humans antibiotics for the prevention of illness? I mean, we don't normally just prescribe this as a preventative thing. We don't wake up in the morning and take a one-a-day and an antibiotic in order to make sure things don't go wrong. Why do we do that with animals?

DR. APLEY: How many people here, when they're going to travel internationally, go to the doctor? That's not uncommon, where we're going down to Mexico or we're going somewhere with different foods.

SENATOR FLOREZ: Are you saying how many people out of ten Americans?

DR. APLEY: Yeah.

SENATOR FLOREZ: Probably not very many. So why do we do it to all the animals?

DR. HURD: May I answer the question you were asking about; are these drugs only to make animals grow better? And honestly, at one time we…

SENATOR FLOREZ: Well, answer my first one before that one. We'll get back to that. But I just want to know, I mean, the issue of the hearing is whether or not, resistance wise, in humans, trying to figure out how to make sure that we're not offering so many antibiotics as to make them worthless at some point in time. But we don't do that for humans, so I'm wondering, again, why we do that for animals? Across the board, regardless of a sick animal, we take a flock and say all of them versus the one that's sick, I mean, we don't do that in a very proactive preventative way. I just want to know the rationale for it. It's not a judgment. I just want to know, what's the rationale for that?

DR. HURD: I'll answer specifically from the feedlot perspective.

SENATOR FLOREZ: Thank you.

DR. HURD: What we do for preventative….let's talk about preventative uses. And for preventative, we evaluate each group and we cannot feed cattle in the southeast U.S. (finish them for market), so they come to Kansas and Nebraska, Texas, because of the climatic conditions. We can't finish them. We can raise them on grass but the finishing operations are not economically viable. In coming there, they end up grouped and we have ones that go through backgrounding systems and we're going back and helping on health at the ranch to avoid uses. There are some groups we identify with the high-risk for disease. And in those groups, we will select either one of the injectable labeled antimicrobials for disease prevention or we may choose to use a high dose of tetracycline in the feed for a very limited period. The one is labeled for five days and the other is labeled for 14.

SENATOR FLOREZ: And tetracycline is for growth, right?

DR. HURD: No. For growth, the vast majority is just the ionophores in feedlots.

SENATOR FLOREZ: It doesn't promote growth?

DR. HURD: They do promote growth.

SENATOR FLOREZ: Okay.

DR. HURD: And, they prevent coccidiosis, which is a very major disease for us. But that's the group that I really raise a caution flag about lumping in with the tonnage, because there's just no documented relationship of the poly(ether)antimicrobials to anything in humans.

MICHAEL BOCCADORO: We don't use that drug in humans.

SENATOR FLOREZ: Let's get to….I'm sorry, did you want to say….could we have you give your testimony and then we'll keep going through questions.

UNIDENTIFIED: I'll wait for him to go.

SENATOR FLOREZ: Okay.

MR. BOCCADORO: Michael Boccadoro on behalf of the California Poultry Federation. I have Dr. Mark Bland with me today, to answer specific questions. We're here on behalf of the industry. We're not authorized to speak on behalf of any of the individual members of the industry. But we do represent all types—traditional, antibiotic free, and organic producers in California, and have for a number of years. We feel providing those choices to consumers is critically important. And we encourage all of our companies to continue to fill those niche markets as those markets continue to develop in California.

We use antibiotics in California, as in other states, for the prevention, treatment and control of disease. That use is done under the strict supervision of leading poultry veterinarians; it's not willy-nilly poured into the feed. And it is done so judiciously to minimize total antibiotic usage in our operations. Preventative uses are critical to reducing overall antibiotic use, critical to avoiding the use of more specific antibiotics, like tetracycline and penicillin; they're critical for food safety; and they are critical for the care and welfare of animals in California.

The types of products we use, like Bacitracin, which is a common sub-therapeutic use in the poultry industry, for the prevention of enteritis. It is available and has been available over the counter in every market, in every

state, in Neosporin and just about any other triple antibiotic cream sold. If there was going to be antibiotic resistance to this type of product, Senator, we would know about it.

SENATOR FLOREZ: Right. But nobody puts Neosporin on every morning on their face before they go to work, right?

MR. BOCCADORO: I fully understand that. But the point is; there is no antibiotic resistance to this product. If there was, we'd know about it today.

But those are the types of uses that the industry has.

As part of our commitment to consumers in California, the industry goes above and beyond what's required under federal and state laws. We test every flock under our quality assurance program for any residual antibiotics and we do not harvest those flocks until there are no residues left in the chickens.

Finally, we are very concerned about banning the use of antibiotic products and tools that the producers need in California. We believe it will lead to an increase in overall usage of antibiotics, as we've seen in other regions where those products have been banned. We believe it's going to lead to an increase in the use of more specific human (such as penicillin and tetracycline) antibiotics. It's going to lead to a decrease in animal welfare. If you can't treat, you're going to have additional birds that are unnecessarily suffering and unnecessarily dying in our operations. And we can cite specific examples of morbidity and mortality in the different types of operations in California—and it is higher in those operations—much higher in those operations that do not use antibiotics.

And finally, taking away the tools from California producers and the California family companies that operate….all the national companies moved out a long time ago. All we have left in California is family operations that have been in business here for over 70 years. You take their tools away, they'll no longer be here; they'll no longer be providing the union jobs—well benefited, well paying jobs that they provide in the San Joaquin Valley.

And so, we encourage the Committee and Members to be very cautious as we move down this path of unilaterally disarming our producers.

Thank you.

Dr. Bland is available with me to answer questions.

SENATOR FLOREZ: Okay. Thank you. Anyone else have any statements?

NOELLE CREMERS: Thank you, Senator. Noelle Cremers with the California Farm Bureau Federation.

A couple of quick points I'd like to make.

One, Senator, in your opening remarks you talked about if other countries or regions are banning antibiotics, shouldn't we follow their lead? And I'd like to make clear, that the European experience is a really good model to learn from, not follow.

What they did was ban the use of antibiotics…

SENATOR FLOREZ: Got it. But I'll hand you my statement. I didn't say that. I said, "The need to continue this practice seems to be questionable when countries, such as Europe and South Korea, have already banned such product." I didn't say to follow their lead; I said I think it's something we should….it seems questionable. And I read my statement for a reason, and so, I'm not sure where you said I was doing what?

MS. CREMERS: I just want to make the point that if we look at the European as a good model to follow, we need to look at what happened after than ban.

SENATOR FLOREZ: Okay.

MS. CREMERS: They actually had over a 100 percent increase in the use of therapeutic antibiotics. Those antibiotics are the same antibiotics that are used in human medicine. So you take classes of antibiotics that are not used in human medicine—the growth promoting antibiotics—and instead you replace them with the antibiotics that if a resistance was to show up in livestock, would have a real detrimental affect on human health. So I just want to make sure that we're clear that just banning growth promoting antibiotics doesn't solve the problem, because those growth promoting antibiotics are actually treating disease—that's another point I'd like to make.

Senator, when I'm sick I usually don't feel like eating and I often lose weight. So if you look at livestock, if we're treating them with a low level of antibiotics, it's keeping them healthy and as a sub-benefit, it makes them gain weight better because they're not having to fight any diseases.

SENATOR FLOREZ: I get it. But when you're sick at your home does the doctor come and inoculate your entire house because you're sick?

MS. CREMERS: Sometimes they should.

SENATOR FLOREZ: Do they?

MS. CREMERS: Unfortunately, no.

SENATOR FLOREZ: Okay.

MS. CREMERS: One last point. Senator Hollingsworth asked the question about the environmental impacts. And we've talked a lot about ionophores this morning. One of the things that's important to recognize is that Rumencin, which is an ionophore, has been proven to reduce methane emissions from cattle by 25 percent. So you have a greenhouse gas that you have, what could be classified as an antibiotic, and you're reducing that greenhouse gas emission from livestock. So if we banned that use, you would see methane emissions increase.

And I'd like to make one final point. The Union of Concerned Scientists, in a statement that they made in a federal court stated, "The Union of Concerned Scientists has never considered ionophores, which are approved by the FDA, for use against coccidial parasites as antibiotics. And UCS continues to adhere to that view. Since ionophores are not used in humans, their use in animals does not raise concerns related to the emergence of bacteria resistant to drugs in human medicine. Lumping ionophores with antibiotics incorrectly suggests a similar level and kind of public health concern that does not exist."

SENATOR FLOREZ: Okay. Thank you. So if we exempted ionophores from the bill you would be completely okay with it?

MS. CREMERS: No, I didn't say that.

SENATOR FLOREZ: (laughter) I'm just trying to go into the next logical level of what you were saying.

Senator Maldonado.

SENATOR MALDONADO: How long are these antibiotics in the animal after you've stopped treating them with it?

DR. APLEY: I can go to withdrawal times as the standard for that for when they're safe to go to slaughter. A lot of them 28 to 42 days for those…

SENATOR MALDONADO: And you say that at the feedlot they're about 150 days?

DR. APLEY: That they're in there, yeah.

SENATOR MALDONADO: So for about 100 days they're on this medicated feed and then the last 50 days they're cleaned out?

DR. APLEY: No, that would be from an injectable individual treatment. Some of the feed drugs that could be….like if we used the tetracyclines at the arrival period for control of respiratory disease, the withdrawal times on those are much shorter; there's less drug in the animal; the ionophores—very, very short. So if you switch over to looking at effects…

CROSSTALK

DR. APLEY: The residues are gone.

SENATOR MALDONADO: See, where I'm trying to get with this….and, actually, I appreciate Senator Florez for having this hearing because I've read articles, I've read stories and the data doesn't come out. It just could be someone writing a piece. But I feel like the industry has a perception problem.

And I'll share this with you because I don't know if Senator Florez has ever raised a steer or not but I have; or a hog, but I have; or a sheep? I have. And you get them when they're babies and you've put them on grass or range and then you go buy feed and then feed them out. And most of the feed that we buy has medication in it. Why? Because we want our animals to be healthy. At least, that's what we're told. But on the other end, we're never told if the meat has antibiotics and is it infiltrating to consumption by the people. And I think that's where I want to get to on this hearing is; is it hurting people? Because I want happy healthy cows—everybody does. They get fatter quicker; they produce better milk, whatever you want. No one wants sick cows. But

where I do have a rub, and I want to learn more of why they do this, is that why does a feedlot have to give antibiotics to animals that don't need it? And that question goes to me too, because my animals aren't sick but yet I go buy it just to prevent them from getting sick. Now, the point I'm trying to make to you, sir, is, is there any studies out there that say that humans are hurt, or they're immune system is gone, or they're immune to antibiotics where, I think that's where this hearing is going to? Am I correct, Senator Florez? Because when I say you have a perception problem, I'll just share this with you.

My wife has read some of the stories and she started questioning them. And she didn't question because of the science, she questioned them because of what she read. And she said, "Abel, maybe we shouldn't feed our animals medicated feed." And you know what? That feed is cheaper, to be honest with you, but we want the animals to be happy. But we don't know, no one knows. It's the perception problem that's out there. The bottom line for me is, is the animals are healthy, they're happier, but are consumers, are people who are consuming this meat, becoming immune to antibiotics? That's where I want to get to in this hearing.

DR. APLEY: And what I'd ask the Committee to do is….Dr. Hurd to make his statement and he'll address the issue of risk assessment, which is how I firmly believe we should address that issue…

SENATOR MALDONADO: But the problem is that you're a vet; you're not going to tell me the risk assessment for my 12-year-old boy. You're not a medical doctor; you're a veterinarian doctor.

DR. APLEY: Dr. Hurd can tell you the risk assessment for human effects on some of these.

SENATOR MALDONADO: Okay.

DR. HURD: Shall I go ahead and do my opening statements, even though we're into the….just so I get the….I came all the way from Washington yesterday, so I appreciate your letting me share these thoughts.

Thank you, Senator and Committee. I am Scott Hurd, currently associate professor at the College of Veterinary Medicine, Iowa State University.

Most recently, I served as the USDA Deputy Undersecretary for Food Safety. I was responsible for the public health of all U.S. consumers through the inspection of all meat, poultry, and ag products produced or imported in the United States.

I'm a scientist, a policymaker and I'm concerned, as you are, Senator, about the public health impacts of these practices. That's my first priority.

As the president said just last week, "We need to make scientific decisions based on facts, not ideology." Why? Well, because bacteria are nonpartisan. Salmonella, Streptococcus, they don't vote and they don't watch TV. The basics of microbiology, animal disease prevention, food production and risk assessment apply equally to us all. So if the new policies are not built on accurate science, they won't work; they won't make the world a safer place. So with that, I'd like to share with you a few key scientific principles that I believe we need to keep in mind as we make these important decisions.

The first question: Are we creating a superbug? The answer is, no. There is no evidence, at this point, that anywhere in the world superbugs have resulted from this longstanding practice of antimicrobial use in food animals.

We need to answer that question, as I said already, on a case-by-case basis. Even the Union of Concerned Scientists said ionophores are off the table. Why? Because people are not treated with ionophores. But every drug has specific actions. Every bacteria has specific responses and defense mechanisms which we call "resistance." Blanket bans are awkward.

The risk is low. The published scientific risk assessments done to date, of which I'm a coauthor of a few, show that specific bug-drug use combinations have demonstrated an extremely low to nonexistent risk. Therefore, Sir, the public health and the political benefit of antibiotic bans will be low, nonexistent, or even contrary to public health.

Which relates to my third point, which is key; antibiotic bans will lead to secondary public health consequences from the consumption of unhealthy animals.

And if I may point to a question you raised earlier: Are these drugs just making animals grow better? Actually, we thought that was true but if you looked at the graph in the handout I gave you, it shows the experiment in Denmark where growth promoting antibiotics were removed from pig production. The number of pigs needed to be treated doubled and that has maintained since the ban in 2000. So they apparently were doing good that we weren't aware of; they were preventing disease.

So with that, I'll be happy to answer any of your specific questions.

SENATOR MALDONADO: So what happens to an animal that gets sick? I mean, it's really sick.

DR. HURD: Well, that's a key point. And to a question you asked about earlier: The animal is treated. He's somehow identified as having been exposed to antibiotics. He's put in a sick pen or he's marked in some way and that animal is monitored carefully until they're better and they don't enter the food chain until the residues have been lost.

See, I even made the mistake. There's a big difference between antibiotic resistance (and that's what we're talking about when we talk superbugs) and residues. As head of the Food Safety Inspection Service, the system is built to prevent all residues. There are no molecules of antibiotics in the livestock. Anyone who violates that is penalized immediately. Animals are tested for residues. So we're talking about an issue of resistance.

So, an animal is sick; until he gets better and then the antibiotic withdrawal period has passed.

SENATOR MALDONADO: And this will be tested at the processing plant?

DR. HURD: Yup.

SENATOR MALDONADO: So every animal gets tested…

DR. HURD: Every animal doesn't get tested, but those that look like they may have been treated in some way are tested and then there's a random selection that's tested also.

SENATOR FLOREZ: Thank you. Let me ask; anybody else on the panel? And then we'll go back to some more of our questions

What was your title?

DR. HURD: I was Deputy Undersecretary for Food Safety.

SENATOR FLOREZ: In what administration?

DR. HURD: The Bush administration.

SENATOR FLOREZ: Okay. And how long were you there?

DR. HURD: Just a year.

SENATOR FLOREZ: Can I get your candid thoughts on the president's thoughts of reformulating food safety? His words, we haven't changed them since FDR or something like that.

DR. HURD: Well, the food safety laws that we operate under are relatively old. The big challenge is realizing that Food and Drug Administration works under a different law than USDA FSIS.

SENATOR FLOREZ: Do you think they need to be redone?

DR. HURD: I think FDA needs to do more inspection. They need to do it the way USDA has been doing it since 1906.

SENATOR FLOREZ: Okay. Thank you.

Let me ask the panel on the limits. We've been talking about the proper use of antibiotics, so let's get back to, not the ban discussion, but the proper use, I think mentioned by the first witness. Could we be sitting here, now, let's say 10, 20 years from now with the industry is using more potent antibiotics? Look out a little further. I'd like to ask the science folks this question, not the users. I mean, could we be sitting here 10 years from now, 20, using these more potent types of antibiotics given where we're going?

DR. HURD: I think that's a very fair question. And I would say absolutely no. I think it's very possible that there will be 50 percent less antibiotics used in a decade or two from now, because producers realize that they have to be careful when they use it. It costs money. It's a tool, like anything else. They don't use them unless they have to. Drug companies are not developing new and more potent drugs for the use in prevention. They are

for treating of sick animals, like we are in humans, but there's not a lot of new products being developed.

SENATOR FLOREZ: Let's get clear on that. I think it goes back to Senator Maldonado's and I, just question for the day; it's not a judgment. I'm just trying to understand. You keep mentioning, as many panelists have, it's for the treating of a sick animal. Senator Maldonado doesn't have any sick animals, yet he's buying feed that….so I want to make sure we're real clear on the distinction of treating a sick animal. And the reason I mention that is that….let me ask a question for the science folks in terms of documented exposure to a microbe. I mean, shouldn't there be documented if you will, some sort of an exposure of an animal before we treat a whole flock to even a low level antibiotic use in their feed? I mean, shouldn't there be a trace that something is wrong before we just blanket out this; even at low levels?

DR. HURD: I think that's a very valid question and the veterinary profession has thought long and hard about it. And honestly, Senator, I'm sorry to say, but I think you may have wasted your money. The reason I say that is because there has to be a need; there has to be a threat. And what I do talk about is prevention and treatment. And I think this is again, where we have to be specific on a case-by-case basis.

What happened in Denmark is specific products that were used to prevent illness, essentially, that's what they were doing. And this is back to your key question; if we remove those products that are used to prevent illness….and, of course, the old adage "an ounce of prevention" and all that….they had to treat those animals and the interesting thing, Senator, is they had to treat those animals with drugs that were more similar to the humans. And if you look at my testimony, there's quotes from the World Health Organization that I think are extremely telling. When they evaluated the ban, they said it's probable that the termination of antimicrobial growth promoters had an indirect effect on resistance among typhimurium, and this is typhimurium in people, so they had to use more human corollaries to treat. So maybe it would be better….because of the way we raise livestock, it would be

better that we prevent the illness than treat it because when we treat it, we are going to our own medicine cabinet. And that's why I make the point about secondary consequences that really concern me.

SENATOR FLOREZ: I got you. So let's go back to that comment, so it's better to be preventive, and so, let's qualify it. It's not just treatment, it's treatment and prevention.

DR. HURD: Yes, it is. Absolutely.

SENATOR FLOREZ: And let me go back to…go ahead.

SENATOR MALDONADO: I think that's what happened to me because I went to a feed store and I said, "Hey, I want to get them to 100 pounds and then I'll finish them off with something else." He says, "Well, there's a flu going around so get this medicated stuff." It was prevention, right?

SENATOR FLOREZ: And given it was prevention, our job is, going back to the original question, which is, as we, in a preventative way, provide some low levels of this, is there, 10 years from now, 20 years from now, a resistance to even our low level today, so we have stronger more potent types of antibiotics because we are, in essence, preventing? It's the human being I mentioned earlier, who gets up and takes an antibiotic every morning for whatever reason preventative nature and yet isn't able, you know, to resist so therefore they have to have stronger drugs down the road. I mean, are we going to be looking at stronger drugs in this field if we have a low level prevention now 10, 20 years from now?

DR. HURD: I think that's a very key question. And when I first started studying this issue myself, a number of microbiologists (we were sitting around) reminded me that these drugs used in food animals have been around for 30, 40, 50 years. And if we talk about the evolutionary process, the first question is why are we not already awash in resistance? So the fact is, we're seeing the scenario you asked about; we're seeing it already. And, in fact, it hasn't happened. We haven't become awash in resistant organisms related to the drugs used on pig farms or poultry farms or whatever. We haven't seen the experiment you asked about.

SENATOR FLOREZ: Got you.

DR. APLEY: Senator, I'd just like to follow up, if I could. I served for quite a few years on the committee that sets the break points for veterinary medicine that says if it's susceptible, intermediate or resistant, so when you hear about resistant, we were the ones on the veterinary side setting that. And there's a lot of things that go in that to set those.

But one of the things I've noticed in monitoring sets of data from diagnostic labs or you can go on and look at NARMS data, is that often we talk about resistant and sometimes that actually has a clinical application that doesn't. But I drew a quick five-cent histogram here:

What you see in some of these, and I'll show what I drew, is stability in populations. And when you look at some of the pathogens I've been monitoring for, like, the tetracyclines, you get a population over here that takes very, very low amounts of the drug to inhibit growth and over here it takes higher amounts. And what we've seen, for example, at the tetracyclines, looking at different bacteria, is that it's stabilized. So the concept is, oh, it's going to end up until all of these are over here in the resistant sides and drive, and, actually, we tend to get what we call this biphasic population and it stabilizes.

And the other issue about more and more potent drugs coming in to animal production, is they would all be evaluated through the FDA approval process for that and that's a very, very rigorous stand.

SENATOR FLOREZ: All right. Let me ask you both, again, getting to another level of prevention and not Senator Maldonado's feedbag, but the purpose of distributing antibiotics to all animals. And let's just go to the egg industry for a moment if I could. I've understood, in some conversations, that they even treat….antibiotics are even given while in the egg, is that correct?

MARK BLAND: No. Where did you get that information?

SENATOR FLOREZ: One of the persons sitting in the back, from the industry. So is that incorrect, that they don't make a little hole in the egg and provide some sort of…

MR. BLAND: Okay, clarify.

SENATOR FLOREZ: I just did. Why don't you clarify for me since you've just said an emphatic "no?" They don't do that?

MR. BLAND: As far as putting antibiotic in the feed?

SENATOR FLOREZ: No, in the egg.

MR. BLAND: Oh, I'm sorry. I was thinking of the layer industry. Yes, they use Gentamycin, another product called Naxcel. I was thinking of the layer industry. And my apologies.

SENATOR FLOREZ: That's okay. I said the egg industry.

MR. BLAND: Yes, you did.

SENATOR FLOREZ: So any comments on that? So you take back your "no?"

MR. BLAND: I'm sorry.

SENATOR FLOREZ: Do you take back your "no?"

MR. BLAND: Well, not with the layer industry.

SENATOR FLOREZ: Okay. How about the egg industry?

CROSSTALK

SENATOR FLOREZ: Let's start over.

DR. HURD: If I might address that one. I was involved with the issue related specifically to that with USDA labeling of products. And it is a normal practice when an egg is vaccinated. Actually, 18 hours before hatch, it's given a vaccine that prevents a viral disease and also some antibiotic to prevent bacterial cross contamination.

SENATOR FLOREZ: Explain that to us. I mean, that's interesting for me just to understand exactly the distinction—given some and given the other.

DR. HURD: I'm sorry, the distinction between?

SENATOR FLOREZ: What's put in the egg?

DR. HURD: The purpose of the injection in the egg is to put in a vaccine. So what they do though, because there's potential, there's some machine that's vaccinating many eggs at once, potential bacterial cross contamination during that injection process. You have a nice sterile egg; you stick a needle in it; so in order to prevent that egg from dying (it's only 18 hours from hatch), some

antibiotic is added. You should note that that's also done in eggs that are labeled as organic. It's a standard industry practice. The antibiotic is out of those chickens usually within a number of days, but before the chicken goes to slaughter, that antibiotic has already been removed.

SENATOR FLOREZ: Oh, okay.

DR. HURD: It is; it's preventing a bacterial cross contamination and death of the egg.

SENATOR FLOREZ: Thank you. I just wanted to get that on the record.

Also, the difference between non-therapeutic and growth promoting antibiotics—we've been bantering this a little bit today. Are there differences in standards? Explain this to us for the record.

DR. APLEY: The FDA, for example, doesn't recognize non-therapeutic. They would recognize feed efficiency, rate of gain, prevention, control, treatment, those types within a specific production class and then according to the labeling. Before we go a little further into that, I want to make it clear that any extra label use, off label use of an antimicrobial in the feed, is illegal. So they may only be lawfully used as labeled.

SENATOR FLOREZ: So the use of antibiotics in food in terms of extra label drug use…

DR. APLEY: Is illegal.

SENATOR FLOREZ: And it requires a prescription by a veterinarian, I would assume?

DR. APLEY: There are only two drugs for use in feed that require….what's called a veterinary feed directive rather than a prescription and that's one antimicrobial for feed in swine, and one in fish, or only two BFDs. But a feed mill or a producer may only use that feed antibiotic as specifically labeled. Any differences in disease rate or anything is illegal.

SENATOR FLOREZ: Okay. Thank you for that. We are now back on the distinction between…

DR. APLEY: The FDA actually approves the label, rather than the drug, and then how the drug is manufactured. And so on that label, if I'm a

company coming with a drug, I would decide to pursue certain applications to that drug on the label. So I would conduct studies and in those are target animal safety, environmental effects, food safety (which has to do with the residues); now there is a microbial safety evaluation. And in those studies, I may be able to show that not only did they, if it is a feed efficiency drug, that per pound of body weight added, they ate less feed. If I'm able to statistically show that, I'm able to get that label. If I show that they gained at a more rapid rate, I'm able to get a "rate of gain" label. And that's how the FDA recognizes it.

SENATOR FLOREZ: Okay.

DR. APLEY: And then again, as we've discussed, some of the reasons for that rate of gain or feed efficiency may be disease or pathogen reduction, as Dr. Hurd mentioned they found in Denmark.

SENATOR FLOREZ: Okay. Let me jump back to the egg issue; poultry issue in terms of flocks. Is there ever an opportunity for….I mean, these flocks, unlike Senator Maldonado's animals, he doesn't have 30,000 in a flock. So you have a flock of 30,000, is there ever a time where a flock isn't treated—all of them—all 30,000 all at once?

MR. BLAND: When they're not?

SENATOR FLOREZ: Yes.

MR. BLAND: No.

SENATOR FLOREZ: So all of them are?

MR. BLAND: Commercially. Now, when we're talking about breeders, that's different.

SENATOR FLOREZ: If we're what?

MR. BLAND: If we're talking about breeders then we can sometimes treat individually.

SENATOR FLOREZ: Okay. And explain how that works—the breeders?

MR. BLAND: If I'm in breeders—turkeys—dealing with toms that are individually penned and we have an incidence with fowl cholera or erysipelas and I don't want to treat the entire barn, I can treat those birds if they're showing clinical signs (usually with an injectable).

SENATOR FLOREZ: Okay.

DR. HURD: I'm sorry, Sir. Are you asking is there ever a time when a flock gets no antibiotics?

SENATOR FLOREZ: Yes.

MR. BLAND: Oh, I'm sorry. Gets no antibiotics?

SENATOR FLOREZ: Yes.

MR. BLAND: Oh, yes.

DR. HURD: For broilers; antibiotics are not used much at all in broilers anymore.

SENATOR FLOREZ: Okay. Thank you. I'm just trying to understand that from a flock perspective, is there an opportunity for that.

DR. HURD: And it's true for layers. Layers are never given antibiotics unless they're sick, is that correct?

MR. BLAND: I've been doing it for 10 years. I've only treated 4 flocks in 10 years.

SENATOR FLOREZ: Okay. Thank you. From the scientists point of view; are there any side effects of prolonged use of antibiotics?

DR. HURD: On the animal health?

SENATOR FLOREZ: Yes.

DR. HURD: No, because….the only side effects….I think you're speaking in terms of chemical toxicological side effects; all of these drugs have been safety tested to prevent that and if they're used correctly there's none of that.

SENATOR FLOREZ: Okay. Let me go back to Senator Maldonado's important question and that is the issue of humans and animals. So you mentioned that from a superbug perspective, there's no tie-in at all; never will be; won't happen?

DR. HURD: Unless by chance some new drug is approved that somehow does complete the necessary set of conditions. And I have in my handout, an example of the steps that must occur in order to get from use on the farm to human health harm. There's a number of steps that have to occur. At this point, based on the drugs that are currently used, I don't see that happening.

The only drug for which there was even a slight risk has already been removed from the market and that was fluoroquinolones in poultry, again, a case by case decision by the FDA.

SENATOR FLOREZ: Okay. Do you know how many human pathogens are symbiotic, meaning the animals and humans can be affected?

DR. HURD: Well, yeah. There's a large number.

SENATOR FLOREZ: 1,400 is my….64 percent which are transferable, so how does that…to us?

DR. HURD: Fortunately, it's narrowed down to a few when we look at bacteria not viruses because viruses are not susceptible to antibiotics. And if we look at the food borne route, then we're generally able to focus on a few, such as salmonella and campylobacter.

SENATOR FLOREZ: Okay. So in that sense, there is some transferable?

DR. HURD: Sure.

SENATOR FLOREZ: And I'm not sure what Senator Maldonado….when you said, no; from a superbug perspective it's, no, but from a transferable perspective between humans and animals it's, yes.

DR. HURD: Yes. Certainly, I mean, that's where a large percentage of what we believe food borne illness comes from is the transference of bacteria that are living in animals transferred to humans.

SENATOR FLOREZ: Okay. And do you believe there's a parallel between antibiotic resistance in humans with continued low use of antibiotics? Kind of a follow up/big question to that; some sort of parallel between antibiotic resistance in humans—the same question Senator Maldonado asked, given your…

DR. HURD: Do I think there's a parallel in…

SENATOR FLOREZ: Yes, between antibiotic resistance in humans and the continued slow use of…

DR. HURD: No, I really don't think there is. And that makes me think of specific….the example that some may refer to later, the methocillin resistant staph aureus is a good example. We find resistance in people. We find similar

organism in animals, and people immediately make the jump all the way from the farm to the fork. The Center for Disease Control has studied that particular bacteria and they said that there's no evidence for food borne transmission or even animal transmission. The type of resistant bug that we're finding in pigs is a different clonal type than the ones found in humans. And people tend to make a correlation like that, but then actuality, 30 percent of humans have staph aureus on their skin; one to two percent already have this resistant type. And the other thing, as I said before, these antibiotics being used in animals have been used for 30, 50 years and the superbug would have emerged by now.

SENATOR FLOREZ: Got you. So are you saying that in those 30 to 50 years that the animals you worked with, there's been no resistance to any of these?

DR. HURD: There has not been a global increase in the resistance levels. Now on a specific farm, resistance may develop and you have to switch products, but that's why the veterinarian and that's why we need these multiple tools. But, no, there hasn't been a global increase.

SENATOR FLOREZ: And how do we know that antibiotic is being effective or not, then? Is that a veterinarian decision on the farm?

DR. HURD: Yes. And, hopefully, your veterinarian is there doing the kind of things Dr. Apley referred to. Is taking the organism and testing it for its breakpoints, if you will—how strong is it against a specific drug?

SENATOR FLOREZ: And how doe we measure effectiveness? How do we measure whether or not, indeed, you switch over?

DR. HURD: Do you want to address this one?

DR. APLEY: Yeah, I'll give you an example of the report I just sent out yesterday morning to a feedlot that I work with. And in it, we looked at both the overall feedlot records. Whenever an animal comes through for treatment, we give it an ear tag, specific number, and then we trace that animal all the way through. And I looked at the data. We evaluate our case fatality rate—how many die of how many are treated? We look at our first treatment, second

treatment, success rates. How many end up going on and even though they don't die, maybe don't return to full production? We've got all those numbers. And there are a lot of peer reviewed studies out there comparing different antibiotics for use in the treatment. Even 100,000 head feed yards I've worked with, every animal that was treated is individually identified and we have the numbers.

SENATOR FLOREZ: Okay. That's the way that you have monitored, correct? So in other words, everybody has these monitors, has you around?

DR. APLEY: There's a range in the industry. Some producers keep their records in a notebook or on three-by-five cards. We use computers. It depends on how big an operation.

SENATOR FLOREZ: And how are we to know if, indeed, there developed some antibiotic resistance among flocks or herds in California? How would we know that? Is there a monitoring system for that?

DR. APLEY: Your first line of defense in that is the veterinarian working with the producer and noticing a change in the health of the animals and then investigating and going.....nationally, there is a National Animal Microbial Monitoring System that's co-administered through USDA, FDA and CDC that monitors through what they can find in special projects or on food samples and look at that. And the producers know the animals so well that they're going to get help when things go awry. They can really tell when things are going south.

SENATOR FLOREZ: Okay. And in terms of monitoring and collecting this data, is that in existence, then, today in terms of these? Because we started with the threshold question which was, what's the percentage of antibiotic use and we didn't know that, so I'm just wondering, what's the ability to monitor and to report these types of uses? I mean, is there some sort of prescription statewide databank; is there some sort of picture of how many antibiotics are on the farm in California, in our animals? I mean, those are things, I think some consumers might want to know or we might want to know. Is there any big number or something we can...

DR. APLEY: The only thing I can think of is when the National Animal Monitoring System does it every year; it's just how many producers do certain practices. It isn't individual drugs. It isn't that type, like you're asking for.

DR. HURD: And I'm not sure it would give you the picture you're looking for, Senator, because we're losing sight of a very important fact in this whole discussion when we look at this just from a California perspective.

SENATOR FLOREZ: Well, it would be good for my picture. And I don't know how you speak for it, but I think getting good data is always important and holding on to data is important. I hear a lot of talk about science, and I'm not sure how you can do science without understanding how much is out there.

MR. BOCCADORO: The majority of the meat coming into the state that this legislation is not going to change, is coming in from other states. And so even if you had data on…

SENATOR FLOREZ: So do nothing?

MR. BOCCADORO: No, Senator. But that's one of the key points here, is the majority of our meat products are imported into California. Poultry is probably sitting at the top of the heap, but 50 percent on in-state consumption being from in-state production. But you can't unilaterally disarm in California and expect to change anything from an animal welfare standpoint, from an antibiotic resistant standpoint, or gaining any kind of a full understanding of what's actually in the food supply.

SENATOR FLOREZ: We don't know what's in the food supply, right? Anyone on these panels want to tell me how much antibiotics are in the food supply?

DR. HURD: The Food and Drug Administration just this year, has implemented regulations that will get more of those types of data that you're interested in. And I think everybody is in agreement that we'd like to have more specific data about usage. There is always going to be a challenge, because a drug is labeled to use at different doses and we'll never know on the farm how often that happens.

SENATOR FLOREZ: And because we don't know that, should veterinarians have to report antibiotic use or prescriptions to a statewide databank—would that be helpful?

MR. BLAND: I think if you want to collect the data. No difference with Senator Hollingsworth, when he talked about early nineties when you had to report 100 percent use of pesticides; that's how you got that data. Until you implement that or ask for that and then describe how you want that data, I mean, yes, it's available but who's going to collect it?

SENATOR FLOREZ: Oh, I'm not sure what Mary Ann Warmerdam would think that her use of trying to bring down VOCs through pesticides is sitting on a shelf, but I think she had to have some data in order to do that.

MR. BLAND: I didn't mean that. I meant, if you want to collect that data, then you need to put something in place to collect it.

SENATOR FLOREZ: Right. Exactly. And that's why I asked you whether we should have a statewide databank in order to get a clearer picture as to how many antibiotics in farm animals are in the state; that's all I'm asking. Was that a bad thing?

MR. BLAND: No.

SENATOR FLOREZ: Okay.

MR. DALEY: Could I follow up on one comment you made, to make sure I understood? And that was with respect to how many antibiotics are in the food supply. FSIS has pretty extensive studies. I want to make sure that (and Dr. Hurd alluded to this) we aren't confusing residues and resistance. Because if you're talking about residues, there is good data showing that we have done a phenomenal job in the residues that are being tested. So it's separating those two issues.

And maybe just one follow-up comment. And again, I'm only speaking for the beef producers in California, and, obviously, the feedlot industry I'm connected to indirectly. But I am concerned that I've heard a lot of comments about indiscriminant and use of antibiotics for the full length of the feeding period and that's not true. We're very careful not only because of cost, but

typically if it used, it's used only at the initial phase and only for cattle that may be under stressed conditions. It's very careful in terms of when the animals are used.

There's a growing demand for natural products, as you're aware of. And there's many feedlots who do their very best to have zero treatment with any antibiotics from birth to harvest. And the market is taking care of. If there is a demand for that, producers will work harder and harder but it's a very difficult process. And as you look at some of our progressive feedlots in this state, they have done a very nice job of only using antibiotics in the most necessary times only for the stressed animals and usually only at the beginning of the feeding period. Somewhere we got to this discussion that it's for the entire 150 days. And as long as you take ionophores off the table, that's not necessarily true.

Thank you.

SENATOR FLOREZ: Okay. That's very helpful. Yes, Senator Hollingsworth.

SENATOR HOLLINGSWORTH: I'm sorry I was out. If somebody has addressed this issue already, but we have already discussed that there's two different issues. There's residue issue, which is being targeted by the FDA and that they are dealing with and that there really isn't much evidence there that there's residues in food products. The second issue is bug resistance that are pathogen resistance; if there's any connection or not between feed and preventative use of antibiotics with creation of these superbugs—the title of this hearing. Have you seen any peer reviewed studies that show that there is a link in any correlation between drug resistant pathogens in humans and drug resistant pathogens in the meat supply? Has there been any showing….just because "A" has happened; we've seen an increase in drug resistant pathogens in farm animals and we've seen a drug resistant increase of pathogens in drug resistance in humans, are those even the same strains? Have we seen any peer reviewed studies that there's a correlation—a connection there?

DR. HURD: The one that did suggest a correlation was between the use of fluoroquinolones in poultry and human fluoroquinolones resistance in campylobacter. The other things, publications; I've published two our three showing specifically no relationship between, I'll say, macrolied use in food animals and resistance in humans.

SENATOR HOLLINGSWORTH: And for example, pork, you have a staph strain, correct, that has shown an increase worldwide?

DR. HURD: Right. The staph aureus, that I mentioned, is currently something that people are concerned about but there doesn't seem….that's a contamination on the skin of the pig and as it is on the skin of humans and humans seem to have about as much of it as pigs do.

SENATOR HOLLINGSWORTH: Are they the same strain?

DR. HURD: No, they're not even the same strain.

SENATOR HOLLINGSWORTH: So it's not very likely there's a correlation?

DR. HURD: The CDC said, at this point, there is no correlation between pig….the pigs have not provided a source of that. And so, I think it is a disservice when articles, like *The New York Times*, suggest that there is a correlation; that's simply not scientific based and it's not supported by the Centers for Disease Control.

SENATOR HOLLINGSWORTH: How about E-coli with beef?

DR. HURD: Ah, I'm glad you asked that one. A key misconception often around right now is that many of our current food safety problems, like salmonella in peanut butter, like E-coli in beef (I started working on the day of the hallmark recall as Deputy Undersecretary for Food Safety, the largest meat recall in U.S. history), it has absolutely nothing to do with antibiotics, okay? There's no antibiotics given to the peanuts.

SENATOR FLOREZ: We would have had a hearing on that if it did, trust us.

DR. HURD: Yeah. People often mix those concepts together. The E-coli that we fight against is susceptible to all antibiotics. The salmonellas that we fight are susceptible to most antibiotics.

SENATOR HOLLINGSWORTH: But there's not really a drug resistant superbug in the E-coli species?

DR. HURD: No, that's not at all related.

SENATOR HOLLINGSWORTH: So all the news about E-coli and these new strains of E-coli, they're not drug resistant E-coli?

DR. HURD: They're not drug resistant, no. And interesting; there was a drug resistant salmonella that was floating around the world a few years ago but salmonellas are like fads—the serotypes come and go and that one has gone now.

SENATOR FLOREZ: Let's continue on with Senator Hollingsworth discussion on MRSA for a moment, just to get your comments on the record. How often do we check for MRSA in our operations?

DR. HURD: It's only been very recently that we've gone to look at its prevalence in pigs with some studies commissioned by the Pork Producers Council.

SENATOR FLOREZ: Okay. And is it only recently in the pig industry; how about in beef and poultry?

DR. APLEY: Beef, we have not had issues with it that I'm aware of.

MR. BLAND: I have no connection to poultry that I'm aware of.

SENATOR FLOREZ: Okay. And so, is there any thought that we would check for MRSA in operations? You don't know it's there because sometimes we don't look, or we don't look because we don't think it's there, so which one is it?

MR. BLAND: Well, poultry that's submitted to diagnostic lab, they're culturing for everything. So I imagine that if it's there, they would have picked it up.

SENATOR FLOREZ: They would?

DR. APLEY: And staph isn't a primary pathogen in beef.

SENATOR FLOREZ: I'm just asking the general question. Is there any thought that....so it's not part of the regular testing of our animal flocks or herds? You know, in Louisiana, 5 out of 90 samples of retail pork tested positive for MRSA. I don't know, that's Louisiana. But if we're not looking for it here, how do we know?

DR. APLEY: I think we will be looking for it more.

SENATOR FLOREZ: Okay. That's a better answer; I like that answer a lot better.

DR. APLEY: One place that you would be doing routine cultures, say, mastitis, if it was there, they would be catching it in the diagnostic labs. Because what MRSA means is it's resistant, basically, to all beta-lactams, and so, they'll pick it up.

SENATOR FLOREZ: Yes, exactly. And so, when you find 5 out of 90 samples of retail pork in Louisiana test positive for MRSA, I think, from a California perspective, it's something that we would definitely ask at a hearing and ask whether or not we are, part of our regular testing process, looking at it from a perspective of our animal flocks and herds. Would that be a bad thing to require as part of our regular testing, testing for MRSA, given what's happened in other states?

DR. APLEY: Well, when you look at the cost of a culture and the way they're probably going to get the first lead that it's MRSA, is doing a phenotypic resistance test and maybe do a genetic screen. But we're probably looking at adding ten bucks a pop for our production cost to do that. So I would say that unless we had good evidence from studies that it was present, and, assessment showed that it was a potential public health problem, that I would be somewhat refractive to recommending that.

SENATOR FLOREZ: Okay. Senator Hollingsworth.

SENATOR HOLLINGSWORTH: Well, on that issue, $10 per test for MRSA, would that be per carcass; if you're going to test the carcass at the slaughter house?

DR. APLEY: That's at the top of my head but it would certainly be in that range.

SENATOR HOLLINGSWORTH: For a carcass that's valued at about how much?

DR. APLEY: You may have been out when I mentioned this, but on a live price, 1,300 pound feeder animal, if you look out over about 20 years, we average about $10 profit per head.

SENATOR HOLLINGSWORTH: Those pork samples that were testing positive for MRSA, did they address where the contamination was coming from? Was it in the production or was it in the processing? I mean, if you went to any hospital, any cafeteria, these desks here and swabbed, you'd probably find some strains of staph that some of them might be drug resistant, correct? So the point of contamination was not addressed?

DR. APLEY: Yes or no, it was there. And one of the interesting things from one of the studies was MRSA was found in a herd that did not use antibiotics. So it's, yes, it's there or not. I'm not sure the data would show at this time that it's an antibiotic driven. And as Dr. Hurd said, so many of what we see in the presence in a herd or not present in a herd, can be clonal dissemination or things that come in and pop and go away, the way bacterial populations would occur.

SENATOR FLOREZ: Thank you. Senator Hollingsworth, I want to be clear, I'm not necessarily making a connection between antibiotics in this context, but I just want to know if we're testing for it; that's the main question. And it's $10 a test or something of that sort.

DR. APLEY: That's completely going off a typical D lab, what it would take if you submitted a sample to D-Lab…

DR. HURD: That's a state subsidized price.

DR. APLEY: That's a state subsidized price.

SENATOR FLOREZ: State rate.

DR. APLEY: On the human side if you do a culture and susceptibility, you're up to 50, 60 bucks.

SENATOR FLOREZ: Okay. Gentleman and ladies, thank you very much for your testimony. I appreciate it.

GROUP: Thank you for the invitation.

SENATOR FLOREZ: Okay. Let's move onto Panel 2. And if the folks could come up, that would be wonderful. You know who you are. And then we can make introductions and we'll continue on.

Thank you for joining us. I think I'd like to turn if we could, to Mark McKay who's here and maybe just get your impressions and then we'll turn onto the panels in turn. You do a bit of a different operation; maybe you can explain that and then maybe I'll have a few questions.

MARK MCKAY: Okay. Thank you very much. I'll do a little introduction. I have some comments that I'll make about who I am and what our company does.

My name is Mark Mckay. I'm the CEO of a company called Coleman Natural Foods. We are a private family owned operation that has….we operate here in California as a company called Petaluma Poultry. Everything that we do is naturally raised, and for us that means that the animals are raised without the use of antibiotics either in ovo, sub-therapeutic, non-therapeutic in all forms of our production practices. We have 300-plus employees. We have operated here in California for over 40 years. We are a $130 million-plus annual revenue company.

There are some things that we do differently or a little bit differently that separate us from the rest of the industry. We are ISO 14,001 certified for sustainable management practices. Part of the reason I bring that up is because when you are certified under the ISO requirements, you document the things that you're going to do; you have an independent reviewer come in and verify that you're continually following and upgrading your production practices—that takes place all the way through our farming operation. We operate our own farms. We employ family farmers both in Sonoma County, Marin County, and through the Central Valley of California. We operate a feed mill. We have a hatchery. We have a processing plant. We have a distribution

center. We sell the products that we make here in California, literally throughout the western United States.

We also have two sister operations to our California operations; one based in Washington, north of Seattle, the other one based in central Pennsylvania in Lancaster County. Both of those operations, as well, are completely free of the use of antibiotics, both sub-therapeutic and non-therapeutic antibiotic use, as well.

For us, the emphasis of our business and part of the reason for wanting to speak here today is our focus is actually on the health of the animal. And I understand that the premise here is the, sort of, connection between antibiotic use and animal feeding and the connection to possibly resistant bacteria in humans. The connection for us is that we believe that if you raise an animal without the use of sub or non-therapeutic antibiotics, you actually are a more humane producer of the animals. We actually have to focus much more diligently on the husbandry practices that we employ in order to provide a much more stress free environment for the animals.

And actually listening to the earlier panel, part of my comments, especially from the producer and Mr. Daley, the cow/calf operator, I heard him say the same things that they do in their operation that we do in ours which is, the better you do with the way that you raise the animals, the less likely you are to either need to use sub-therapeutic or to even have to do treatment from a therapy standpoint relative to antibiotics.

And I actually made a list. Some of the things that we do, we actually do have….we increased the space available in our commercial operations for the animals that we raise. We focus on clean bedding and litter, great quality feed, clean water. We actually have a veterinarian on staff who is constantly evaluating the health of our birds, as well, just to ensure that there are things that we can do from a management practice standpoint that continues to reduce the stress. If you reduce the stress, the birds are healthier. If the birds are healthier, they'll less likely need any kind of therapy treatment through the process, as well.

We also employ….and all commercial operations do this, as well, not just the people that do it the way that we do it. But we employ very rigorous biosecurity procedures. We keep track of who's on the farm; where they've been; can they go from farm to farm? We don't allow them to work their way through the production practice. We have very rigorous pest and predator control procedures as well. Those are elements that can introduce and basically kind of cross contaminate flocks throughout the process as well, so we spend an inordinate amount of time making sure that those procedures are ample for our production practices as well.

We believe that in California, and I heard it earlier from the poultry federation group, that we allow consumers to have a choice and part of the choice that they're making is that there are, readily available in California and a growing demand nationwide, for naturally raised and organically produced products, which we think is both good for our business and good for California agriculture.

I will point out, and I don't think anybody has mentioned it so far, but there is an element to the proposed to legislation that specifically talks to the school lunch feeding programs. On an ancillary note just from our business, we have products in the marketplace that are specifically designed to both meet the CN (Childhood Nutrition) requirement programs for school feeding, but also, we use the meat products from our raising practices as the primary ingredient in those products. So in this case, we're able to do both. We're able to meet the sodium, caloric, protein, fat content requirements of the school feeding programs and also provide for us, antibiotic free meat sources but we can also do trans fat free and gluten free products as well, which are becoming much more popular from a school feeding program standpoint as well.

Thank you.

SENATOR HOLLINGSWORTH: The next witness please. Okay, well, I'll question the witness if nobody is ready to go.

If I might just ask you a couple of questions? It sounds like your operation is very similar, if not the same, as most operations in California that are poultry producers.

MR. MCKAY: I would say, yes.

SENATOR HOLLINGSWORTH: Except you may have larger cages?

MR. MCKAY: We don't have any cages. We have large barns.

SENATOR HOLLINGSWORTH: They're all socialized birds? They get along well?

MR. MCKAY: Actually, all the animals we raise, and I didn't bring it up because I didn't think it was germane, but all of the animals we raise are also free range, so they have outdoor access as well, correct.

SENATOR HOLLINGSWORTH: What do you do if you're not using antibiotics if you have a breakout of a disease of certain individuals or certain pens?

MR. MCKAY: A fair question, and I heard it earlier as well. We have a couple of different things that we do. There are some homeopathic remedies that are available that don't include the use of antibiotics that can specifically address some of the secondary type of infection issues that you're talking about from the bacteria that are involved. The second part is….and we haven't had to do it, but we do reserve the right that if therapy was required for the humane treatment of the animals, and I think that that's a common thread throughout; it's actually a requirement as a certified organic producer that you provide for the therapy if it's required for the health and humane treatment of the animal. You have to take it out of the program and it can no longer be sold into commerce as antibiotic free or certified organic. But there are requirements that we provide for that opportunity.

SENATOR HOLLINGSWORTH: How often do you have to do that?

MR. MCKAY: We haven't had to administer in ovo sub-therapeutic or therapeutic antibiotics in over a decade.

SENATOR HOLLINGSWORTH: So what do you, then, when you don't get to that point? Do you separate the affected birds? Do you cull them?

MR. MCKAY: Animals can be culled if they're in….again; we have procedures that are part of our regimen for taking out, obviously, injured, hurt or animals that aren't going to make it to market age. We do, do that. We provide rest pens and forage areas within our houses. We build little three-sided compartments. We also provide roosting areas that are hay bales and other types of things within the barns to allow them to separate themselves. But if we did need, and, again, as I mentioned before, if we had a requirement….and it's actually part of the legislation as well. I mean, it allows for the therapeutic administration of any medication that's required. It's actually one of the things that appeals to us. It would be…

SENATOR HOLLINGSWORTH: I'm just wondering the practicality of, you haven't had to use antibiotics in over 10 years but you have had diseased birds…

SENATOR FLOREZ: What's your mortality rate?

MR. MCKAY: I would say our mortality rate is probably along the lines of a standard industry producer. We typically run between five and six percent on standard mortality during the life of a flock.

SENATOR HOLLINGSWORTH: But if they're diseased birds, or they're starting to be affected, are you culling them? Are you counting that in your mortality rate?

MR. MCKAY: Absolutely. I'll be very frank; I mean, our requirements are that we, both from an internal standpoint and from a certification standpoint, that we pay a lot of attention to what happens with the animals. I don't think I've sat here and said that we are a better producer, but I think that you can raise along standard industry norms from a mortality and from a livability standpoint along with the rest of the industry. And what we really do is, you have to do other things better. You have to give the birds more space. You have to really amplify your attention to the details in the husbandry practices.

SENATOR FLOREZ: Let me ask you given that you have to pay more detail to the animal, then, in other words, right?

MR. MCKAY: Um hm.

SENATOR FLOREZ: The death rate you mentioned earlier….I think one of the witnesses said, on the other prior panel, that without antibiotics, more chickens die, is that true?

MR. MCKAY: It's not our experience, no.

SENATOR FLOREZ: Okay. Any other questions, Members? Okay. Thank you.

Okay, let's get to our panelists. Dan, do you want to begin?

DAN KALB: Sure. My name is Dan Kalb. I work with the Union of Concerned Scientists. And I'm here presenting some brief testimony on behalf of the Keep Antibiotics Working Coalition of consumer health, environmental and humane and other advocacy groups around the country dedicated to eliminating a major cause of antibiotic resistance, and that is, the inappropriate use of antibiotics in food animals, which is what the topic of discussion is for today.

I'm certainly not going to read the, probably, 10, 15 minutes worth of testimony; I've just underlying maybe two or three minutes worth and then I'll be happy to take questions.

The overuse of antibiotics is a major threat to public health and it's one of the top concerns. And that's not just Union of Concerned Scientists saying that or a coalition, but that's coming from the Centers for Disease Control and Prevention. They identify the overuse of antibiotics as one of the country's premiere public health concerns.

As we know, the overuse of antibiotics leads to microorganisms that are resistant to antibiotics, thereby rendering the drugs much less effective. Not only are antibiotic resistant diseases more difficult to treat, evidence shows that resistant bacteria are more likely to cause systemic blood infections and require hospitalization. So the problem is not just how this impacts animals, but, as we know the topic of this hearing is that how this impacts the resistance that those microorganisms have to the antibiotics we have and the potential harm that causes to humans.

Now human medicine understands this. In fact, the AMA and Center for Disease Control and other well respected associations understand this. And human medicine, as is my understanding, has stepped up to the plate and has implemented some programs to reduce, carefully and wisely reduce, the use of antibiotics. Not to, of course, eliminate it. We all use antibiotics when some of us get sick for certain types of sicknesses. But they're taking action. Unfortunately, it appears that the agricultural sector has yet to move in that same direction.

And as we've heard, although I guess there's some dispute by some of the previous panel, but we've heard that roughly 70 percent of the antibiotics used in this country are used on animals for non-therapeutic uses. And even while we do believe that number is correct, even if that number is only 50 or 60 percent, it's still a huge number and it still means that action needs to be taken.

Surprisingly, most of the antibiotics used are not used to treat disease, as we've discussed, and most of them are used (these non-therapeutic antibiotics) in capos of large concentrated animal feeding operations as you heard earlier.

Some have said in the past that there isn't a strong scientific link between the use of these antibiotics for non-therapeutic uses in agricultural livestock and how that impacts the potential for resistant microorganisms in terms of the use of antibiotics in humans, but our sense is that the scientific evidence is pretty convincing and mounting.

I'm sorry, did you….let me just finish this. For example…

SENATOR FLOREZ: Let me say, you're going real fast and the other side had ample hours and not that I want to keep your people here hours, but please take your time. Let's go through this. We are building a record. We are building a transcript. And so, the purpose of these hearings, in many cases, is to have a transcript that others and the public can review and can also make further comment to the Committee. So don't feel the need to rush through this.

MR. KALB: Okay. I appreciate that.

SENATOR MALDONADO: Mr. Chair, along those lines. The statement you just read, are you saying that the folks that were just here in the front weren't consistent with the facts?

MR. KALB: Which statement are you referring to? I don't remember.

SENATOR MALDONADO: The one you just finished stating. The one you just finished reading.

MR. KALB: About the Centers for Disease Control? Or, the 70 percent?

SENATOR MALDONADO: The amounts are mounting and that there is a connection between antibiotics…

MR. KALB: Yeah, I was just about to read off a couple of examples.

SENATOR FLOREZ: Okay.

MR. KALB: I don't know if people who are here or who they represent were saying things exactly to the contrary, but the emphasis seems to be somewhat to the contrary so I want to just…

SENATOR FLOREZ: It's okay to have the contrary here. That's why we have a hearing. Our job is to kind of figure out, as Senator Maldonado always says, what's the truth? And so, if you give us your side and we get the other side, we can try to figure this out from our vantage point.

SENATOR HANCOCK: Senator Florez?

SENATOR FLOREZ: Yes, Senator Hancock.

SENATOR HANCOCK: My recollection is that the statement was made that maybe, or what I have read, is that the animal husbandry or the commercial people who believe in the sub-therapeutic use of antibiotics agree that maybe 30 percent of the antibiotics used in this country are used on animals that your statistics say 70 percent, and that maybe what we're looking for is whatever the data is to indicate which or where that number might actually be.

SENATOR FLOREZ: Right.

MR. KALB: I appreciate that. In 2001 the *New England Journal of Medicine* published a special editorial whose title summed it up (quote) *"Antimicrobial Use in Animal Feed: Time to Stop."*

In 2003, the WHO concluded *"there is clear evidence of a human health consequences from agricultural use of antibiotics, including infections, that would not have otherwise occurred, increased frequency of treatment failures and increase severity of infections."*

In 2003, the National Academy of Sciences Institute of Medicine came up with a conclusion (quote) *"Clearly a decrease in antimicrobial use in human medicine alone will have little effect on the current situation. Substantial efforts must be made to decrease inappropriate overuse in animals and agriculture as well."* This is the National Academy of Sciences saying this.

The literature is diverse. And one point though, is a pretty clear and pervasive in much of the literature. Antibiotic overuse in agriculture just as in human medicine is undercutting the efficacy of important human therapies and in some cases, helping to generate even more virulent pathogens. And this conclusion, is again, not just the Union of Concerned Scientists or one agency, but it's also the AMA, the American Academy of Pediatrics, the American Public Health Association and most major medical associations throughout the country and possibly throughout the world.

There was a notation of a study in Denmark and I wanted to point out what the WHO, their analysis is. The WHO analysis of this Danish experience of reducing or banning most antibiotics, has shown….the WHO analysis has shown that the non-therapeutic uses of antibiotics can be ended with little or no impact on agricultural productivity and human welfare. The comprehensive analysis published in 2003 showed that there was no appreciable impacts from the antibiotic ban on broiler chickens and certain kinds of pigs, so-called finishing pigs. There was a slight increase in the use of antibiotics for other types of pigs, but the increase was completely offset by the overall decrease in

antibiotic use. Again, they said that overall the results were positive and no additional harm was caused to anybody because of what happens in Denmark.

The USDA looked at a number of studies, including what happened in Denmark, and they've said (here in the United States) that large farms are more likely to use antibiotics in feed with limited, if any, benefits. The USDA also found that other practices, such as increased sanitation, and in some cases, vaccination, could be substituted for antibiotics.

Sometimes you'll hear that routine antibiotic use has benefits for human health, for that matter, but there is simply no evidence that that is the case. Studies have shown that levels of food borne pathogens go up or down independently of antibiotic use in food agriculture. Antibiotic use in healthy animals is simply unrelated to rates of food borne illnesses.

We recommend that states….because it's always challenging to move things forward quickly at the federal level and states are often, as you know, places where eventually federal laws end up but states are often, you know, places where they're started and tested, we recommend that state efforts to curtail unnecessary antibiotic use focuses on uses that provide the least benefit to animals and have the potential for the greatest harm to humans. We recommend that you focus on the non-therapeutic uses of medically important antibiotics—important for the human race not just for animals.

Thank you.

SENATOR FLOREZ: Thank you very much.

ELISA ODABASHIAN: Good morning. My name is Elisa Odabashian and I am the west coast director of Consumers Union, the nonprofit publisher of *Consumer Reports Magazine*.

We believe that much, much, much more needs to be done immediately to curb the non-therapeutic use of antibiotics on food animals, a practice which we think, and have seen in much data, leads to major increases in antibiotic resistant bacterial infections in humans. When I heard the former testifiers say that there was no correlation, I wondered if they had read a newspaper or seen a television or taken their child to a doctor for an ear

infection, where the child has to get three and four different antibiotics before one starts to work.

A joint report in 2003 of the World Health Organization, the United Nations Food and Agriculture Organization, the World Organization for Animal Health states that the non-therapeutic use of antibiotics in animals places humans at increased risk for infection, higher numbers of treatment failures, and increase severity of illness resulting in both higher frequency and longer duration of hospitalizations and a rise in the cost of health care. The extra cost to the U.S. health care system due to antibiotic resistant bacteria was estimated in 1998, by the National Academy of Sciences and the Institute of Medicine, to be $4- to $5 billion annually. That was in 1998 and 11 years ago, we can imagine what that cost is now.

In the January 2007 issue of *Consumer Reports,* we published a story called "Dirty Birds," which was the largest national analysis of contamination and antibiotic resistance in store bought chicken ever published. In that study, we tested 525 fresh whole broilers bought at supermarkets, mass merchandisers (like Costco), gourmet shops, and natural food stores across 23 states. Of those birds that were tested, 80 percent of the chicken carried some form of bacteria that can sicken people. Of that 80 percent, we found that 84 percent of the salmonella organisms and 67 percent of the campylobacter organisms showed resistance to one or more antibiotics. It was a major find. And we also did a simultaneous national survey of people (average Americans) and found that 82 percent of Americans are extremely concerned about giving antibiotics to food animals on a regular basis as part of a daily dosage of their feed.

Recent economic analyses of antibiotic use in poultry disputes the myth that using drugs non-therapeutically results in large economic gains to producers. The data show that cleaning farm facilities more thoroughly and frequently achieves the same benefit as non-therapeutic antibiotic use without leading to increased risk of human illness and increased health care costs.

Thank you.

ELANOR STARMER: I'd like to thank Chairman Florez, Vice Chairman Maldonado, and the Members of the Committee for allowing me to speak today. My name is Elanor Starmer. And I am a research analyst with Food and Water Watch. We are a national consumer advocacy organization. And within California, we have offices in San Francisco, San Diego, and Los Angeles.

We believe that the use of antibiotics for growth promotion and to keep animals from being sick is unnecessary and puts consumers at grave risk by exposing them to food borne illnesses that are not treatable with antibiotics. A ban on non-therapeutic uses of antibiotics would not impact producers' ability to treat sick animals but it would eliminate the practices that commonly lead to resistance, which is the feeding of low doses of antibiotics to livestock over long periods of time. We think that this ban is necessary for two reasons.

First; an extensive review of the literature done by the Pew Commission on Industrial Farm Animal Agriculture found that antibiotics are widely available over the internet and in feed stores to producers without the approval of a veterinarian and that they are commonly used in ways other than what is directed on the label.

Second; we think that this is an incredibly important issue for human health because a full half of the antibiotics that are used in animal agriculture are either the same as, or very similar to, human use antibiotics. There is a wealth of scientific literature, some of which has been discussed by my colleagues, showing a link between antibiotic use in animal agriculture and resistant bacteria that impacts humans.

And I'm happy to talk about this more during the question and answer period, but I just mention now, that the CDC has concluded that antibiotic use in food animals is the dominant source of antibiotic resistance among pathogens that cause food borne illness. So there are, of course, other ways that antibiotic resistance happens, and the medical setting is a very important area that needs attention but when we are talking about food borne illnesses that sicken consumers, the Centers for Disease Control has determined that

antibiotic use among food animals is the dominant cause of those antibiotic resistant bacteria.

We believe that preserving a safe food system for consumers does not just mean doing everything that we can to prevent contamination from happening but it also means that if contamination does happen, that we have all the tools available at our disposal to be able to treat those consumers and make them better as quickly as possible. And if we continue to move in the direction that we are, I do not think that that would be the case and that is certainly also the feeling of prominent medical authorities, including the World Health Organization and the American Medical Association and others.

So I'm more than happy to take questions but that's my opening statement.

SENATOR FLOREZ: Thank you all. I don't know where to begin but let me ask the panel, in general, I'd like to get all your comments, but what you heard in the prior panels, did you have a feeling that there is sufficient oversight of antibiotics that we use in our food supply? I mean, this argument "of 70 percent," "not 70 percent," "we don't know," "it's not important," "why do we need the info," "what use would we make of it," from your perspective, how are we to make sense of all of that particular part of the discussion?

MR. KALB: I'll start. Dan Kalb with the Union of Concerned Scientists. Certainly any state agency or regulatory agency that's charged with protecting the public's health needs to have information to do that. And getting the best scientific information and getting the data from the industry that's being regulated or potentially regulated, is a fundamental component of protecting the public's health. So if what you're asking is do we need to collect more information or should a state agency have the authority to collect more information in order to be able to make the right decisions, I think that's a no brainer.

SENATOR FLOREZ: Okay.

MS. STARMER: If I could just add to that on the topic of regulation generally?

SENATOR FLOREZ: Yes.

MS. STARMER: In addition to the lack of data, there's also....most of the drugs in use in animal agriculture at this point were approved for animal use by the FDA before they took human resistance into account in doing those assessments. And I believe that someone on the previous panel mentioned that the FDA has changed that practice, and that's true and that's a positive thing. But its new framework, which has been in place since the year 2000, takes into account human resistance issues in the approval of antibiotics for animal agriculture but only for new antibiotics. And so, they did state that they were interested in going back and doing reviews of antibiotics currently on the market but only if financially feasible, and that has really not happened except in a couple of cases. Once case, which was the withdrawal of fluoroquinolones from poultry production in 2005, took a full five years to go into effect. And during the time that they were going through that process, of course antibiotic resistance continued for proliferate in poultry operations. So that's just another example of the way in which the regulatory framework does not serve human health.

SENATOR FLOREZ: Elisa.

MS. ODABASHIAN: I would just add that there is currently minimal regulation that requires either drug manufacturers or animal food producers to report the level of use of antibiotics which leads to these conflicting estimates of 30 percent by the trade organization or trade group, or 70 percent by the Union of Concerned Scientists. And, you know, it's a he says/she says kind of thing if there are no requirements to report usage.

SENATOR FLOREZ: Right. Why do you think there are so many antibiotics in the system?

MS. STARMER: Well, I think, and this speaks to an issue that was raised by the previous panel that, "well, we've been using antibiotics in animal agriculture for 60 years and if there was going to be a superbug it already would have happened." I think that that negates the evidence of the change in livestock production practices that we've seen just recently in the last 20 or so

years. Just since 1996, we've seen an over 500 percent increase in the number of hog operations that are industrial sized or over 2,500 head. And as we see an increasing number of those very large confined and concentrated animal feeding operations, the requirements for treating the entire flock to prevent illness become much greater. And so, again, this is very difficult to make an exact point because we don't have the data. But I would suspect that if we were to look at time series data on antibiotic use, we'd see a very big increase just in the last 20 years related to that proliferation of concentrated animal feeding operations.

SENATOR FLOREZ: How would you describe the earlier panel's thought on the public health threat? Senator Maldonado's question, Senator Hollingsworth question, our question is, is there a very serious link with public health in humans to animals in this particular case? What would we say to that given the prior testimony?

MR. KALB: I would say that you should look to the organizations that you feel that you can trust the most. And the Centers for Disease Control and Prevention, the National Academy of Sciences, AMA, American Public Health Association are organizations that I trust and I would hope that this body would trust those organizations as well. Asking the regulated industry, it's important to get their input but it's also important, as you know better than I, to be a little bit skeptical of their input.

Thank you.

SENATOR FLOREZ: Thank you. In terms of the best solution to protect consumers, what would that be given this hearing?

MS. ODABASHIAN: Well, in large industrialized farms, farming facilities create problems of overcrowding and problems of hygiene and it's a problem that trickles down, trickles out. And our feeling is that the use of antibiotics, non-therapeutic use of antibiotics, is a bit of a band-aid; it's an easier way to treat the whole and it's having its effect on human beings. And to hear the panel say that there is no impact on resistance in human population, I felt was disingenuous.

MS. STARMER: We would support the provisions currently in SB 416. We do support a ban on the non-therapeutic use of antibiotics. Clearly, there are a great number of antibiotics that are being used outside of the purview of what's written on the label and the leadership of veterinarians. And so, we do believe that a ban on non-therapeutic antibiotic uses is necessary. Again, this isn't something that would affect producers' ability to treat sick animals, but it would significantly reduce the populations of resistant bacteria in the environment and on food that consumers eat.

We also believe though, that this ban should be coupled with significant outreach and education to producers. What we've seen in other countries; Sweden as an example, in 1986, they banned non-therapeutic antibiotic use and they coupled that with a very extensive education program helping producers learn about improving animal hygiene and some of the other practices that Dan mentioned at the beginning. And they were able to maintain production levels despite this ban because of the implementation of that educational program.

We also though, support the provisions of SB 416 that would establish preferential purchasing policies and ban the sale of meat and poultry treated with antibiotics to schools. This sends a really important signal to producers that there is a market out there for these products. And I would mention just parenthetically, that the market is already moving in this direction. McDonald's is a prominent example. Starting in 2003, they banned the use of non-therapeutic use of antibiotics for the direct poultry producers. We have not seen skyrocketing costs of chicken McNuggets since that point. And so, the industry is moving in this direction, but it sends an important message for the state to implement that kind of purchasing policy. And it also is critical to protect our children's health, because children are much more likely to be sickened with resistant strains of food borne illness.

SENATOR FLOREZ: Are you saying that our food in our schools is….McDonald's is healthier than the food in our schools?

MS. STARMER: In terms of the presence of antibiotic resistant bacteria, that may very well be the case.

SENATOR FLOREZ: Okay. Dan.

MR. KALB: I'll just add; there is federal legislation that's about to be introduced called the Preservation of Antibiotics for Medical Treatment Act. And it would require the FDA to review antibiotics used in animal agriculture, determine whether they put the public health at risk by leading to increased resistance and then to withdraw from the market those drugs they identified not shown to be safe. But of course, legislation in Congress is always a long and difficult process, and so, in the meantime, we certainly would support the state moving forward in collecting data, doing things that the state has the authority to do that's not federally preempted and if that means banning carefully chosen select types of antibiotics that are used for non-therapeutic uses that relate to the human health as well, then that would be a precautionary measure that we would likely support. We would want to see the details, but we'd likely support that.

SENATOR FLOREZ: Sure. That helps. In terms of the alternatives, then, to antibiotics, what would we say? Do we turn to our front panelist here and say, "Everybody should do what they do," or what would be the preference from a consumer point of view? This seems to work. I'm just wondering how it works in mass.

MS. STARMER: Yeah, well, certainly I think that the types of practices that Dan mentioned; improved animal hygiene, giving the animals a little bit more space, all of those things would go a long way, and have, in other countries towards continuing to keep production levels high while reducing the need for antibiotics. And then increased training for producers so that they are really clear on the prudent use of those drugs when they do need to be used, would also be important.

SENATOR FLOREZ: And why did you go towards moving away from using antibiotics? Why did we move in this direction?

MS. STARMER: I'm sorry, what was the question?

SENATOR FLOREZ: Why did we move towards removing antibiotics from this system versus any other alternative?

MS. STARMER: Well, I think because the evidence suggests that it is the use of non-therapeutic antibiotics, which is the feeding the low doses of antibiotics over long periods of the animals lifetime that does breed resistance. It's exactly like a vaccine would do in the human body; you give them a little bit of the bug and the body learns to fight it off. That's exactly what we're doing in the cases of non-therapeutic antibiotic use in livestock.

SENATOR FLOREZ: Okay. And you mentioned earlier that the consumers are moving to this anyway. And maybe, Mark, you can tell us a little bit about….is this where we're going? Where's the market?

MR. MCKAY: There's certainly been growing consumer demand for these types of products over the last 10 or 15 years. Certainly, there are parts of the country, actually, California I consider to be a very vibrant, kind of hot bed of natural and organic productions. The same thing for Pennsylvania; you're actually seeing large scale commercial producers that are either producing antibiotic free products or certified organic products as well.

You know, I will weigh in, earlier on one of the questions. The poultry industry is very sophisticated and they spend a tremendous amount of time paying attention to the things they do do. And they might do it differently than we do it, but the question about the actual usage quantities, they would be able to tell you down to the pound. In a good way, meaning, that they pay a lot of attention to the way that they formulate for their animals and the things that they feed them and the usages that they have both because there's a cost impact, and also they need to track those things through their systems as well.

SENATOR FLOREZ: Great. Thank you. Is there anything else the panel would like to add before we move onto public comment?

MS. STARMER: I would just like to speak briefly about the question of costs, because this is sort of the main argument against doing such a ban, is that it would dramatically increase cost for producers. And this was mentioned in one of the other testimonies, I believe.

As I said, the industry is moving in this direction and is aware of the fact that this may be coming down the pike and so they're beginning to do their own research on what impact that might have. And in 2007, the Purdue Company, which is the fourth largest poultry producing company in the country, undertook a trial study on 7 million broiler chickens, looking at what would happen if they removed the use of antibiotics for growth promotion and prophylaxis. And what the researchers who analyzed that data actually found was that while the use of antibiotics for non-therapeutic purposes did improve production, it did not do so so much that it offset the cost of buying the antibiotics. And so, using the non-therapeutic antibiotics was actually associated with an economic loss to producers of about half-a-percent of production costs.

The question that is then begged, why are they using it if it's an economic loss? There's a couple of answers to that question. But one theory, and again, if we had more data we would be able to know this for sure, but there is evidence to suggest that antibiotics are also becoming less effective on what they do on livestock operations. So when they first came into use in the fifties and sixties, they really did promote growth and over time, because of the accumulation of resistant bacteria, they're becoming less effective and producers have to use more of it. It makes me wonder if at some point the scale is going to tip and it's not going to be worth their while to continue that use. But I would hope that we would stop that before all of those antibiotics became ineffective for both animal and human uses.

SENATOR FLOREZ: Any other questions Members? Thank you. Thank you all.

Now public comment: If anybody would like to make a public comment at this point, please come on up. Why don't we start with Mr. Albiani? And then we'll go to Mr. McAfee.

DENNIS ALBIANI: Thank you, Senators. My name is Dennis Albiani. I represent the California Grain and Feed Association. And we agree, and I agree much with the previous panel, that the overuse of antibiotics is a problem. In

fact, when perusing the Food and Water Watches website on this issue, the lead cause that they brought up is antimicrobial soaps and the use _____. The other issue, when you look at the Centers of Disease Control and some of their discussions, is over prescription from pediatricians of antibiotics to our children. And so, when we look at the real scientifically studied and tested uses of antibiotics in food animals are well down the list, even of the advocates that were on the previous panel. And so, when we look at that, we need to put into context the concern, the cost, the risks and as discussed earlier in this hearing by the experts, the risk is minimal to none.

Animal welfare, I'd like to talk a little bit about the suffering. The Petaluma Farms discussed a little bit about of, oh, 5 to 6 percent morbidity or death loss. The industry average in poultry is 2 to 3 percent—a couple more percent. What's that? That's 100 percent increase in death loss. In a flock of 100,000 birds (which is actually a very small operation), that's 2- to 3,000 more birds that die prematurely. And so, that's the context. In a cattle operation (10,000 cow feedlot), that's 2- to 300 more cows that die that never meet the requirements. So let's put that into context of what it really is. And that means to meet the same consumer demand, that's that many more animals we need to put in; it's that much more land to take out; and that's many more methane and all the other issues that go along that we all deal with as livestock producers.

Finally, I'd like to talk about when animals get sick they suffer. And in animal welfare, so if there's a higher, obviously proven by the Denmark study, peer-reviewed study, proven increase in therapeutic use of things, increased morbidity and increased sickness, they suffer. They suffer for days and then they die.

When I was a child I used to raise drop calves. And Mr. Maldonado, you talked about it. You get the dairy cows. And that's the only time….and we raised cattle as well. But that's the only time we used non-therapeutic, preventative antibiotics. When we did that, if you've ever seen, once you've see a calf get skowers (the little yellow manure that comes out), they're gone. And I

tried and tried. I stayed home from school trying to save them. Once they get skowers and once you see that they're starting to get sick, and I never saved one of them. Because once you start going down that, they are suffering; they are dying. And it takes four or five days for that to occur. And it's an awful thing to see. So from an animal welfare standard, there is another side and that is increase death and increased sickness and suffering.

Finally, Petaluma Farms also discussed that they meet the standards for the school nutrition program. That is great for protein and sodium and all the standards. How about cost?

Yesterday, at Safeway Foods, the Petaluma Farms product was $3.69 a pound versus just under $1 a pound for traditional raised poultry. So we're talking about what, 360 percent increase of cost for those chicken nuggets or the ground beef or whatever? And that's an example. So it might be a great precautionary principle to accept, but there is a cost.

And then finally, we do support all types, in our industry as well as that. We support organic, range free, traditional. Whether it's poultry, whether it's beef cattle, or whether it's dairy, we provide the inputs (the Grain and Feed Association) to all those types and we believe that consumer demand should drive that. And if people have legitimate concerns (I have four children under seven-years-old), then we can buy those products. They are out there and they are readily available.

Thank you very much. Appreciate it.

SENATOR FLOREZ: Mr. McAfee.

MARK MCAFEE: Thank you. If I had known what this was going to really entail today I would have prepared and wanted to be one of those panels because, boy, I'm shocked by some the comments made by the first panel. And I'm very supportive of SB 416. And I'm also supportive of the second panel's general opinion and position.

I'm an organic producer and I'm also a father. And I came here to speak as a public citizen as well as an organic producer, because I think that in both of those cases I have something that needs to be heard.

I was a paramedic for 16 years and made it my living to transport people that were acutely ill and many of those people had antibiotic resistant infections and were in the process of dying. And it came as a personal thing that reminded me and harkened me back to my profession as a paramedic running about 15,000 paramedic calls, that just last month my daughter, Kaleigh….and I've got a picture of her right here; she's a beautiful young lady; 21-years-old….came down with MRSA infection on her leg, acutely, without any warning. It was really strange. She had a great immune system. She has great nutrition. And within three days, it was a horrible outbreak with a big infection in her leg. And I brought a picture of it here. It's without color so you don't really see the inflammation. But it was swollen. We had to take her to the emergency room. We had to go through the process of finding an antibiotic, searching for an antibiotic that would work for the eradication of this particular infection in her leg. So it became pretty personal to me, having seen that affect my daughter.

Nineteen thousand people a year dying, right now, from MRSA infections in the United States and over 100,000 are affected, and I think that's the tip of the emerging iceberg.

I was shocked to hear our governmental representatives from Washington, DC today report that E-coli O157:H7 is not antibiotic resistant. There's a standard protocol in ERs; if you have a suspected E-coli O157:H7, you are arm banded and no antibiotics would be given to that child until you figure out what it is. That's because E-coli O157:H7 is antibiotic resistant. I am blown away by the comment made here today—completely shocked. I'm shocked, really. I can't believe we're being led that far astray from the reality of the truth of what's going on in the trenches of war against this antibiotic resistance.

As an organic producer, I know and understand that there is a curve that happens when you go from using antibiotics to not using antibiotics. And if you use the same set of conditions, where you use therapeutic antibiotics and antibiotics and you go to not using them, you certainly will have a high

death loss and have issues with that lack of the tool in your toolbox. But if you change the conditions in your herd, where you have sunlight and space and so on and so forth, and you don't ever use antibiotics, let me tell you, Mother Nature takes care of it. And the biodiversity of the environment, the sun and so on and so forth, a cow's immune system change; the pathogens found in the manure are different. It's just a different set of conditions. And I'd have to refer to the USDA National Organic Plan which actually as codified how you go about doing this so you don't use antibiotics. And as we all know, the organic industry has been seeing a sales increase of 15 to 20 percent per year for the last 10 or 15 years because the consumers simply don't want unnatural things in their food that affect them.

And I'll leave the rest of my comments. I have them printed here. And I appreciate your time. This is very important. And I'm very connected to our consumers and I hear this everyday, "We don't want garbage in our food." They don't want antibiotics in the food. They want to reserve antibiotics for when they really need them and physicians need to reach deeply into their tool chest, which is getting shallower and shallower, to be able to use them to save a person's life—in that case, my daughter's last month.

Thank you very much.

SENATOR FLOREZ: Thank you. Is there any other public comment? Okay. Senator Maldonado, do you want to say a few words and then we'll go ahead and close?

SENATOR MALDONADO: Mr. Chair, I came to this committee hearing today to try and learn more about antibiotics and I think I did learn a little bit of it. What I didn't learn, is it causing humans to have resistance towards antibiotics? I didn't hear that. I mean, I heard that from the vet and I'd like to hear that from someone else and maybe get some good solid information.

What I did hear today was that a cattle rancher raises a cow or a calf or a steer up until 900 pounds and then they send it to a feedlot. First of all, they give it their shots when they're babies (just like we give shots to our babies); then they put it on the range and they eat grass until they get to about

900 pounds; and then we put them in a truck and we send them to a feedlot.

Now I heard from the last panel, they said we should have smaller feedlots—it would prevent disease. Well, I can imagine what California would look like with smaller feedlots up on the west side of Sac and maybe in my area.

We did away with our feedlots in my district because our community didn't want the smell, so we ended up putting cattle onto other states. But after that cow gets to the feedlot, its life is probably 150 days; that's what I heard here today. And for 100 days they give it medicated feed because they have cows come from all over the place into one feedlot and they're worried about those cows getting sick. And then the last 50 days they feed it, from what I heard today, feed that has no antibiotics in it. So, therefore, they said that by the 50th day that beef is clean. I'm just talking on beef; I'm not talking on poultry or anything else. So I kind of agree with those sentiments, Mr. Chair.

So in the next week or so as you have the bill, as it moves forward, I'd like to see some good science that says that that beef that is at the processing plant, that carcass, has been looked at or there is no harm to the consumer because that's, in essence, what we're doing.

I have a couple of kids, too, Sir, and that's my biggest concern. But I'm trying to find out where it's bad. I didn't hear that today—where it's hurting me. I mean, you and I, Mr. Chair, have been here 10 years. And you and I have done the no carbohydrate diet for many years. And I'm not going to get into what our meals have been, but you know what you have eaten and I know what I've eaten. And I must tell you, that it hasn't come to my mind that….I never thought I'm eaten something that is going to put more antibiotics in my body, to give me more resistance so that when there's a staph infection….but I don't see it, Mr. Chair. But I want to see it in writing or see some good science.

SENATOR FLOREZ: Thank you, Senator Maldonado. I appreciate the comments.

And I think the purpose, again, of the hearing was to try to begin the discussion and airing out on whether or not antibiotics in our foods are something that California consumers know about, care about, and ultimately want. And so, I think our overall issue with our bill, which it's a good process. This is not an up or down vote, which I think is a good thing. But I think it allows us to get ready for the presentation of that bill. And I appreciate Senator Maldonado's high bar for the bill. And I would say that for the advocates who are behind the bill, they heed Senator Maldonado's bar, because I think that is the bar that we really need to work on. I, obviously, wouldn't have introduced the bill if I didn't believe this was an issue, a problem and something we should work on.

So I do appreciate everyone coming. I appreciate all the comments. More importantly, I would encourage you to read the transcript of this hearing after. I hope we can get this done rather soon, because I would like to have everyone email us comments as well, whether it's to Senator Maldonado or myself, so we are fully engaged in what we may have missed today or something you may have wanted to say that you didn't get to say or reflecting on later as you're eating either antibiotic free chicken or eating the other chicken. As you're reflecting about it, I would really appreciate comments to the Chair and the Vice-Chair in terms of us proceeding forward.

I think it's been a fascinating discussion. I, like Senator Maldonado, think most consumers don't really think about it much as much as they should. And I think the issue for us, as we try to bring this discussion out to the forefront so we can get some clear answers to it as much as possible.

I'll tell you what I did hear today; I heard that, as Senator Maldonado says, there's probably more questions in this in terms of where we are at in the data; where we are in terms of the actual amount of antibiotics in California; whether or not we really monitor it in the way we should; whether or not we ultimately should have some sort of registry to make sure people understand that what's out there, how it's used and whether or not veterinarians should have a bigger say in these issues, or don't have enough say in these issues in

many cases? So there's a lot to work on from our perspective. And I do appreciate all the comments.

And we will adjourn exactly at noon, the Senate Food and Ag Committee.