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Veterinarian Panel
Part II
Veterinarians and Animal Welfare

SPEAKERS:
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Dr. Jeff Blea, Veterinarian and Co-Managing Partner, VonBluecher, Prida, and Blea, Inc.
Dr. Scott Palmer, Hospital Director and Staff Surgeon, New Jersey Equine Clinic
Dr. Gregg Scoggins, Attorney and Veterinarian, Gregg A. Scoggins Attorney at Law PC

Dr. Rick Arthur: A few set of slides I'm gonna give you are Dr. Scollay who got hung up in gosh only knows where. I don't even know if she ever got out of Kentucky, Sidney.

Dr. Scott Palmer: She got to Dallas.

Dr. Rick Arthur: She got to Dallas. Anyway, here is — what she was gonna talk about was equine injury database. This has actually been a very successful program for the racing industry. The aims were to, as you can see, identify the frequency, types, and outcomes of racing injuries, to identify markers for horses at increased risk of injury — that's very important for the examining veterinarians — and to serve as a data source for research directed at improving safety and preventing injuries, and I'll talk about that in my talk a little bit later. I don't know exactly what's — there we go.

There's 85 race tracks and National Steeplechase Association, that's 93 percent of the flat racing and 100 percent of the steeplechase starts. There have been over 30,000 injury reports. Those aren't all fatalities, but there are about — is anybody from InCompass here? I think there's about 1 million race starts in the program after three years and unfortunately that's going to include about 2,000 — over 2,000 fatalities. There has already been identified some profiles of increased risk and you can read those there, but one thing we have to remember, and we're gonna try to narrow these things down so we can really get a strategy to figure out how we can identify those horses that are risks that need extra examination.

Increased risk does not mean a horse is going to be injured, but it does mean that horse has a greater risk of injury. I added this slide in from one I had in my computer. If you look at the prerace physical and findings, that this was done by George Mundy and Noah Cohen in

Kentucky. You can identify some horses that are gonna be from 5 to 18 times increased risk, but there's such a low incidence of injury, particularly fatal injury, it's very hard to say well we shouldn't let that horse run. If you take 1 horse out of 500 sustains a fatality and that's unfortunately what the national statistics show, if you have 18 times the risk that's still 1 out 27.8 starts for this horse would be a fatality. That means that 26 times out of 27.8 starts this horse would finish the race fine.

When you consider the average start per horse is only about nine or ten starts, it makes it very difficult to eliminate those horses during the prerace examination. With profiling, and I realize that's a bad word in some parts of our society, but certainly for horses we can enhance the physical examination, deal with the trainer and attending veterinarian. We try to do this when there's a horse that has an unusual past performance, asks the stewards to bring him in or have the official veterinarian talk to the attending veterinarian and monitor those horses in the context of race day. I think this is probably going to be a slide that Mary was gonna talk about is which one of these two cars would you be willing to park next to in a tight parking spot? That's really what we're talking about.

Obviously, the horse should look the best on race day and sometimes it does and sometimes it actually looks better than it should, but appearing to be sound does not equate to being sound. It's one of the reasons that the examining veterinarians push for the lowering of the current bute level from five micrograms to two micrograms, and also are concerned with corticosteroids levels. What we really have to do is change the paradigm and examine these horses outside the prerace examination and really hold trainers accountable in terms of the condition of their horse.

In Pennsylvania, they're now doing inquests in the racing desks and we're doing something similar in California. That is the stewards bring them in, they talk about the previous horse issues, who knew anything about the horse's soundness, and were there missed opportunities? At this point this is not an accusatorial process. It's just trying to figure out what happened, when and where? And to let the trainers there know that people are watching them.

Could we go with the next slide, please? Next group of slides. That's what Mary Scollay was gonna talk to you about and I'm sure she was gonna do it longer than five minutes. As soon as we get the next group up, I'll go to what I'm talking about. I'll tell you what the premise of what I'm gonna be speaking about, and that is that horse welfare is good business for horse racing. It makes sense and it's gonna — it's something that we're going to have to do. We have to look after the horse because without the horse, we don't have anything.

When you talk about racing injuries, we talk about racing injuries, racing fatalities or the high profile events, training injuries which are the bulk of the injuries or low profile events. The public doesn't see them. A good example was the same year that Barbaro or Eight Belles broke down. Right afterwards, Pioneerof The Nile didn't have a fatality but had a bowed tendon. He ended up going to the farm. Nobody knew about Pioneerof The Nile but obviously Eight Belles was an international embarrassment for horse racing.

Dr. Scott Palmer: I liked that horse, Pioneerof The Nile. I knew about him.

Dr. Rick Arthur: All right.

(Laughter)

Anyway, to show you how fragile these horses are, this is from a biomarker study that we did in southern California for a Grayson-Jockey Club project. We started out with 238 two-year-olds in the project early in the year and we followed those horses along. The horses were eliminated from the project if they were removed from training for more than 30 days. As you can see, right — whoops. I don't know what that is. There we go. Can I — I can't control that. All right, there we go. Let me go back.

If you look right here, there we go, there are only 18 horses left in that study after 10 months, and so they have not been out of training. The attrition rate in horses is phenomenal. A lot of these horses have come back and were back in the training, but it's very hard to keep a horse in training for a very long period of time. When you compare California and New York it's very, very similar. These were — I looked at — they just happened to have, both of them had 62 horses in that day and I followed them for several years. Two years in this instance and both of them had the attrition rate of about three percent a year.

If you look at the national data, it's sill about three percent a year when you see the average horse only participates for 2.94 years, roughly three years. If you do this calculation, at three percent of the horses are lost per month, with 68,000 starts in 2010, at the average yearling sale price that's $81 million in horses a month that are lost, so that doesn't include training expenses, doesn't include the veterinary expenses. That is what it costs in horse flesh to replace those horses that are lost every month.

If we can improve the safety of the system so we get one more start a year, that's like adding 400 horses to the inventory and 400 horses at $25,000.00 a horse is $10 million worth of horses just getting one more start a year out of a horse. Obviously, at the average yearling price you get up to $15, $16 million. That's on one circuit in southern California. That's roughly what we have in training.

This shows you how increasing starts improves the field size simply by getting an additional start out of the inventory you have. Starts are critical to handle. We all know that. We also have the issue where you're dealing with these public relations fiasco, the Barbaro issue, Delmar after this particular picture right here. This is July, probably not ten days after the start of the meet. They've already lost seven horses.

This is when they went in and put the polytrack in in response to this sort of a situation. The same thing with Arlington Park who had a bad year at a similar time. Of course, the Eight Belles fiasco. Remember, after Eight Belles, 38 percent of the public were fine with horse racing being banned.

This is from some NTRA survey work. The fact is, in five words, our core fans are pissed. They are very upset with us. The intensity of their responses is very alarming to say the least. This was after the Eight Belles situation. The fact of the matter is that the public compares

breakdowns and medication, actually they consider them the same problem. These are the sort of reactions that the industry had to deal with. None of this is good for us in terms of trying to sell our sport to particularly our non-core fans. All of these are issues.

The congressional hearings actually preceded this and the interesting thing is when you look at the people who actually, they listened to, Ricky Dutrow didn't show up, but Arthur Hancock, Jess Jackson, Jack Van Berg, it's a chemical warfare out there. Those sort of things just don't do us any good in terms of trying to convince people who aren't ordinary fans to come and it actually makes it difficult for us to keep fans. The point being is we have to look after welfare. I think everybody, if they have not looked at the Grayson-Jockey Club Welfare and Safety Summit recommendations, should do that. A lot of these have been implemented, including the equine injury database.

Research with the development of a national reporting and surveillance system was one of the first recommendations of the first summit. That is what we just talked about with Mary Scollay. We talked about toe grabs there. I'm gonna hustle through these things because I just want you to be thinking about what we've done in the last five years in terms of animal welfare issues.

Track surface, this is McPeterson's track testing device. This is the ground penetrating radar that Oak Tree and the Equine Foundation helped fund development for that's been used around the country. We know more about race tracks today than we ever did. We've talked about the claiming rule. In fact, we're working on this issue today, trying to take the incentive for running compromised horses and claiming races out. It's a major paradigm shift for racing that it's a concept that people really can't give up. Having been in a barn and heard trainers tell jockeys just get him out of the gate and ease him up because all I'm running him for is to lose him. We all know this happens all the time.

Whip marks are something that — and what we've done in California as our veterinarians examine the horses for whip marks, takes pictures like this and jocks getting fined, it cures the problem pretty quickly. Certainly the stewards paying attention to these sorts of things and talking, bringing jocks in really helps. I will tell you that in my 30 years of practice, rarely have I had a horse get seriously injured even though I did have one horse get hit on the testicles and couldn't come out of the stall for three days. That was Sandy Hawley. He used to ride with a whip like this.

Anyway, these are things that make it very difficult for us to sell our sport to our public. In California what we've done is Executive Director Kirk Breed has actually taken this law to mean that the stewards shall investigate. It's not an option — all racing fatalities where a jockey is injured. What he's done is developed a program along with this rule where the board has to make recommendations for improvement of the safety, race track design, jockey equipment, racing procedures, and actually put together a team that's full-sized — or its total responsibility is track safety issues.

In fact, the medication committee in California's been changed to the Track Safety and Medication Committee. This program is really in three parts: track surface group, safety steward investigation — in California we have a position called safety steward — and then the long

established CHRB Necropsy Program. The CHRB is doing track surface evaluations. We're interviewing veterinarians, jockeys, trainers about horses. Now necropsy specimens for musculoskeletal injuries are being sent to Dr. Stover's lab, veterinary orthopedic research laboratory, for in-depth analysis. We actually can go onto the CHRB website and get weather conditions. Weather conditions are key to tracks. We all know that.

These individuals are stewards, Jeff is an engineer and has done a lot of work in trying to supervise data collection, set minimum standards are assisted by a safety steward. They do certain parameters on each race track depending on the surface. They look at composition, moisture content. We actually, each safety steward does moisture content calculations on a routine basis on the track. Each track has a composition that is tested before each meet. The cushion depth is monitored by the safety steward.

We do tractual shear measurements. That's what this device is here, and actually get track maintenance logs from the track maintenance people. Synthetic, very similar situation. What's important there, temperature is as important as moisture content on synthetic surfaces and still do tractual shears and look at composition, and obviously the underlying design of the track and make sure it's meeting its original parameters.

If you go back, if you look at this, we're also trying the going stick which has been very popular in Europe in terms of monitoring track surfaces. In fact, you can go look up the going stick readings for every turf, every track in England the day of the race. Handicappers actually use this as a tool. This is stuck into the ground and there's a way that it actually measures how hard the track is. It's actually quite useful and they think it's very important. We're looking at that in California, as well.

The tractual shear test actually ends up being very important because once you know the composition you can do the tractual shear and what it actually tells you is on a dirt track what the ideal moisture ranges be, and on a synthetic track what the ideal temperature should be so the track maintenance people can try to reach those particular parameters. I don't want to get into the testing. It's a rather complicated process. Frankly, I can't really figure out or do the calculations, but I can tell you that here is a synthetic track that has a very specific temperature range at which time the holding power of that surface changes.

It ends up in California, the tracks in the afternoon are very different from what they are in the morning, particularly on a hot day. The Santa Anita surface in the original cushion track which had a lot of dark material on it would actually get up to 160 degrees Fahrenheit in some afternoons. It's amazing how hot it can be. All you have to do is put some water on these things and they cool down very quickly. If you look at moisture content you can actually do these sorts of graphs on a specific soil composition and you actually can calculate where the optimal moisture content is and what the range should be. You can't keep it exact, obviously, but it's an important part of this process.

We know from work that Sue Stover did, this was done at Keeneland comparing the dirt, synthetic, and turf surfaces, that the vertical force and actually a number of other parameters are different, whether you have turf, whether you have synthetic, or whether you have dirt. Trying

to maintain consistency on these surfaces really becomes a major issue. This is some work that Dr. Stover did.

This is a race track that had a lot of complaints. In fact, you can see one right there. It's Del Mar and this is year 2006. All these little dots are the horses that sustained fatal injuries at that particular time. What we're looking at on these two graphs are the training patterns of different groups of horses. These are the horses that died of proximal suspensory bone fractures and these are the horses that died of other fractures. What you can see is that these horses start separating eight months before their fatal injury in terms of their training patterns. In other words, these horses were set up before they ever reached this track. This is one of the problems in trying to analyze track safety.

This horse died at this track, but what other tracks were they at along this other area here? Those are the sorts of issues that we need to look at. It's become very popular to blame track surfaces. Fact of the matter is it's multifactorial. There's a lot of issues, whether it's surface training, medication issues, and whatever else you have. Safety stewards do — do the interviews with the jockeys, the practicing veterinarians. We're trying to work out a compromise where we can get medical records from the veterinarians who have been very reluctant to give those up for a number of reasons that maybe Dr. Blea can comment on later. We're looking at the examining veterinarian records, in other words, those prerace exam records, and we're looking at all the other data that we can collect relative to these fatalities.

This is an example of a prerace exam report on a horse that sustained a fatal injury. As you can see, it's virtually impossible to interpret these unless you talk to the practicing or the examining veterinarian, which is one of the reasons that we're trying to use this InCompass prerace exam module which they are offering to all race tracks free, that actually give us a searchable option to review prerace examinations. In other words, we're not just looking at the practicing veterinarian's data. We're looking at the examining veterinarian's data. We're looking at the maintenance logs of the race track. We're looking at training patterns in terms of the works and the like and trying to figure out if we can understand what are some of the causes of these fatal injuries?

Obviously, one of the issues we looked at from the RMTC's perspective is when the examining veterinarians actually send a letter to the RCI and the RMTC about their concern that prerace bute levels were compromising prerace examinations. What we found is that 67 percent of the horses at the exam time were over two micrograms. Very interestingly, Dr. Larry Soma reviewed well over 120 papers and came to the conclusion that the residual effects of phenylbutazone remain at 24 hours. Most — many of these examinations are done between 12 and 16 hours.

In fact, there was a paper at the AEP just last month by Jonathan Foreman that showed that after 12 hours there was still considerable analgesic effect of phenylbutazone at levels below the two micrograms that we had set the limit at. Again, medical records, trying to develop a system, it's a very difficult process. There's no infrastructure to do this. Hopefully, the veterinarians in southern California have been reluctant to share those with us and we're trying to develop a compromise that would allow us to correlate what are some of the veterinary treatments with

what we're seeing in terms of the fatalities and injuries in horse racing. It's been one of the issues that even the Welfare and Safety Summit couldn't analyze because there is no good data. We actually have reams and reams of medication data that are unsearchable and unreadable in California. Trying to figure out a system, we just don't have a process of doing this.

Here is a fatal injury. This is a condylar fracture. It ended up being an open condylar fracture. You see these large erosions on this horse. This horse passed — was declared sound by a CHRB veterinarian, but in the 72 hours before the race this horse had four corticosteroid injections and two nostril anti-inflammatory injections, all legal within the rules. There's no wonder that this horse looks sound to the examining veterinarian. The issue, obviously, are the use of corticosteroids.

Here's a horse with a distal radial chip. You inject the horse with cortisone, costs a couple hundred dollars, you can run him in a few days, and you got a chance of losing him in a claiming race. You do arthroscopic surgery. Surgery, the time off, the time to recover, you can get $8,000.00 into this horse just in the R and R and getting him back ready to run. If he's a $10,000.00 claimer, that frankly doesn't make sense and that's what this happens as these horses drop down the ladder. The key aspect of the necropsy program in California, we've had necropsy program for 20 years and it's hard to say this, but we've done 5,500 necropsies in that period of time.

What we've done now is add another step, is take the limbs from these and send them to Dr. Stover's veterinary orthopedic research laboratory which has — can do in-depth analysis. They have very sophisticated equipment there for examining musculoskeletal injuries. What they do is they do a detailed report on each and every horse. This is an example of one of those reports. This is one humeral fracture. I'll show you some of this later, but it actually has here an explanation of what humeral fractures actually are and what they need to be looking for.

This is actually in the report that is provided to the trainer and veterinarian, actually explaining what those fractures are, where there's a preexisting pathology. In this case visible bilaterally. You can actually see where the callus is. You probably can't see it from back there, but this is a good example. This is actually in the report where you can see the callus, periosteal callus that's developing around this preexisting stress fracture.

Dr. Stover estimates that 90 percent of all fatal musculoskeletal injuries have preexisting pathology at the site of their fatal injury. To be fair to — excuse me — to be fair to trainers, it's not that they're necessarily ignoring these issues. Many of these are microscopic and would not be, necessarily, clinically apparent. Just keep that in mind. This is not accusatorial to trainers. It's just why are we missing these sorts of things? They also get these high detailed radiographs of the fracture that actually can describe here, the periosteal reaction on the other one. On the unfractured limb, in other words, this was a bilateral preexisting stress fracture and the same thing here.

We talked about this a little while ago and part of the issue is I had a trainer come into my office and say you know, I lost a horse. I just don't understand it. I gave him his report and gave him a printout on humeral stress fractures. Now, I've talked about humeral stress fractures at this

meeting in the past and I think Sue Stover has, as well, and it's bewildering to me that a trainer doesn't know about humeral stress fractures and exactly what they're signalmen is, what the history is. This was a very typical horse. It had come up off of a layup. It was lame for a day. He walked him a couple days, sent him back, and he fractured his humerus. Sue — Dr. Stover, this was one of the first things that we identified in the necropsy program.

The humerus is the large bone as everybody knows, between the shoulder joint and the elbow. It's a fatal fracture in a horse. You can't repair these in an adult horse. Most of these have preexisting periosteal reactions at this particular site, right in the — right below the head of the scapula. They can happen in other — head of the humerus. They can happen in a number of spots. This is very typical. We see it in tibias, we see it in vertebras, we see it in pelvises, we see it in cannon bone fractures, we see it in scapulas, and I'll show you some details here in a minute.

The frustrating part about — well, I'll talk about that in a minute. Sue has actually put together and is looking at fetlock fractures right now which are 34 percent of the fatalities in horse racing. In fact, if you put together the condylar fractures and the ankle and sesamoids are over 50 percent of the fatal musculoskeletal injuries in horse racing. The fetlock is a system of levers. What'll happen is that as the stress is put on the leg you have a tension in the suspensory apparatus.

What we have here is a suspensory ligament cut out. You have the body of suspensory, branch of the suspensory, the sesamoids, and the distal sesamoidean ligaments all constitute the suspensory apparatus. In this situation you can have a rupture of the suspensory. You can have a fracture of the sesamoid, and you can have a rupture of the distal sesamoidean ligaments when the sesamoids go up. What she has found here is that these mid-body fractures of the sesamoid, the most common fatal fracture we deal with, actually have preexisting pathology at the back of the sesamoid.

Now, you'd think well why aren't veterinarians picking this up? Well, fact of the matter is, this is not an easy area to image. These are examples of preexisting fractures and found on horses that died of other causes. What this is like is just like this preexisting fracture. It's just like the perforation on these set of stamps. Sooner or later it'll break apart. What we found here is these preexisting fractures, the same thing with sesamoids. The key here is to try to identify the signalmen and ways to image this fracture so that trainers and veterinarians can identify this problem before a horse suffers a fatal injury on the race track.

The real problem is the clinical diagnosis where there's diagnostic nerve blocks, nuclear scintigraphy, whatever method you have. In terms of radiographing these, they become very, very difficult. What we're trying to do is figure out a way to image these in either MRI or some other method that would allow their early diagnosis before they happen at the race track.

Another example is scapular fracture. These have also had preexisting pathology on them. You can see the large periosteum here. What the goal here is to try to develop a diagnostic technique and I will tell you in my years of practice, we did not typically examine horses in the way that Dr. Vallance who produced this paper is actually proposing. They developed a scapular

ultrasound technique where you don't have to have nuclear scintigraphy. Here is a normal spine and the scapula where these fractures occur. Here is one that already has a periosteal reaction. You can see it on the ultrasound, which almost every veterinarian has, and this is what you would actually see on a fracture that was non-displaced. Here is what you see on the nuclear scintigraphy.

Getting back to the humeral stress fracture, what we found with this particular fracture in the Southern California Equine Foundation, and this was a study that one of the practicing veterinarians on the circuit did using the Southern California Equine Foundation, Dolly Green Nuclear Imaging Facility data, is that every horse that underwent nuclear scintigraphy at southern California — and there was over 150 of 'em in this time period — every one that had a humeral stress fracture, not one of those horses died, whereas every horse that died during that period of time of which there were 50, 60, 70, not one of those had undergone nuclear scintigraphy. The point being that if you can identify this fracture before it fractures these horses can survive and this is what you see: the difference between a normal and abnormal.

We see the same thing in pelvises, trying to identify what are the signalmen of this? What can we tell our trainers to look for? Tibias as well. This is a fatal fracture in a horse right here, but if you get it — I've had two horses that became horse of the year with tibial stress fractures after being diagnosed and given the appropriate time off. The real issue here is how do we get this information, and as part of this program to develop continued education for trainers, what do we need to do so they actually understand what's happening so they can recognize these horses at risk and make the appropriate decision? It's not the just the trainer, it's the veterinarian as well.

What we're trying to do is take this program and develop a continued education program along with it. In the beginning it is not going to be a continued education requirement, but at some time it may be. We're talking about doing a similar thing with drug positives. For example, if you get a speeding ticket you have to go to driving school or whatever it is. Maybe we should be doing the same thing with people who have drug positives and people who have fatalities, even though they may be totally of no one's fault. It can be an accident, but I think the more people understand about injuries and how they develop and what they should be looking for, the chance we have to make horses healthier, keeping 'em around longer, get more starts out the sport, and keep those horses from breaking down on the race track.

That's what the goal of this program is and I have to give Executive Director Kirk Breed credit for developing this, finding the funding for it, and getting it organized. I think it's gonna be a wonderful program if we can keep it going, if we can keep the funding for it. Does anybody have any questions? No questions? Yes?

Audience Member: In regards to racing fatalities and prerace examinations by veterinarians and whatnot, is that just useless at this time?

Dr. Rick Arthur: No, it actually isn't. What we've done and what we're proposing to do — racing fatalities are relatively rare, about 1 out of 500 starts. Hopefully it's less than that. What we're doing is taking those horses that die, putting those horses previous record, go back and entering it into the InCompass prerace exam database along with cohorts. In other words, horses

that ran in the same race so we can compare them, the horses that didn't break down to the horses that did, to try to look at differences. It's not that it's useless. It's just hard to pull out.

The real problem is we require veterinarians to report all their treatments. The fact of the matter is they're impossible to read, they use codes, and most importantly, they're impossible to search because they're hard copy. Bluntly, the CHRB has an archaic DOS-based computer system and it's not gonna get updated for a period of time, but ideally as the Jockey Club Welfare and Safety Summit recommended, veterinarians should be submitting their medical records electronically.

I will tell you in Hong Kong, everything that's done by the veterinarians is entered into a computer as it's being done. If you do an endoscopic examination it goes right into the computer. In fact, if you want to, you should do this. Go on the Hong Kong Jockey Club website, ask for veterinary records, and you can look at the veterinary records of the horses that ran. That's not what we're talking about here. We're trying to do this to study the epidemiology, put all these things together. There's an epidemiologist, post doc epidemiologist that's done some very interesting work on jockey injuries down in Australia that's part of this program.

This is gonna be a very complex effort to try to put all this together and see if we can identify why horses are breaking down, and when we do, try to develop strategies to make horse racing safer so that we keep the horses around longer, we don't have breakdowns on the race track, all of which cost us a tremendous amount of money. The point is that animal welfare is good business for horse racing. It's a different environment today.

I was raised on a ranch. I still look at horses as livestock. I'm glad PETA finally agrees with me that it's okay to slaughter horses, but that's been a big battle for — the AAEP lost — it took a lot of grief over predicting exactly what would happen when slaughter was banned. Nobody wants to slaughter horses. Nobody does that intentionally, but the unintended consequences are very painful to horse industry, particularly with the downturn in the economy. The fact of the matter is that the public expects us to do the best by these horses. You talk to race track managers and they'll tell you when a horse breaks down, it really — there are people who leave the race track.

I was at Belmont when Go For Wand broke down and I will tell you a third of the people where I was sitting got up and left after that race. I will tell you it was the ugliest breakdown I had ever seen, but they got up and walked out. How many of those people never came back? It's something people — you know, it used to be they'd shoot the horses with a gun right out there on the race track. That's not acceptable anymore. It's not acceptable. If our business is gonna survive we have to pay attention to animal welfare. It's not because we're goody two shoes; it's good business. Scott, do you have any comments?

Dr. Scott Palmer: Well, I think that my comment about Penn State and the paradigm shift that's going on there at that university right now, and I think that the cathartic experience that we experienced between 2006 and 2008 really has sent us down a path that has been very positive for the horse. I think if there's a silver lining to all the catastrophic injuries we had during that period, it's something that I think that racing is much better today than it was in 2006. I think that people have increased awareness and I think they have an increased — increased effort's

been made. The NTRA's done a really great job with the Safety and Integrity Alliance and their inspection programs.

I was just talking to Alex Waldrop the other day, yesterday. He was telling me that there are actually some tracks in South America they're certifying now, so that's a big deal to have other countries look to the NTRA for certification. That's a really big deal. We still only have about 55 American tracks certified, I think, so there's still a lot of work to be done there. I've talked to some race track operators that don't see the value of NTRA certification which upsets me quite a bit, but that's an education process, perhaps, we have to go through.

I think that there's been tremendous steps made and there's still a lot more we can do. I think the unfortunate thing is that the economy also tanked about the same time and so a lot of the initiatives that we talk about cost money and are difficult to accomplish in such an economy, but I think people really are trying hard and I think it's a great thing for racing.

Dr. Rick Arthur: I agree with you. The economy has complicated a lot of the initiatives that the industry had started in 2006, 2007. Jeff?

Dr. Jeff Blea: This is a broad topic and you're absolutely right. Welfare is good business and welfare is an individual interpretation. I'm gonna speak from the guy in the trenches on the back side even though my attorney to my left advised me not to.

[Laughter]

The California Necropsy Program has been a phenomenal program and it's provided a lot of very good useful information, not only to veterinarians, but owner and trainers, and we've spoken at owner's seminars and provided this information but it seems to keep falling in deaf ears. When you have trainers that listen and owners that listen you don't have the humeral stress fractures. When you have people that aren't aware of it, you're gonna have the humeral stress fractures so there's a big disconnect.

How do we get this information — or how does this information go from what's known to how to prevent these injuries? 26.8 — well, no, excuse me. If there's 1 in 500 catastrophic breakdowns, that one could be devastating to a lot of people. I've been a track, as well, where horses break down and people just refuse to ever, ever come back. That affects us all. That affects me; that affects you; that affects this program; that affects our families, so how is that information transferred to the people that have some control over these animals?

What happened in California, or what's happening in California I should say, is kind of a pretty interesting thing. The veterinarians were approached on the back side about providing all the medical records and so forth and so on. I think there's a lot of misunderstanding amongst the practitioners. What's happening now in California, I think, is what's gonna happen, is there's been a workable solution and I think Dr. Arthur's come up with a pretty good workable solution and I talked to several of them about it yesterday.

What I think will happen is, I think veterinarians as a whole — and I'm gonna speak for them which you typically normally don't — we're very much a proponent of the welfare of the horse. We don't want to see these horses get hurt or break down. It's our job to do the best we can to prevent it. Transparency and disclosure is what's necessary. That's what has to happen and it is happening. The concern, I think, amongst practitioners, and not only practitioners but owners and trainers groups are, what are the legalities of it? For example, and I'll use myself, if I submit all my records on a horse that's euthanized or I have to euthanize, do I have that legal right, or does the owner have to sign off on that? A lot of that's being worked out. It will be worked out.

The solution that Dr. Arthur's come up with, I think is a very good one, and Kirk Breed as well where Sue Stover, I spoke with her last week about this and the information that's available to her from the practicing veterinarians is phenomenal. She can provide an enhanced orthopedic exam through the university which can then be used, as I understand it, as a CE tool not only to us as veterinarians, but to trainers and owners if I understand it correctly. I think the veterinarians are excited about that because that information to us is invaluable. Where they — I think the practitioners got caught up a little bit was is this an investigation or is it research? I don't think there was a clear understanding.

I think today there's a much clearer understanding amongst the practitioners and a real interest in finding out this information because I think it's good information. What I think will happen in the near future — I don't think it's too far away, but there's a workable format being used or being set up to be tested, beta tested, that'll go to the practitioners who are, I think, more than willing — I certainly am — to participate in this, to get this information to the university which we can compile this data, use cohorts or horses in the same race to compare to and then get that information back to the industry. If we can take that 1 out of 500 and take it to 1 out of 900, that's a great thing. An important thing in cohorts, and I don't know if everybody understand the value of cohorts.

An example — again I'll use myself — let's say I have a horse that comes up with a lameness the middle of September. I work him up; I block him out to the ankle; I radiograph him, it's negative; bone scan him, nothing much there; I go ahead and inject him. Let's say he's training, he's sound, he's worked four times. End of October he runs, suffers a catastrophic breakdown in that ankle. That information I provide, that's good information for the lab to analyze and determine how is that treatment, diagnostic, and training affected by the race or vice versa?

A cohort would be the same horse in the same — or another horse in the same race who also ran that I'd also medicated an ankle or a knee. So you can come to some conclusions, I think, that are valuable. Correct me if I'm wrong, whether medication is, in fact, playing a role or it's not playing a role, or how much of a role is it playing, or where do we need to adjust what we're doing as practitioners or trainers or owners as far as pushing these horses too hard? That slide of Del Mar, you know, of his horses are trained to death. It's multifactorial as Rick said. If we can solve part of that puzzle as veterinarians I think it's a good thing and I think transparency and disclosure are what's needed and I think it's gonna happen in the way it's being set up in California.

Dr. Rick Arthur: Gregg?

Dr. Gregg Scoggins: Rick, I've got a couple of thoughts and one thing, from my perspective as a lawyer and as something that's recognized I think by everybody, is good facts make good decisions. In the absence of good facts you start plugging the holes in with various guesses, assumptions, anecdotal and things like that. The world's not perfect so we can't always have the best set of facts from which to make the decisions, but the more facts we have the better decisions we can make. The database and the things that are being done, the various projects are being undertaken by the racing industry to understand better what it is that's going on inside the horse, how you can better identify what's going on so that you can prevent it, is a significant step towards getting those good facts.

The other thing I'll say, from a legal perspective, is that veterinarians do have a dilemma on their hands when it comes to participating in this effort to provide facts. In many states there are — almost every state — there is at least some provision in there that says as to the veterinarian, they have to keep confidential the medical records of their clients. That's the default rule. When a veterinarian is asked to provide the medical records they're often in a position of saying well I can only do it if my client agrees. Some states stop there, don't go any further, and it really puts the veterinarian in a predicament of trying to decide what to do.

Other states will say well, that's the general rule, but in the following exceptions might apply. For example, you're being sued. You have the right to release the medical records in that case. You're under investigation by the regulatory board, Board of Veterinary Medicine. You have the authority to do that. In other cases you will see when it is important for the health, safety, and welfare of the public or animals.

It's that kind of condition that would make veterinarians, I think, much more comfortable from an ethical/legal obligation if they could have that assurance that they're not getting themselves in trouble with their client because obviously sharing this kind of information when it relates to a client's animal could get the client upset and/or in trouble. So you don't wanna make the situation worse by sharing information that you're obligated to keep confidential.

I think we need to look at those states where — and the AAEP has kind of a model rule on what should be done in their code of ethics that says here's the circumstances under which you have to keep the — or that you're allowed to release information about a client's medical records. One of those is in connection with the health, safety, and welfare of the public and animals.

Dr. Rick Arthur: Yeah, in California the practice act actually has an exemption and lifts as required by a regulatory agency, which obviously the CHRB would be. There certainly was a lot of resistance to the veterinarians, but I think it was — they misunderstood it. What they didn't want, I guess, is like they do in Pennsylvania, and inquest, somebody second-guessing them and I'm sympathetic to that. Nobody wants to be second-guessed and unless there is — and we do this in California when there's a serious jockey injury. We subpoena records. We do a fairly serious investigation. In those cases that would be different.

That's not what we're talking about here in trying to understand why horses break down at the rate we do. I think we should all recognize that the U.S. has a fatality rate two to three times

higher than international racing jurisdictions do. What is that difference? Is it the way we race? Is it our surfaces? Is it our training? Do we have weaker horses? Whatever it would be. Those are the sorts of things we have to look at. Certainly, management issues have, in other studies, been identified as factors.

California, for example, horse is worked twice as often per start as they do in Kentucky and New York, so is that a factor? We really don't know. I think your point's well taken. If we don't have the facts we can't make any decision. Everybody has an opinion, but they're better opinions if they're based on fact and that's what we're trying to accomplish. Is there any trainers out there that would like to comment on this? No trainers? Well, I think we're about — we're gonna have to wrap up —

Dr. Scott Palmer: I have one more thing I'd like to say about the database. Remember that the number of horses that suffer these fatal injuries is very small. Because of that, it's extremely difficult to get meaningful data in a short time frame. If you think back to the first year that the injury database was recording data, there was some preliminary data that was reported by Dr. Parkin and then the next year a little bit more and now a little bit more, so it's been three years now that we've been accumulating data. It's taken that long to really get some meaningful numbers together to get some of these answers. I would just encourage everybody to be patient with the process. I think sometimes we tend to want answers right here, right now, and with this kind of a problem it takes a long time to gather that information so I would just encourage everybody to be very patient about it.

Audience Member: You guys didn't see me. I had a question. Do bloodlines or nutrition, could they possibly factor in? Cuz there are so many horses that race 50, 70, 100 times without ever breaking down or even becoming unsound. Is there any point in looking at those horses and some part of those horses life or blood or bone density or anything to try to figure something else from that?

Dr. Rick Arthur: Actually, that's a very good point. Certainly, with the equine injury database we'd be able to do that. I've never really looked at it in that particular way. The Jockey Club has put out a durability index on those sires that have horses that have more starts. Unfortunately, they're not commercialably exciting horses but the fact of the matter is that they are trying to look at other ways and I think you made a very good point. Looking at nutrition is really a difficult thing to do and obviously those horses that are alive, we don't get much bone density on 'em. We can do that on the other tissues and they can do that at Dr. Stover's lab if she so desires.

It could do that at other labs, but I think the real point here is nobody's trying to second-guess anybody. What we're trying to do is gather information so we can understand why we lose so many horses. It's not just the fatalities. Almost all these injuries are progressions of injuries and if you — humeral stress fracture is a perfect example. We still lose more of those than we should but I will tell you we save a whole heck of a lot of 'em simply by being able to recognize 'em in doing the diagnostic procedures to eliminate those. We do the same thing with scapula fractures. If we can figure out a way to identify these preexisting fractures in the sesamoids, we're gonna save a lot of horses. I'm convinced.

Dr. Jeff Blea: There's actually a paper, it's not complete, but they're looking at radiographic techniques to look at those fractures and sesamoids. I actually, embarrassingly enough, I read the paper before the project started so I went home and I tried to figure out how to do this and I have about as much engineering talent as Mickey Mouse, but I got some good views and I thought huh, I wonder if this is it? The horse had an ankle and I will tell you, a week later he fractured is sesamoid.

My point being is if we can provide more information up at Davis, I think we can learn a whole lot more to prevent those numbers from declining. If you look at that Grayson study that Rick put up, we started on a ten month period with 250 some odd horses. We ended up with 38, most of which came back to the population. They weren't catastrophic, but if we can prevent those injuries and keep 'em in the population, racing is surely gonna thrive because of it.

Dr. Scott Palmer: Yeah, the more we can keep horses around the more it's gonna make this sport financially viable for owners. We have to recognize that. It's almost like some of our corporations, there's too much of an emphasis on a quick return and not as much on patience. It's not like the days with Charlie Whittingham 30, 40 years ago. It's a different game today and I don't think the horse has benefited from it. I don't think horse racing has either. Anyway, does anybody have any other comments? Is there another one? Yes, Caroline?

Audience Member: I'm curious where we stand on the biomarker research and if it can help detect fractures.

Dr. Rick Arthur: The biomarker research showed that there were biomarkers that would indicate impending injury. The resolution wasn't good enough, but it was a proof of principle paper and Dr. McElroy's lab at CSU at Fort Collins, Colorado State University, is trying to refine those and look at specific biomarkers that could be useful in that direction. Those were just blood tests, so it was a very interesting study. I think it shows a lot of promise. It's just not ready for primetime and probably won't be for another five years, ten years.

Dr. Scott Palmer: The subject of micro-fractures, we're asking our examining veterinarians at the racetrack, these would be the regulatory veterinarians who do prerace examinations, to do an impossible task in some respects. When you do an examination on a horse and you can see soft tissue swelling or lameness or callus formation or heat inflammation, things like that, it gives you an indication that you need to look further and maybe put that horse into what we would call an increased level of scrutiny or a high index of suspicion. Something could be wrong. A lot of those horses race really great and do so many times.

Oftentimes the horses that have a catastrophic injury are the ones that are a total shock to us. We have no indication that something was going on beforehand. Barbaro was a perfect example of that. At the same time, Dr. Stover's laboratory has documented this phenomenon of subcondylar bone injury and bone remodeling that precedes fracture. That certainly has gotten veterinarians thinking about this. Again, it raises that level of suspicion quite a bit, so we look at radiographs differently. We've come to appreciate the changes that occur on the palmer aspect to the cannon bone, for example, and the fetlock is being — things we're paying a lot of attention to.

In a broad sense, there's a disease called palmer orthopedic disease and that condition is one where you have sclerosis in the bone, sometimes micro-fractures, but typically it's an erosive process. Rick actually had a picture of one of 'em up there with a lesion on the bottom of the cannon bone. Right next to that picture he had another picture of a horse with a parasagittal fracture line, a condylar fracture if you will. There was some really good work done in the past year looking at the use of standing MRI and scintigraphy to help diagnose these things before they became catastrophic injuries.

What they found out was that the scintigraphy was a really great indicator of palmer orthopedic disease which is a degenerative change in the back of the cannon bone, but it was not a sensitive indicator for parasagittal cracks which are the predisposing diseases that lead to fractures. The palmer erosions really don't lead to condylar fractures.

That's something — that was news to me. That was an important thing that I learned from the process that the simple presence of increased uptake in the back of the cannon bone doesn't mean that that horse is gonna get a condylar fracture, but the parasagittal crack does. Sarah Powell [MA, VetMB, MRCVS at the Rossdales Equine Diagnostic Centre, Newmarket, England] who is working over in Newmarket has a technique for doing standing MRI to pick up these cracks. She looked at a group of horses where they found, in a group of 50 horses they found 35 horses that they examined had evidence of parasagittal fractures or P1 fractures or sesamoid fractures that had no radiographic signs whatsoever, so 35 out of 50 of those — now they were looking at lame horses.

These were not normal horses, but out of 50 lame horses with negative radiographic findings, they found 35 of them with these lesions that could lead to catastrophic injury. I think that the technology is getting better and better. Now there was a lot of artifact issues with the standing MRIs. There was a lot of — motion correction software can only do so much.

The high powered mags, the high field magnets do a much better job but you have to anesthetize the horse and clearly there's a significant risk in anesthetizing a horse with a fracture. You x-ray 'em and diagnose 'em and then you can't wake 'em up. There's some real problems with that but I think the standing scanning techniques are getting better. The cost factor, again, is huge though for something like that. Again, we're not gonna do a standing MRI on every horse before it goes to the gate. I think that it does give us an opportunity, at least, for some high profile horses where you have that index suspicion, to do that kind of an examination and maybe head something off at the pass. We're getting better and better technology to do that.

Dr. Rick Arthur: One thing I think people should remember about prerace examinations, there is one examining veterinarian at Los Alamitos to look at about 60, 70 horses a day. That means his face time and the time he has to do that is probably not more than 90 seconds a horse. It's really a different process. Sometimes — and I realize I'm talking about my particular area — sometimes I think we're a little bit too cheap on examining veterinarian care. That's an issue with the economy the way it is we're not gonna resolve.

It's much different, again, in Hong Kong than it is here in terms of the ability to have veterinarians prerace their horses — prerace examine their horses. Their examinations are actually done the day before the race, not the day of, and without any medication. I think, Steve, I think we're done. Thank you everybody. Appreciate your staying and hearing what we have to say.

[Applause]