The Power of Information —
Collection, Reporting and Use

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Dr. Mary Scollay: I'd like to thank you all for coming to this morning's session. I'm Dr. Mary Scollay and I'll be moderating this panel. I feel slightly uncomfortable introducing myself. I'm the Equine Medical Director for the Kentucky Horse Racing Commission. I'm speaking to you today as the veterinary consultant to the Jockey Club equine injury database.   What I'm going to do is sort of give you an update on where we are, what we've accomplished, what we need to accomplish and why it is important to do so.

Some of you may have heard some of this before but I think it's important for us to retain our focus as to why we are doing this. The industry has got to have accountability with regards to its athletes. I believe this is the only professional sport, perhaps other than wrestling, that does not, has not historically kept records of the condition of its athletes. By not doing so we've sent a bad message; either we're not interested in collecting the data or that the news is so bad we really don't want to know what it is, and neither message is compelling and neither message is constructive. Quite honestly, I don't believe either message is true. It's time to move forward in a scientific fashion.

By having standardized reporting criteria and terminology, the data will remain relevant over time, over changes in personnel, and it will remain useful as opposed to having a short shelf life because the data was identified by an individual who was no longer on scene. Finally, the data will serve as a

resource for the scientific identification of risk markers and risk factors with the goal of reducing the severity and occurrence of equine racing injuries.

Why is it important that the industry collect this data? Other groups outside the industry are already doing so. The quality and the scope of their data are not verifiable, and that's problematic, and their data is both objective and subjective typically in a combined format and without distinction. Again, that's problematic. You'll see that in just a minute here. I've got a couple of examples.

This is a web site called Race Horse Memorial Wall Worldwide, and it does encompass racing injuries around the globe. This is one of the postings. A couple of interesting points here, this references a track in the United States, in Pennsylvania. However, the information was contributed by someone in Bryan, Texas, so it is not clear how that individual got the information. Additionally, there is a comment here regarding the owner/trainer and other horses that have been injured. This may or may not be accurate but it is included in a public setting and can be I think inflammatory, particularly if it is not verified data.

This is another posting from that web site, and I think you can all read this and see that it is beyond factual. There is subjective content here that is inflammatory and not constructive. They've gotten sufficiently sophisticated that they now have a spreadsheet that can be searched, and if you look right there, what it says is "pulled up on a chewed up turf course"; not particularly scientific, not constructive data, and not something that we can use going forward.

Another web site that is tracking horse injuries and this is actually done through the monitoring of race charts and race comments. They will note every horse that fails to finish, is vanned off, and is remarked as broke down, bad step. One of the interesting things here is that every horse that is noted as vanned off is reported through this web site. We have had some racing jurisdictions who have expressed reluctance to participate because their standard practice is to van off any horse who fails to finish or whose condition is in any way questionable, even if it is subsequently determined that horse is not injured. The equine injury database allows you to make that distinction whereas this externally-managed web site does not allow for that distinction. The perception here is that these horses are all injured. That simply may not be the case right now. That's the only information that is out there, and that to me is problematic.

These folks are motivated and they are working hard. They follow up on horses that have had reports, and they also send out queries wanting to find out about horses if they have not been able to get any information themselves. I will say in some cases they are exceedingly thorough. There was a horse that raced at Gulfstream that was injured when I was working there. The horse sustained a condylar fracture and I followed up on the

horse to find out that he would be having surgery. He was intended to be retired after the surgery. I later saw on this web site that the horse had received surgery, had recovered and was now standing at stud in South America, which was more information than I was able to get at the time from the practicing surgeon or the owner or the trainer. They are aggressive in following up. I don't know how accurate some of the information is.

Data collection; just to let you know how we're working right now, we have a first-tier reporting where any event that involved intervention by the regulatory veterinarian generates a case and is reported into the equine injury database. This could be a racing incident or injury, a paddock, post-parade or starting gate incident. Pre-race inspection; if a horse is scratched for unsoundness or otherwise unfitness for racing by the regulatory veterinarian that would generate a case. Second-tier, which we have started and in some jurisdictions we're getting good cooperation, in others it is more problematic. This involves reporting perhaps by the practicing veterinarian as opposed to the regulatory veterinarian, and that would include training incidents or injuries or non-exercise related conditions, whether it was laminitis, colic, plural pneumonia, stall accidents, that sort of thing.

Our participation in 2009, we had commitments from 83 race tracks, and that represented 84 percent of live flat racing in North America. This included thoroughbred racing, quarter horse racing, appaloosa, arabians and mules. The National Steeplechase Association also joined in to the program. Clearly the system has been modified for their needs or specific to their needs. That data is not included in the flat racing database, but they have started their own database modeled on the flat racing model.

November 1, 2008, through October 31, 2009, we completed our first 12-month reporting cycle which included participation of all the race tracks who had committed to reporting. That included quality control of the data, so we were able to verify for a given day that any events that occurred that day had been reported. Each reporting veterinarian would check off a date box. If nothing happened yesterday you would go in and check that box so there was no question as to whether there was a report missing.

The data can be looked at two ways; local data analysis and then the more nationally composite view. For a local data analysis, InCompass has developed software and enhanced reporting module, and it's scheduled for roll out to the race tracks this coming January, There will be designated user training. There will be phone support, and there will be a user guide. I've seen some of the, I guess it's the beta testing. It's very intuitive. It's easy to use, and I think that it's very important that people look at their local data. This makes it much easier to do that. It is, however, important that reports are entered correctly and completely for the reporting module to have value. Like they said in computer science 101, "garbage in, garbage out", so it still relies on the reporting veterinarians to be mindful when they enter the data.

The reporting module really is going to have two components. One will be looking at specific injuries sorted by different factors, and that could include surface and surface condition, able to sort by trainer, location on the track where the injury was perceived to have occurred. There is a list of factors that you can sort by. There's also a summary type data, and I'll show you some screen shots of those, where non-fatal and fatal injuries are shown categorically and graphically based on a number of different factors.

In asking you to look at your local data, I also want to encourage you to seek assistance from qualified individuals. The analysis of the data can be daunting. It can be very confusing, and clearly there is a very critical need to get it right. There are epidemiologists; Dr. Parkin will speak shortly to explain to you some of the things that he's been able to do with the data. But on the local basis, don't be afraid to reach out to your local veterinary college, or it doesn't have to be a veterinary epidemiologist. It could be a medical epidemiologist or someone at a local university. Don't be afraid to reach out to them to assist you in looking at this because you need to know if you've got a significant population for analysis. You need to get it right, and they can help you do that.

This is a redacted chart of the injuries being sorted by type of race. Clearly you often hear people talking about well claiming horses are an increased risk of injury by virtue of them running in claiming races. This is some of the ways that the data can be sorted for you to look at it. This is another — I like this because it's just really visual and I sometimes need that. Fatalities by distance, pretty easy to see even if you can't read the numbers. The really important thing that the Jockey Club and InCompass are providing you is control data. The information on the right is absolutely meaningless unless you know what the starts are over those distances. This means nothing. You don't know whether this distance is over represented and that horses are more frequently injured at that distance at that race course without having the information as far as the distribution for starts. One of the benefits of the local reporting system through this module is that you will get control data and make your local data meaningful to your situation.

Some of the reports allow the users to identify differences between case and control populations, but it's important to understand that it will not answer the question why do those differences exist. That still needs to be investigated. Ultimately what this is going to allow us to do is respond to assertion with fact. We've all heard in the last few years that horses are sustaining injuries with more frequency and greater severity. Currently there is no data that exists to respond to this assertion. By virtue of the fact that there is no data, the inability to respond has validated this assertion.

I keep saying the perception of horses sustaining injuries has increased dramatically. When I first went to the race track with my father when I was seven or eight, the only races we could see were the live races at Arlington.

There was no inter-track wagering. There was no Horse Racing TV. There was no internet. I didn't know if a horse got hurt at Belmont or not. I had no way of knowing. Now information overload, we are exposed much more. Does that mean the injuries are occurring more often or are we just more aware of them? That's one of the questions that ultimately this database will be able to answer over time.

Review the data at your race track. It's logical and it's necessary to analyze the data when you're faced with a problem. That's one of the reasons it's there. It is also logical and necessary to analyze the data in the absence of a problem, and that rarely gets done. Understanding why problems do not occur is as important as understanding why they do occur. So this data should not be accessed only when something has gone wrong. You should be looking at it on a regular basis trying to understand when things go right. When a person has surgery and things go wrong, they blame the doctor. But when the person has surgery and things go right, they say, "thank God". Well, you need to accept responsibility all the way through, so look at the data when things are going well. Look at the data when things aren't going well. That's how you're going to get the most value out of the data and learn the most.

Local data analysis, you can evaluate the data at any time. You can follow up on specific cases, find out when a horse runs back, if he's had a change in class, you're able to do that sort of thing. You can assess injury clusters. You can incorporate weather data, track maintenance data. You can insure the consistency of data collection interpretation over time. You can assess responsive changes and practices, procedures and regulations. It's your data, use it.

National analysis, again this comes back to the key points of the equine injury database; identifying injury type, frequency and outcome, identifying risk markers and risk factors, identify trends over time, and establish a point of reference. It is critical that the local and national data be integrated and viewed side by side. If you only have one side of data to the exclusion of the other, it means that a significant piece of the puzzle is missing, and I'm going to give you an example here.

This is a fatal injury distribution frequency from some years ago when I was working at a race track in south Florida. Each one of those red diamonds represents a horse that sustained a catastrophic injury and required euthanasia, and those diamonds indicate the location on the track where the horse was perceived to go badly wrong. The injuries were predominantly clustered from the half mile pole to the 16th pole. In interviewing the jockeys, they pretty much all stated that the horse stepped in a hole. Clearly, there's talk at the race track, there's concern, and the conclusion is well there must be something wrong with the race track.

But let's stop for a minute. Did the horse really step in a hole? Could the jockey's interpretation of what he felt be incorrect? Could it be that the abrupt change in the functional length of the limb felt as if the horse stepped in a hole? Do you know anything about the injuries that were sustained by those horses? I would bet — I would bet that almost all of them were sesamoid fractures, where the suspensory apparatus fails and the fetlock drops, and that's going to feel like stepping in a hole. But we stop with — they all happen in a certain region. The jocks say the horse stepped in a hole; we've got a problem with the track.

If you knew that this injury distribution pattern that is observed at your track is fairly consistent for race tracks across the country and appears to be independent of race distance, track size and track configuration, suddenly that changes your perception of the problem. The question changes from what's wrong with the race track to what event or series of events occur at this stage of the race to precipitate injuries. It's a completely different question. Before you go digging up the race track, you take a critical look at it, not the surface but the events that occur during that period of time. If you didn't have the national reference point, you would be convinced, and not incorrectly so, that you need to take a good look at your surface. If you know that everyone else has got that same distribution of injuries that changes the problem. Asking a better question is the best way to improve the quality of the answer. The Jockey Club equine injury database has the ability to significantly improve the quality of the question both on a local level and a national level. With that, I'm going to introduce Dr. Parkin.

Dr. Tim Parkin is a DEFRA and Scottish Funding Council Senior Research Fellow working in the Boyd Orr Centre for Population and Ecosystem Health at the Faculty of Veterinary Medicine, University of Glasgow. I thought Equine Medical Director for the Kentucky Horse Racing Commission was a long title, but he wins. He qualified from the University of Bristol with degrees in zoology and veterinary science, and immediately took up a position at the University of Liverpool and completed his PhD on the epidemiology of fractures in race horses in 2002. Since then he has worked on numerous projects with several different racing jurisdictions around the world. He gained his diploma at the European College of Veterinary Public Health in 2006 and has worked at the University of Glasgow since February, 2007. Dr. Parkin currently serves on the Veterinary Advisory Committee of World Horse Welfare, the Scientific Advisory Committee of the Pet Plan Charitable Trust, the Editorial Consultant Board of the Equine Veterinary Journal and many other honors and distinctions. We are pleased to have him here today, and we look forward to working with him on the equine injury database.

Dr. Tim Parkin: Thank you very much for the invitation to speak today and it is a pleasure to be involved right from almost the very start of the establishment of the equine injury database. I think it's something crucial that you guys are going to have to face in the coming years. It's essential

that even if you are unable to do something about what's going on in your tracks in terms of injury, you've got to know where you are in terms of the level of injury and the different types of injuries that are occurring on your race courses. If you don't know that, then really you can't move forward at all. So the establishment of the equine injury database has been a crucial step in that direction.

What I want to talk about is really what we've done with similar databases internationally, and I've picked a couple of examples. One from work we did in Hong Kong and one from work we've done in the UK. I'll really just go through a very quick spin through some of the work we've done in both jurisdictions.

Here you have Hong Kong. This is Happy Valley, right in the center of Hong Kong, an amazing race course to go racing on a Wednesday evening. It's lit up by all the concrete around it. It's an absolutely incredible place to be. The objective from the Hong Kong Jockey Club was that — what they wanted to reduce was the amount of turnover of horses racing in Hong Kong. The betting public wanted to see the same horses coming back year on year. We were really called in, and we've got a PhD student, Ken Lamb, who has been doing this work in Hong Kong. We were really called in to identify the risk factors for retirement for their major causes of veterinary retirement, which happen to be tendon injury, and then identify management strategies that might reduce the occurrence of tendon injury.

In the UK, it was a simpler question really. We were just identifying what are the risk factors of tendon injury in jump racing in this particular example. Also they were interested in — in these times where money is tight, they were interested in identifying how we might be able to best prioritize future research so that we get best output from the research we were going to be commissioning.

As I said, the first aspect is what we did in Hong Kong. I just wanted to— I've just got one slide on the Hong Kong data. They, in comparison to the equine injury database over here, they've been collecting information, as you might expect, since 1972. We use information from 1992. They've got an enormous number of fields. These are the number of variables that they have in those databases which are incorporated in more than 400 different tables. They have 1200 horses stabled in three-story stable blocks. That's Sha Tin, one of the two race courses in Hong Kong. Importantly, all veterinary needs are provided by the Hong Kong Jockey Club, so they have a very good handle on what happens to every race horse on every training on every race day in that particular scenario.

As I said, we identified very early on the priorities, and the priority was that tendon injuries resulted in more than 25 percent of all single veterinary-caused retirements in Hong Kong. That was the major priority. We were to

do something about the major objectives they had, which was to reduce the number of horses not coming back for the following season.

Some of the risk factors we identified when we conducted analyses were Asian import appeared to be important. All horses in Hong Kong are imported. There's no breeding in Hong Kong. This is the distribution of the age at import, two and three year olds predominate. There are very few four and five year olds coming in. If you were five year old coming — four year old, sorry, coming in, you are five times more likely to go on and retire due to tendon injury than a two year old coming into that population. Clearly, the majority of horses in Hong Kong come from, or 67 percent come from Australia and New Zealand, and we have very little information on what they did prior to their arrival in Hong Kong. However, they are all screened and they are generally a relatively healthy population of horses.

Looking internationally, the fatality rates and injury rates, Hong Kong performs very well. Although it has possibly something to do with what they were doing in their previous training and racing careers, we don't think it has anything to do with them coming in with a previous tendon injury. We think it maybe to do with the amount of racing that they performed in their previous time before they arrived in Hong Kong. However, when they did arrive in Hong Kong, we identified that what goes on in their first six months after arrival in Hong Kong, which is a very different situation and a very different environment to where they might have been previously, is critically important to their likelihood of suffering a tendon injury that results in their retirement. Specifically what came out as being important was the distance raced in the first six months, so per thousand meters is what we're looking at here.

If you look here, I'll just take you through this. There's another slide coming up in a minute. This is the date of import. This is the number of days from that date of import; going 30, 60, 90, etcetera, up to 270. This is an odds ratio. An odds ratio tells you how much more likely an individual animal is going to retire due to a tendon injury than a selected control. This is per thousand meters, so for every extra thousand meters that the horse raced in that first six months, up to 180 days here, they were 1.25 times more likely to then go on and suffer a tendon injury that resulted in their retirement. This has resulted in basically us reporting this back to trainers, and now their perception is from the vets on the ground that actually trainers are much more careful with their horses. They're much less ready or much less eager to get them into racing very early, and they tend to race them over shorter distance in their first six months of training while in Hong Kong. This should have a significant impact on the number of horses suffering a tendon injury that results in retirement.

The other aspect we looked at was the exercise intensity coming up to the time of retirement, and this is in terms of the number of fast-paced episodes; fast-paced being gallop, barrier trial. Barrier trial is where a horse comes

back from a time of layup and had to go through a barrier trial, so it gets loaded into stalls, does 400 meters at race pace to prove that it's fit to race. This time, this is the case date, so the date that the tendon injury occurred. We're going back in three-month blocks here. This is one three-month and then this is three months to six months prior to this date. For as much as six months prior to the case date, case horses, those that eventually ended up retiring due to tendon injury, were doing less work than control horses, even though these were fresh tendon injury occurrences here. This tells us that essentially the trainers knew or were aware of a problem with those particular horses. They were holding back on them. They may not have been quite sure what was wrong with the horse, but they knew that the horse wasn't performing to its best. They were holding back on its training and actually potentially giving an early signal to the vet, see if they've gone to the vet, so that horse may have actually been going on to suffer retirement due to tendon injury.

The other aspect of this was the number of days without fast exercise, so these are the number of days where — remember they know what every horse does on every day in racing and in training. This is the number of 61 to 90 day intervals between fast-day episodes or fast-day events. Here you can see the cases in blue and the controls or the cases of those horses that suffer tendon industry, and there's very little difference in the profile of these two plots. If you look at the number of 120 day plus intervals, so horses being off training or not doing anything faster than a canter for more than 120 days, which is extremely unusual, then they've got one, two and three of those type of events. Horses that went on to retire due to a tendon injury were consistently four to five times more likely to have this many 120 day intervals of training.

What this has resulted in, well we've identified some risk factors, but this is really — what's really crucial for the Hong Kong Jockey Club was that we've identified some potential management tools for them. They now have vets exams and training differences that they can monitor. They have real-time monitoring of what horses are doing, so they know when a horse suddenly makes that dip in the exercise intensity it's been producing and they say, okay, that might be a horse that's going to then go on to suffer a tendon injury that's going to result in his retirement.

They've introduced a long-watch system, which essentially results in those horses being monitored much more closely. If the horse doesn't come from the trainer to the vet, the vet will go to the trainer and say we've noted something about this horse's training. Can you tell us why this is happening; why have you backed off on his training? There may well be a very good explanation for that, but it may well be that the vet has a quick look over the horse, has an examination of the horse and identifies something that the trainer wasn't particularly aware of. The whole point is identifying at-risk horses before retirement, and just some acknowledgements from that work. That's the work we did in Hong Kong, and it really resulted in some

significant management changes over the last two years that should have an impact on the number of horses retiring due to tendon injury over there.

I continue with tendon injuries in the UK. What I want to talk here about is really a bit of history. The majority of studies in this field have worked on the basis that they use race start as the response variables. In other words, they're looking at what is the likelihood that an individual race start, by any horse, results in tendon retirement or fracture or whatever or fatality, and identifying why that start resulted in fracture or retirement, and the other starts in the same race didn't for example. We've identified a number of different studies, and these aren't just our studies. There have been a whole raft of these studies in this country and elsewhere; age of horse, age of start or racing career, etcetera, etcetera, a number of different risk factors that are clearly associated with the likelihood that a horse is going to suffer a fracture or a fatality or say a tendon injury.

There is something that us as epidemiologists or statisticians have been rather neglectful in ignoring. We've ignored it really because we haven't had the computing power to be able to deal with it. There is, in statistical terms, there's an important assumption that we make in that every start is independent of every other start that we are monitoring, we're looking at. That's clearly not the case if you think about racing. Starts made by the same horse in different races are more likely to be similar than two random starts by two different horses. Starts made by different horses in the same race are more likely to be similar. Starts made by all horses on the same course are more likely to be similar. Horses sent out by the same trainer are more likely to be similar, etcetera, etcetera. There are a whole bunch of assumptions that are being violated within a lot of the previous studies that we've all been conducting. That's purely been because of a lack of computing power that hasn't enabled us to investigate them properly. We now have that computing power that enables us to do it.

Just to give you an idea of the complexity of the data structure that we were dealing with, here's the race start, 150,000 race starts that we used in this particular analysis. These starts are obviously clustered in races, so all starts within this race one are more likely to be similar than two random starts selected at random, say start one and start three. We had, in this particular data we had 13,000 starts. Similarly all starts are clustered with a horse. A horse makes some numerous starts over his career, so those starts made by the same horse are more likely to be similar. If you carry on down, obviously you have numerous races on different race courses. We have 43 race courses in the UK that we used for this analysis, but then even more complexity arises from the horse level where actually you've got multiple horses sent out by the same trainer. You've got multiple horses sired by the same sire, and you've got multiple jockeys riding different horses. So you can see there is a real complexity of the data here that really we haven't accounted for previously and we need to do so. A byproduct of doing so is

that we do identify where the priorities are for future research, and I'll show you how that is in a minute.

First of all, I'll just talk about the risk factors we identified for tendon injury in the UK, and this is all turf racing remember. The firmer the going on turf racing in the UK then the more likely the horse suffers a tendon injury that is a severe enough tendon injury to result in its being notified by the vet. This is a consistent finding in the UK when we're looking at fractures or fatality or anything that we're looking at. That's slightly counter intuitive to what you may see over here where often you see very wet dirt surfaces are more likely to result in fractures or fatalities, but this is turf racing remember.

We also identified — this is jump racing and hurdle racing we're talking about. We do jump racing year-round now. Summer jump racing increases the risk of a horse suffering a tendon injury. Winter jump racing for some reason reduces the risk significantly of a horse suffering a tendon injury. This summer jump racing is not just because of the firmer going during the summer. That's already accounted for in the model. There's something else about summer jump racing that increases the likelihood that a horse is going to suffer a fracture or a tendon injury on that particular day. We're thinking of things like grass cover quality, watering, rainfall at different times of the year, etcetera, etcetera. This has sort of led on to what a new PhD student is going to be starting on in January.

A couple of other risk factors that came out; distance, the longer the race, the more likely you're going to get an injury, older horses, and significantly previous tendon injuries on race courses. It's what you'd expect, and it's good to see that sort of thing in the model because it tells us that the model is doing the right thing. Horses that have a previous tendon injury on a racecourse are about 40 times more likely to suffer a tendon injury on a subsequent event.

As I said, I just sort of spoke at the beginning about this UK stuff, about actually prioritizing where we might go with future work. This is just a plot of 42 race courses, 42 hurdle race courses, obviously anonymized here, and this is the number of tendon injuries per thousand starts on those tracks. Then there's an enormous variety here. It goes from about two per thousand starts up to close to 15 per thousand starts on the right-hand side of the scale. You'll notice these bars here. These are confidence intervals. Really what it tells us, it gives us the uncertainty around these estimates, of what the true prevalence of tendon injury on those tracks is going to be. Actually what you can tell from this is essentially there's probably a group of tracks down here that are very low risk and a group of tracks up here, a relatively small group of tracks, that are reasonably high risk. In the middle, although it looks like a trend, and actually a lot of these bars overlap so they're not significantly different from each other. Essentially what we saw from this was that actually there is a difference between some of these very high-risk tracks and some of the very low-risk tracks.

This led us to start thinking how can we use the multi-level modeling that I talked about that accommodates the lack of independence to identify where our priorities should be. If we just think of the six areas that are likely to account for some of the variation in say tendon injury, for a start resulting in a tendon injury. If you think of the factors associated with the race, factors associated with the race course, genetics of the horse or the sire and the dam, factors associated with the horse itself; so it's age, it's gender, factors associated with the jockey and factors associated with the trainers, so the typical training regime that the horses might be undergoing. We think well, okay, if we start off with that premise, that each of those has an equal contribution to the likelihood that a horse is going to suffer a tendon injury in a particular start, well that's an unknown hypothesis. Well actually what turns out is that it's actually much more like this. This is where the significance lies, at the level of the race or at the level of the horse.

You know the jockey disappears in obscurity. There's a small amount of effect of genetics, a relatively small amount of effect as a trainer, and the race course is subsumed into a lot of what goes on in a particular race on that day. There are individual factors on that race day that influence the likelihood the horse is going to suffer a tendon injury. If we add into those the risk factors I just talked about, so these are the race level risk factors; going, season and distance. These are the horse level risk factors; previous tendon injury and age. We've accounted for some of the variability, so there's much less red here now and much less green, but there's still a good deal of variability left out that we still haven't accounted for that we need to keep on searching for, other risk factors that will help us reduce the number of fatalities or tendon injuries or fractures indeed per start that we see in the UK.

This has really led — so we've identified some risk factors in the UK. There are clearly others still to find, but it has led to targets for future research and it helped us get a new grant from the Horse Race Betting Levy Board for a PhD student to start specifically looking at race track management or factors that influence the likelihood of fatality in the UK, specifically on turf racing in the UK. That guy will be starting in January of 2010, next year, so very soon.

There are clearly some other horse level factors that we need to pursue as well. What's important to remember here in these analyses is we didn't have anything to do with the training. We couldn't accommodate anything to do with the level of training the horses have been going on, and we didn't have anything to do with their health records. A good deal of the horse level variability has probably something to do with their training and their health records that they had individually. Clearly this is just for tendon injuries. There could be a very different picture for fractures, fatalities, etcetera, etcetera, and just some acknowledgements there.

What I hope you see is that essentially the analyses of databases that are set up like the equine injury database is extremely complex, but it can be extremely rewarding. There are an enormous number of things we can gather from these databases that clearly will have an impact on individual tracks and on the whole picture nationally in terms of reducing the number of fatalities or fractures or tendon injuries that we see per thousand starts or as a percentage of starts in the USA. I'm happy to take any questions at the end. Thank you very much for listening.

Dr. Scollay: Thank you, Dr. Parkin. Exciting work, and I look forward to being able to get started with some of it on our own data. Patti Strand is with us today, and she's an internationally recognized animal issues expert. She's written articles and published views on animal welfare, public policy and animal rights, which have appeared in a wide variety of trade, professional and scientific magazines and lay publications. She's been a guest expert and panelist on radio and television news and has been a featured speaker at conferences for zoos, state and national veterinary groups, physicians groups and lab animal scientists, kennel clubs, and federations.

Patti has served on numerous animal welfare and animal control advisory boards and state and federal committees and task force bodies. She's been a member of the American Kennel Club Board of Directors since 1995, and she served on the U.S. National Wildlife Service's Advisory Committee since 1994. She's the co-author of the 1992 book *The Hijacking of the Humane Movement; Animal Extremism*, the first book published in the U.S. exposing animal rights extremism. This book was featured at the 1993 national conference of state legislatures as a key resource for understanding contemporary animal issues. She's the chairman and co-founder of the National Animal Interest Alliance, which was founded in 1991, to promote responsible animal ownership and use and to counter the misinformation of radical fundraising groups. National Animal Interest Alliance is a leading media resource for all issues related to animals, animal welfare and animal rights. Welcome, Patti.

Ms. Patti Strand: Thank you very much, Mary. You were supposed to say three sentences, so it was a bit much. I'm very happy to be here today. I don't have a horse. I am a dog breeder so I am an animal person. I'm involved with hands-on animal care every day. I breed dogs for the show ring and also for performance. In many ways I'm the last person, if you knew me in the 60s, 70s and 80s, you would not expect me to be here talking about this particular subject because it's the last thing I expected to be doing.

At the end of the 80s, after running around show rings and having this as a hobby for about 20 years, we began to see a different kind of legislation come along than what we had seen before. The things that were troubling about the legislation, because we had worked to put through ordinances in

our local community that were responsive to real problems, was that there were big media campaigns that ran with these particular legislative efforts. During the course of these legislative campaigns, whether or not they passed, and usually we were able to defeat them, there was — we had to recognize that the public perception of what we were doing as dog breeders was certainly changing. These are some of the elements of the campaigns that we were involved with. Basically what I guess I'm telling you is that through the course of the last 20 years, I've developed the dubious distinction or I've earned the dubious distinction of becoming kind of an expert on animal rights campaigns and animal rights extremism.

One of the things that got my attention and probably got me engaged in this; rather than just having it be something that I did for a summer or two and then going back to my routine, was going to an anti-breeding workshop during this period of time and expecting to hear, see, interact with people who would be talking about animal welfare issues. Instead, this particular workshop had, as the quote shows you on the screen that was the goal. It said, "The goal is to make the public think of breeding dogs and cats like drunk driving and smoking". I'm not in advertising but I did recognize that this was a different kind of issue than what we had ever faced before and that people were highly organized and that we needed to pay some attention. What they were engaged in is something called cause marketing and conflict fundraising. Not just marketing but a particular kind of marketing where in order for the marketer to be successful, the target had to be vilified.

Again, this was very troubling to us. We liked our sport. We recognized that it had problems. I think that for myself, personally, and the group that I'm with, we see a bell curve. We know that in just about every industry that we can think of, and not just in animal issues; but whether you're talking about medicine, or you're talking about law or anything, you will always have some people who are not doing what they should do; some people who are leaders and who are innovative and who are moving that industry forward, and then a whole lot of people in the middle. We did not think that overall that what we were doing in our particular sport was — we thought it was positive on balance.

So it is that I became an activist on these issues by accident and founded NAIA in 1991. Our goal basically was to unite all of the different animal groups so that we could stop animal rights extremists. At this point in time we are working with the biomedical research community. We're working with zoos and circuses. We're working with animal agriculture. Then we have the dog and cat fanciers, and a lot of people from just regular pet owners that are with us.

The talk today is the power of information, and I kind of wanted to turn it around because my orientation is a little bit more toward having us think about public perception as we move forward with the idea of gathering

information. I changed it to empowering information because I am a data nut and our organization, the National Animal Interest Alliance, has been in the forefront of gathering data for various issues that we deal with; shelter populations, the shelter trends, economic impact statements, working with scientists and PhDs on different medical studies. We are very, very strongly supportive of the concept of developing the kind of databases that we've been talking about here today.

One of the things, as I was working on this and kind of getting ready to do a more standard presentation, that I began to think about is the fact that unless the information is used properly, unless the people who gather the information have a very clear understanding of exactly what they want to do — to Mary's comment earlier, to get a better answer you have to ask a better question. Very often I think when we start out working to gather information we have kind of an amorphous idea about what we're doing. We care very much about our animals. We want to solve particular problems. We want to find out in general what's going on. With that, I think we have to understand that as we work on individual projects, we also have to keep our larger goal in mind. I would say that there's some critical elements that we need to look at when thinking of this.

Number one is you need to get a working consensus within your community, within your industry about what it is that you want and basically your goals as a unified community. I can tell you from sitting around a lot of different board tables with people who are very sincere, and who launched off in different directions to generate, create, gather and utilize data. That even in groups of eight, nine, ten, twelve, much less, when you're dealing with hundreds and thousands of people — because we all are involved with animals, because we love animals and our values are a big part of what this association is all about. You'll find that every person that's sitting around even a table as small as the one I'm talking about have slightly different ideas about what the goals are. So it's very, very important as a community to come together and to define those goals very, very crisply.

There always are real problems that need solving. That's the wonderful thing about data is that by doing the kinds of work that Tim was talking about, you can begin to get a handle on problems you've been dealing with for a long time. Another one of the problems that you have is that you have an urban population of course that's very disconnected from animal issues. Again, to Mary's point, if you aren't framing the issue, somebody else is, and very often it is people who do not have the expertise knowledge or, in the case again of what we're talking about with epidemiology, they don't have the systematized sort of uniform approach to it.

Finally there is a political movement with the stated goal of eliminating all animal use, and certainly horse racing is one of the things that they are after. I think that you know this information, basically just how much times have changed. I'm also on the board of AKC as Mary said. We were founded

about the same time, just a little bit after the Kentucky Derby. I think we're the second oldest sport of that type in the United States. Even at the turn of the century here before the automobile, everybody still had horses. Today I have my little picture of what the average person out there has in terms of their understanding of animal issues. We have little cats at a party there with hats on. The bottom line is that 63 percent of the public have pets. Very few people have horses. They get their information from their hands-on experience with their pets and from what they see in the media and from what the fundraising groups tell them.

Their understanding is very easy to manipulate. What I wanted to say here is that the animal rights, animal liberation movement, is really not at its core about animals. We are, and we have to remember that. We're the ones who care. We're the ones who put in the work, the money, all of the energy, education and so on to try to improve their lot. The movement is a power movement. It's a political movement. It's about who decides, and again, to Mary's point, it's about whether you frame the issues using good data or whether somebody else frames the issues using their point of view, subjective or otherwise.

The tactics that are used to push the different goals, I think sometimes the craziness of some of the groups that are out there or the violent tactics of some of the groups can kind of confuse us about what we should be doing. What I want to focus on here is that we're in a propaganda war. Again, that's why information is power in this particular set of circumstances.   As de Tocqueville said, "It's easier for the public to accept a simple lie than a complex truth." As Goebbels said, "If you tell a lie big enough and keep repeating it, people will eventually come to believe it."

So again, in terms of empowering the information that you are gathering, I just want to run through this set of sayings here that I think you've heard and emphasize it. Basically whoever frames the issue controls the debate. Whoever controls the debate generates the perceptions that form public opinion. Whoever creates public opinion sets the public agenda. Often in our case by the time that we're facing legislation, we've already lost the public relations war.

To a particular issue and why it's important that you gather good data but that you have a clear understanding of exactly why you're gathering it; what your goals are, how you plan to use it, this is an issue that our community has dealt with. Some would say we've dealt with it very, very successfully because we've not only greatly reduced the number of animals going in shelters; over the last 30 years there's been an 80 to 90 percent decrease, but we also win most of the legislative battles that we have undertaken. These are just some shelter data showing you the decrease in euthanasia and shelter impounds in most parts of the country. In most parts of the country I think it averages about 80 to 85 percent decline overall in the last 25 years or so.

The reproductive status of dogs in households in the United States is 76 to 87 percent. I think that should be astonishing. Again, considering that we were euthanizing 20, 30 million dogs about 30 years ago and that we're now euthanizing somewhere less than two million, we've come a long way in promoting the message of responsible dog ownership and that all dogs that are not being used in formal breeding programs should be neutered. That's a good thing. In the process of this and because we didn't particularly frame the issues well, the issue became dogs are dying in shelters because of breeders. We didn't reframe the issue. We simply attacked the problem. We simply gathered the data. We did the work. We promoted the idea that spaying and neutering is good, but in the process of doing all of that, we didn't frame the issue and make ourselves the good guys in this.

So after 30 years we are the — the public in general thinks that we are responsible for pet overpopulation, puppy mills, responsible for creating genetic diseases and people who don't really care about dogs. Then worse, the animal rights groups are the leading resource for media and lawmakers today, not our community. This is a very serious problem. Then to the issue of overpopulation, we find that even after the numbers have declined, we constantly come up against — go into legislative battles where misinformation is used, claiming that the same problem that existed before still exists or that a particular kind of law is going to make it better. Here is a couple of graphs. The red line is one that activists pushing a particular law introduced into California. The blue line is what the real data showed, so we have misinformation that we're dealing with as well as the general public perceptions.

This is what the actual trends are. Dogs produced by US breeders are down. So-called designer dogs are increasing. International pet sellers, legal and illegal, are increased. CDC said over 300,000 dogs were imported into the United States in 2006 because dogs being bred in the United States can't meet the demand. US Custom and Border Patrol sting operations suggested 150 came across the border from Mexico in 2007. This is an ad from a web site in the Caribbean that sells dogs to the United States to meet the demand here. This is from Puerto Rico, another organization that rescues dogs and sends them to the United States where they are placed in shelters. This is the puppy task force I mentioned. This is a place called The Animal Place which is in northern California, and it was created by the same person who introduced the first ordinance that I mentioned, the 1969 San Mateo ordinance that got me involved. What they are doing there now is importing dogs from Mexico to meet the demand in California because breeding has been so greatly reduced that there's a greater demand than supply. These are registration statistics from the American Kennel Club that show you a very, very steep decline over the last, since 1993, the peak year. This is another way of representing it. It shows that we're at about 1964 levels.

We wonder if there's going to be — if a price point will be reached and suddenly things will bounce back and the breeders that have left will come back in and breed. In my own breed, this is the trajectory. We've lost 98 percent of our breed since 1993. There is a story that goes with it, and the story is that when *101 Dalmatians* came out, our community launched their own advertising campaign to convince the public that the Dalmatian wasn't for everyone, fearing that the movie would generate a real — a situation where people would begin breeding them indiscriminately and it would become a bad breed. Unfortunately, because we didn't define our goals well, we didn't understand the issues well. We didn't have the data that we're talking about gathering here in order to really define what it was we were dealing with. Our message to the public was the Dalmatian isn't for anyone, and the public believed us.

What's worrisome about this, if you've been paying attention to the recession, they talk about the V, the W, in terms of the kinds of rebounds you can get, or the L. The jobless recovery is that we have an L here. We're not seeing new people come back into this at all. That's worrisome to us. Back to, again, the issue of pet overpopulation, at the time that this was first initiated in San Mateo, the thing that generated the campaign we've been dealing with for the last 20 years, this was the actual trend line. They were already almost at the point of solving their problem.

My point in all this is that had we understood the importance of defining what it was we were really trying to do with the data that we gained, and again, just last year alone we were involved in 78 different bills. I think that we beat almost all of them, I would guess somewhere between 65 and 70. During that entire time that we were gathering data and using the data effectively, legislatively, we were losing the public relations war. So it's very, very important that you define your goals very, very carefully and that you wind up being the people who frame the issue about what you're trying to do. In fact, the term overpopulation itself is the harmful thing here. There is a pet distribution problem, and there is a pet retention problem, but in most parts of the country the dogs entering shelters aren't puppies. They haven't been for many, many years. They're dogs that have different kinds of behavior problems, and had we gotten ahead of the issue and talked about it more effectively that way, I don't think that we'd be in the same situation that we're here.

My counseling or I guess I'm the cautionary muse, here is that I'm very strongly in favor of gathering data. You absolutely need it. If you don't have it, somebody else is going to define you. The power of information will be realized only if you reach consensus within your own industry about your values and goals, define them clearly, and focus information gathering, reporting and utilization to achieve those goals, and that's my talk.

Dr. Scollay: Thanks Patti. We're going to open the floor up to questions and comments. I just was really struck by one of your last comments where

you pointed out that dog fanciers are best equipped to solve their problems. They're best equipped to address the behavioral problems that result in dogs losing their homes. I think it's critical for us to recognize in this room and within this industry that this industry is best equipped to solve its own problems, and we are at tremendous risk if we defer that responsibility elsewhere. With that, I'd like to open the floor up for questions or comments if anyone has anything, or you just want to go to lunch, that's okay. Alright, thank you for coming.