QUESTION: I understand the premise that pigs are going to Iowa because of the corn and the soya beans. And I understand that we’re building plants and turning it all into gasoline. What long-term is going to happen to the pigs in Manitoba if we are feeding our corn and soya beans to cars instead of to pigs?

STOKES: I think one of the inevitabilities is that the price of grain is going to go up because there’s going to be so much demand. They’re building all these gasohol plants so now you have more expensive grain and that makes the product more expensive.

QUESTION: So what’s going to happen Dr. Whiting?

WHITING: There is no simple answer. I believe this multi-site production system started in the Netherlands because of environmental concerns. A little pig worth 50 bucks produces a small amount of manure to weaning age. A pig weighing 200 pounds stays for 140
days and produces lots of manure. So if you want to make money and not make manure, make little pigs and then sell them somewhere where getting rid of manure is cheap. This system from an environmental sustainability standpoint is excellent. The soil in Iowa can absorb unbelievable volumes of soy manure. And in Manitoba our crops just can’t suck up very much manure. But we have lots of committed animal farmers who love pigs and we can make a really good iso-wean piglet. That pig can then go to Iowa to get fed. They don’t have to truck the corn anywhere because they grow it there. They can feed it to the pig, value-add and put the manure back on the land. So environmentally it makes very, very good sense. But the private interest groups in livestock production, of which there are legion, are always looking for reasons to block, and even to damage, their own industry if they as individuals will benefit from it. So what we need is a much more international approach to foreign animal disease preparedness, like they have in Europe. It’s an international problem. We’re not going to solve our problem by closing the border even though that’s the first trigger reaction. And incidentally, no government can keep up to the speed at which livestock production systems have changed.

QUESTION: Part of my perspective from the CFIA is that I’ve always viewed the management of animal health as a community issue. I don’t think it’s the CFIA off on it’s own and I don’t think that the CFIA does everything for animal health or welfare. There are roles for provinces, there are roles for industry and there are roles for the profession. We will assume, certainly under my watch at the CFIA, that there are things that need to be improved and that there’s work to be done and we will work until we’re relieved of our duties to try to achieve those goals. But in the interim, part of the purpose of this conference is to explore what the solutions are.
The reality is that part of it is economic and we have to change the economic models. Do we support industries that are so dependent on single markets that we create consequences down the road? Do we support the reality of euthanasia as the only solution to biological control? I’d like to hear some discussion about the solutions as opposed to saying that we’ve got this litany of failure around the world and within North America as well. I would welcome anyone on the panel to talk about some of the consequential issues here and how you see them evolving and under what sorts of frameworks.

WHITING: In Canada the framework is pretty clear. We have an agriculture policy framework which is supposed to set out five-year plans for agricultural policy development. And animal welfare did not make the cut last time and I don’t know whether it will make a significant line item in the next five-year development policy. It’s clear that Agriculture and Agri-Food Canada is responsible under our system for farm sustainability, animal welfare and pre-outbreak trading patterns. This is clearly Agriculture and Agri-Food Canada’s mandate but currently we, the provinces, do not have a national partner in planning for the consequential effects of foreign animal disease. There is no national partner at the table to talk to about this. It’s not under the agriculture policy framework. Tell me if I’m wrong, it’s not the CFIA’s job to deal with this issue but it is the CFIA’s job to say yes, there is an issue. I went to Holland ten years ago with a specific mandate from the CFIA to talk about animal welfare issues. I brought information back and was told by a colleague that, as a science-based organization, the CFIA won’t deal with information unless it’s in a peer-reviewed form. So I published in the Canadian Veterinary Journal. And still we have no national level attention to this issue. What I see as
a veterinarian is that the public expects us to respond and we’re not responding. But we have to at least get out there and talk about it.

HEATH: I’m not here to tell Canada how to do what they’re doing, but we have an integrated industry in the States. We know, even without hypothetical modelling or theoretical modelling, about animal welfare concerns and coming disasters and that it’s a very significant issue. I would like to get to the question of solutions. There’s a saying, and I can’t remember which one is further behind, but there’s industry and there’s the private sector and then 10 years later along comes academia and then another 10 years later along come government policies. There is a time-lag between the driving forces for change and the policies that will support those changes. And there is a real disconnect with reference to the speed at which globalization, and everything, is changing. Think about 20 years ago when we didn’t even really comprehend the Internet, and now text messaging is one of the best ways to communicate in a disaster. Who could have known that? I think the change will come if the private sector sees that there is a risk to them, a serious threat to their survival. And I think that is occurring.

Two exercises we conducted in large agricultural states, one in the dairy industry in California and one in the beef industry in Texas, had the industry saying, and I’m paraphrasing here, “we can’t do what we say we’re going to do.” And I think that’s a very important step to recognize. If you can’t do it then why try? We can’t kill 30 million animals in the Texas panhandle so why are we even considering that as an option? That’s a very first step but I think that shows change is occurring. And I’m not sure that we’re going to get a government policy in the next 20 years that is up to speed with that, but the private sector knows how to control
disease. They do it every day. They’re innovative about doing it. The question is, can you make that into policy or even, does it need to be a policy if we know how to contain the disease?

What are the solutions? Practically speaking, I’m hearing things like the best thing we can do if we have a first case diagnosis is to do nothing for about seven days. Obviously monitor where the disease might be, but don’t go into killing lots of animals. Because perhaps that’s the wrong thing to have decided to do when you suddenly realize a week later that you have, not one herd but 400 herds, and not 2,000 animals but 20 million animals. You don’t want to start off in the wrong direction. So that’s one thing I’m hearing. The other thing I hear, and I don’t support this, is that livestock producers have a way of making disease unmanageable. And you know what that means. A million people get so big so quickly that we will start killing and it will become a major issue.

Really the question is, ‘where do we stand with reference to having a vision for agriculture?’ I think a lot of issues pertaining to the environment, animal welfare and water supply are integrated. But what we really need to be thinking about is the forum by which we can discuss these issues. How do we bring them all together and start looking at not just the problems, which I think we do recognize and acknowledge, but at some solutions? How do we deal with the reality of modern day agri-business and the reality of a sustainable society, especially at the local level where animals are raised?

**QUESTION:** I spent three months working with FMD (Foot and Mouth Disease) in the U.K. and three months in B.C. with Avian Influenza. I know hindsight is 20/20 but some disasters are quasi-predictable. You just have to ask any insurance company. It was only a matter of
time before New Orleans got hit and that was, a lot of people would say, relatively predictable. And it was the same thing with AI. Knowing the way in which the farms in Abbotsford are positioned, how they work and how their operations work, it really was predictable that they were going to get hit. The focus of my question is on increasing the use of preventative processes to maximize animal welfare during such disasters. Because in both outbreaks there were no, or few, preventative measures that I could see.

It appears that economic parameters drive the decisions that are made before, during and after disasters. Also, that the people making these decisions are generally those who have the greatest to gain or the greatest to lose with respect to profitability. This is obvious in industry, but academia is not immune from these same economic pressures. So when a disaster occurs, if there are not any back up processes or equipment already in place - something as simple as a storm cellar when a tornado goes over or a back up generator when the power goes out - then your response is limited. And this often leads to euthanasia as your best response because you have no other options and, in your worst case response, it leads to unaided death and lots of animals suffering.

As global trade increases, the competitive pressure to reduce costs increases for everyone - farmers, contract research facilities and universities. And short-term economic survival takes priority over investing in preventative measures that would clearly mitigate the impact of a disaster on animals. How do we create, on an economic level and at all levels, the motivation for people who are responsible for animals to invest in preventative versus reactive response measures? And how do you get the government to implement these changes? We can’t all afford to experience a
disaster first hand before we learn how to get it right the second time.

STOKES: Emergency preparedness does come at a cost. There is a cost in the time it takes to prepare and emergency generators are expensive. There are a couple of things I’d like to comment on. I think one of them is that you need a level playing field. Animal research facilities all adhering to the same standards of emergency preparedness based on the relative risk of where they are located would be one approach. And to some extent that is done through the provision of good laboratory practices which are required for, not research, but for testing under the FDA (Food and Drug Administration) and the EPA (Environmental Protection Agency). So that does help level the field as far as how you do things. Another approach is through the AAALACI (Association for Assessment and Accreditation of Laboratory Animal Care International), which is a voluntary program. Many companies, mostly in the pharmaceutical industry, do require that their contract research organizations adhere to that voluntary AAALACI standard. That would include having a disaster plan and adequate preparedness.

On a more community or regional level, I think that one of the things that can be done is to look at sharing equipment. So that instead of every single operation, whether it be agricultural or biomedical research or testing, having a big generator, there would be generators that could be quickly mobilized and shared across a regional area. During Hurricane Wilma in Broward County California, 96 percent of the establishments lost electrical power. Most of their utility line towers were toppled by the hurricane. From a public health medical services standpoint, people couldn’t get to medical clinics, medical clinics were closed. The State of
Florida mobilized mobile health clinics from communities all around South Florida and they brought those into Broward County. And they were able to continue providing medical services with personal and vehicles that were brought in. The idea worked very well and I’m fairly certain that they’re implementing the plan so that wherever a hurricane hits in Florida they’ll use these mobile vans. But they’ll have a plan to mobilize them instead of having to buy a whole bunch of them for every single county. So that’s just one way of sharing resources to address emergency management plans without having excessive cost.

WHITING: The Netherlands has had both hog cholera and Foot and Mouth Disease. Subsequent to those outbreaks there were products developed for insurance. Farmers could buy insurance and much of the premium would be subsidized by the government because it’s a green box subsidy. They found in the U.S. though that farmers would not buy insurance - for logical reasons. They believe that if there’s a huge disaster, and any foreign animal disease in North America is going to be a huge disaster, farmers believe that buying insurance and investing in preventative measures is a waste of money because no government will be able to resist ad hoc payments. And I, from a purely rational point of view, have to agree with them. I have no examples of a western government not responding with ad hoc payments to a disaster. Even disasters created by poor business models. If it becomes a disaster and some politician might not get re-elected, the government responds with ad hoc payments. There has been quite a bit published in The American Review of Economics about weaning farmers off their dependence or their belief in the governmental response of ad hoc payments.
HEATH: I think that we’re identifying the realities and the question is, ‘what are the solutions?’ Firstly, let’s just look at economics. Economics is the surrogate for incentives. Whether it’s money or personal beliefs or demographic shifts in population, economics can get a bad rap because it’s money. But remember that economics very often is just the bad boy term for incentives and that’s really what we’re talking about. So that’s number one.

The other thing I want to say is that we’ve stated some very obvious facts. We’ve looked at some animal movements and we’ve looked at what can be in place at the time of a disaster. I think it’s very important to understand what happens in a disaster. What happens in a disaster is your demands for resources outstrip your available resources and it’s not until you get those back into balance that you move into recovery and then into improvement. What precipitates a disaster is sometimes predictable and sometimes not, and very often if you think of the introduction of foreign animal disease into North America, we can’t really predict when and how that’s going to happen, but we can assume that maybe at sometime it will.

A third line of thinking is that the conditions that emerge in a disaster really reflect the underlying conditions at the time of the disaster. And there are some very interesting historical studies of disasters and pre-existing conditions. I’ll give you one example, but then I’ll move on quickly to what I think we really need to think about in terms of wanting to establish our pre-existing condition. A lot of people think that colonial architecture is beautiful in Central and South America. Colonial architecture, which was introduced into Central and South America in the 18th Century by the Spanish and Portuguese colonialists, has been responsible for probably more deaths of Central and South...
American people than any other cause introduced into the western hemisphere. Because it is basically bricks and mortar construction in an area that has very high seismic activity. The native buildings are adobe and flop around. They are dome built so they lean on themselves or they’re tree structures, depending on where you are, and some of them are very high structures that kind of sway in the wind. If you go to Havana or Catalina in Columbia or Buenos Aires, you’ll see some of the original Colonial architecture. It really is spectacular, but they are about the only three cities in South America that have not been devastated by earthquakes.

So what are the pre-existing conditions that we have if we have a foreign animal disease outbreak? What would we like to see agriculture be like if we had a disease outbreak? What happens in every disaster, and especially with a disease outbreak where the infrastructure stays in place, is the system restructures and reorganizes and becomes more efficient. And there is an opportunity here because the reality inherent within a cycle of disaster is that attention is paid when the disaster is occurring. And that’s your opportunity to strike. The first plan that reaches the politicians’ desk is the one that’s going to get adopted. So the challenge we have is not how we respond and what we have in place. The challenge is how do we develop a concept of modern agriculture that addresses environment, animal welfare, health and humanity and a global food supply? How do we want agriculture to look so that if we ever have “the opportunity of restructuring” agriculture as we know it, because of a major disease outbreak, that we have that plan in place ahead of time? Because that’s when people will pay attention. Trying to bring about change is an insidious process tied up with election cycles and it takes people who are devoted to this for a lifetime to affect that change. But the reality of disasters is that they create tremendous opportunities
when they strike. Getting things in place ahead of time is your best bet to turn a disaster into an opportunity.

QUESTION: I’m on the Ontario Livestock Poultry Council and I’m going to try to give you some solutions. There is hope out there and there are things happening but it has to start at the producer level and then go to the Ontario and Federal levels. It can’t be on its own. If we all work together then we won’t have to reinvent the wheel. With reference to the comment about the economic end and how we can approach producers at that level, that would be me who will have to change my regulations. But I can’t keep doing it for free because I’m not getting any more price for my pork. We, the producers, get all the regulations put on us, whether it’s welfare or certain drugs we can use or certain antibiotics or vaccines that we can’t use in Canada. But then we have pork that is imported that we can buy off our shelves. I go to the local grocery store and I check where that pork has come from. And if I see anything from China that’s food related I am very cautious about buying it because I visited China and I am very afraid of what is going on there. We need to educate our producers and our consumers to know that health is good food.

Increasing biosecurity is also a big deal. On March 1st we had a simulation with 82 people participating including people from the Ontario government, our truckers, the producers, the renderers and the CFIA. And the CFIA is doing a lot. The CFIA people who I dealt with really want to help but they are stalled through things like regulations. It is a big job but we take it one piece at a time. In the Ontario pork industry, with reference to Dr. Whiting’s presentation, we have started talking about how we can measure the way in which the pigs are moved. If we can do the education and put biosecurity measures in place now we can work towards
prevention. And if it does come in then we understand that they’re going to close the borders but perhaps not for as long. Which would have an impact because we are dependent on export. At the Ontario Livestock Poultry Council we’re working with the Canadian Animal Health Council, including the veterinarians who are on the board. We want to work on emergency management plans and prevention. It’s not easy and it’s not small and I will be looking for funding.

QUESTION: I’d like to take the discussion wider and more international, because if there’s one area where there isn’t a level playing field it’s between developed and developing countries. Over the last few years we’ve seen major problems with disasters hitting developing countries as well as developed. And I want to pick up something, which is that it’s not enough to have or be given an emergency plan. The process of developing that plan, working towards it, is an important part of coming to understand what is needed. Clearly it would be easier for us in developed countries to give emergency plans to developing countries rather than to work with those developing countries. How can we work with developing countries to help them to develop their own capabilities and work with them through that?

HEATH: It’s within the process of planning that these things get worked out. If you know who to call then you know how they’re going to behave. It’s really 70 percent of the solution – even more. How do you get engaged? Let me just turn the question around a little bit. Some time ago during a training program at Plum Island for foreign animal disease diagnosticians, we were looking into the opportunity of bringing foreign nationals to the United States to train in our labs. And someone suggested that we think about turning that around and having our veterinarians go to foreign
countries to see the disease in the field and all the various manifestations. Because it’s never the way it is in the textbook. So you would see the disease in the field and you would also get to understand how the disease has to be managed in the field within the context of real people and real communities. And then somebody took it one step further and suggested that it would be cheaper for us to train veterinarians in developing countries – to fly them where the diseases are, have them see the diseases in the field and learn all about them there - than it would be to train them back at home. Well, that sort of becomes a politically sensitive issue. I think it can look good if it’s passed off as an international agreement or a step toward positive international relations. I think what would come of that is partly selfish, but then again it is our tax payer money going into it so maybe that’s justified. We could develop a cadre of people to get involved with other disease control programs in other countries. There is a lot of opportunity. There are huge vaccination campaigns in South America every year. But I think the other thing that would happen is that we would establish good professional relationships with our counterparts in those countries. And I think that’s the key to success because things get done because of personal relationships. They don’t get done because there are institutions. The institutions provide the bricks and mortar where people live, but it’s the personal relationships that the people have who work in these areas with the people who work in other areas that are important.

You can establish programs where you have farmer to farmer working on biosecurity programs. And I think if you look at the changing, aging demographic of North American agriculture, you will find that the women are really the land owners in North America and certainly in America now. Have women work with women in developing countries on sanitation and animal
husbandry and child education, so that those one on one relationships can be established. I think it is important to start a grass roots movement. Like I said earlier, if the stakeholders who would be worst effected don’t have any interest and don’t really see the problem, then no government is ever going to convince them. It will just become a political issue to try to convince people to do things that they don’t really want to do. I think there are some models out there for these kinds of farmer to farmer and women to women programs.

The other thing too is that you’ve got to piggyback animal programs. Remember the statistics are that 50 percent of people own animals and that means that 50 percent of people do not own animals. It doesn’t mean that they don’t like animals but it means that you’ve got a mixed constituency and you have to take that into account. The way to overcome that is to piggyback onto other programs. One very clever example of that I thought was with rinderpest. Rinderpest was really the most devastating cattle disease we’ve ever known in the history of livestock raising. Part of the reason why the eradication program was so successful was twofold. Firstly, we developed a really excellent vaccine. A once in a lifetime inoculation of modified live virus will give you 98% immunity. So beat that on the human side. It was really the best vaccine ever produced. Secondly, it was piggybacked onto a polio vaccination campaign for children. The main area where rinderpest occurs is in sub-Saharan Africa among nomadic populations who migrate east-west. These populations value cattle very highly and they would not have their children vaccinated unless their cattle were also vaccinated. So UNICEF (United Nations Children’s Fund) became for many years the largest purchaser of cattle vaccine and they would vaccinate cattle to get to children. And that was a major contributor to eradicating
rinderpest. So that is an example of how you can find these programs to piggyback onto. Piggybacking onto programs such as water quality and health access for women and education for children, issues which are important to societies throughout the world, is a good way to get in.

STOKES: I would certainly support what was just related. In the human health arena, we’ve sent considerable aid to Southeast Asia to help build up their infrastructure for surveillance and disease investigation with reference to Avian Influenza outbreaks over there. Building that infrastructure and training and educating people there is the best way to stop a worldwide pandemic. When they know what to look for and can recognize it then they can stop it in its tracks. It is the best approach. And I agree that we need to bring people over here and have them trained at our facilities and in our programs and I think we need to send our people over there to work and build those relationships. We become one global community when we function as a community. Right now we’ve got a lot of barriers to that but we do need to move more in that direction.